



PSI
FOUNDATION

2015
ANNUAL REPORT

APPLICATION PROCEDURE

All requests for research funding from PSI Foundation may be submitted at any time, as PSI no longer has application submission deadlines. A decision will be made at the next grants meeting following the external peer review process. Final funding decisions can be expected a maximum of 6 months after an application is received.

While PSI obtains independent appraisals on applications, the final funding decision lies with our internal Grants Committee and the Board of Directors.

PSI now accepts grant applications through our online application system. Application guidelines are available on the Foundation's website, and any inquiries regarding funding opportunities should be directed to:

PSI Foundation
Tel: 416-226-6323
Fax: 416-226-6080
e-mail: psif@psifoundation.org
website: www.psifoundation.org

Although the Foundation does not solicit funds, as a charitable organization we are able to accept donations or bequests and provide receipts for tax purposes.

MISSION STATEMENT

PSI Foundation is a non-profit physician centred organization dedicated to improving the health of Ontarians through excellence and innovation in clinically relevant research and education.

PSI FOUNDATION

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Toronto, Ontario
M2N 0G2

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*joined 2015

[†]opened account September 2015

[‡]closed account July 2015

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 Nuvi Dhaliwal (joined 2016), *Post-Grants Coordinator*

Hylde Audisho, *Administrative Assistant*
 Linda Cheng, *Accountant*
 Raisa Bhuiyan (resigned 2015), *Office Assistant*

* special Committee member

† joined 2015

‡ term ended April 2015

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* deceased 2015

PRESIDENT'S REMARKS

Whether it is optimizing prescriptions for the elderly with dementia, probiotics to prevent antibiotic-induced diarrhea in children or understanding the effect of intimate partner violence I am proud of the impact that the PSI Foundation has had this past year on research and physician education.

In my first official message as President, I have to note that my transition to President has been seamless thanks to the 45 years of growth, innovation and collaboration that has defined and shaped the Foundation. We continue our mission to improve the health of Ontarians with an emphasis to support new physician investigators and to promote the translation and dissemination of new research findings. We are unique in our commitment to physician led research relevant to patient care, support for resident research and the education of practicing physicians.



In the past year, we have placed an emphasis on solutions that address key opportunities and needs. We have completed the move into the PSI Foundation's new office space and invested in our technology infrastructure. We have improved our grant review process and our understanding of the outcomes of the research we fund. We revealed, during our review of funding priorities, an opportunity to fund Mental Health research and received many high quality letters of intent from all Ontario Medical Schools; with select participants invited to submit full proposals. We have confirmed an expectation for the conduct of funded researchers and research institutes. And we have reviewed and confirmed support for the Knowledge Translation and Educational Fellowships and have increased the funding amount for Healthcare Research by Community Physicians.

We would like to recognize the strong financial foundation that allows us to fund research and education. The Finance Committee, chaired by Mr. John Sharp with members Mr. John Eby, Mr. Paul Richardson, Mr. Jim McGill, Ms. Giselle Bodkin and Dr. Robert McMurtry manage our resources and investments with a long-term outlook to meet our current needs while investing for the future. Our healthy financial position allows the Grants Committee, chaired by Dr. Andrew Baker, and supported by Dr. Bill Hemens (Bracebridge), Dr. David McNeely (Toronto), Dr. Robin Walker (London), Dr. Deborah Cook (Hamilton), Dr. John Drover (Kingston) and Dr. Naana Jumah (Thunder Bay) to invest in the high quality work proposed by Ontario physicians. We are also grateful for the many external reviewers who devote their time and content expertise to support the grant review process.

As we close the year, a special thank you to Dr. David McNeely, PSI Foundation Past-President, who is stepping down after 30 years as a Grants Committee member. I would like to thank Dr. McNeely for his commitment to the success of the PSI Foundation and for his research insight, encyclopedic knowledge, keen wit and wise counsel. We welcome Dr. John Drover, from Kingston, who has joined the Board and the Grants Committee and Ms. Giselle Bodkin, from Barrie, who has joined the Finance Committee.

The Foundation's success lies in its people. We gratefully acknowledge the continuing excellent support of our Executive Director, Mr. Sam Moore. He inspires his team to think in practical and creative ways that produce effective and innovative results. And our success would not be possible without the talent, dedication and hard work of the Foundation staff: Ms. Jessica Haxton (Grants Coordinator), Ms. Hylde Audisho (Administrative Assistant), and Ms. Linda Cheng (Accountant). We thank Ms. Raisa Bhuiyan and welcome Ms. Nuvi Dhaliwal our new Post Grants Coordinator.

I would like to acknowledge and express my gratitude to my colleagues on the Board and to the House of Delegates. Your dedication and commitment to oversee the work of the PSI Foundation is exemplary and highly commendable. This report represents a brief glimpse of the achievements of a Foundation conceived by physicians and dedicated to improve the health of Ontarians. I invite you to read on.

Respectfully submitted,

A handwritten signature in dark ink that reads "W James King". The signature is written in a cursive, flowing style.

W. James King B.Sc., M.Sc., FRCPC.



2015 PSI GRAHAM FARQUHARSON KNOWLEDGE TRANSLATION FELLOWSHIP

"Effective knowledge translation is integral to the practice of medicine and public health. Traditional "bench-to-bedside" translational research has involved taking discoveries from the basic sciences and translating them into clinical applications. Another equally important type of knowledge translation takes these applications from the bedside to best practices, synthesizing the evidence on important clinical questions and translating the knowledge into clinical practice guidelines and public health policy. The PSI Graham Farquharson Knowledge Translation Fellowship will allow me to apply this model to the big questions in clinical nutrition and chronic disease prevention."

The PSI Foundation is pleased to announce Dr. John L. Sievenpiper of the University of Toronto and St. Michael's Hospital as the 2015 PSI Graham Farquharson KT Fellow. This Fellowship – valued at \$150,000 per year for two years – is intended to protect a new, promising clinician's research time, allowing the Fellow to undertake high impact translational research.

The Fellowship will allow Dr. Sievenpiper to conduct translational research to address the important questions confronting nutrition guidelines committees. There has been a recent move away from the more traditional nutrient-centric approaches ("low-fat," "low-carb," "high protein") to more food and dietary pattern-based approaches, a change Dr. Sievenpiper helped to initiate and steer in the Canadian Diabetes Association 2013 Clinical Practice Guidelines for Nutrition Therapy. Coming out of this process, his work will use systematic reviews and meta-analyses to synthesize and translate the role of various food and dietary pattern-based approaches in cardiometabolic health. This work will improve health outcomes by informing clinical practice guidelines and public health policy, stimulating industry innovation and identifying gaps for future clinical investigation.

Dr. Sievenpiper completed his MSc, PhD and Postdoctoral Fellowship training in the Department of Nutritional Sciences, Faculty of Medicine, University of Toronto. He completed his MD at St. Matthew's University, School of Medicine followed by Residency training in Medical Biochemistry at McMaster University. Dr. Sievenpiper is an Associate Professor in the Department of Nutritional Sciences, Faculty of Medicine, University of Toronto. He is also a Scientist in the La Ka Shing Knowledge Institute, Knowledge Synthesis Lead of the Toronto 3D Knowledge Synthesis and Clinical Trials Unit, and Consultant Physician in the Division of Endocrinology and Metabolism at St. Michael's Hospital. He has authored over 100 scientific papers and 12 book chapters. He remains directly involved in knowledge translation with appointments to various nutrition guidelines committees including those of the Canadian Diabetes Association, European Association for the Study of Diabetes, and the American Society of Nutrition.

ORGANIZATION

PSI Foundation was incorporated on June 4th, 1970 under the laws of the Province of Ontario and is registered with the Canada Revenue Agency as a public charitable foundation under the Federal Income Tax Act.

PSI's membership is composed of physicians representing each of the Ontario Medical Association's branch societies and six other persons appointed by the Board of Directors for their interest in the Foundation's activities. These six members and eight physician representatives of the medical societies form the Board of Directors. The management of the Foundation is vested in this Board. An Executive Committee acts for the Board when required between meetings of the Board.

Finance and Grants Committees make recommendations to the Board of Directors on investment policy and granting programs respectively. Both Committees are largely composed of members of the Board of Directors.

An Executive Director, who is responsible to the Board, administers PSI's programs, as approved by the Board.

SOURCE OF FUNDS

The original capital of the Foundation came from the remaining funds of Physicians' Services Incorporated, the doctor-sponsored prepaid medical care plan.

HISTORICAL BACKGROUND

Physicians' Services Incorporated (PSI) commenced operation in November 1947 and soon became the largest prepaid medical care plan in Canada. PSI was sponsored by the Ontario Medical Association and supported by about 8,000 practising physicians in the Province of Ontario. These participating physicians agreed to allow the Corporation to prorate their medical fees in order to meet administrative expenses and provide the reserves required by law.

In September 1969, PSI ceased operation due to the implementation by the Ontario Government of what is now the Ontario Health Insurance Plan. The Board of PSI and the participating physicians decided that the funds remaining in the general reserve, after meeting all obligations to subscribers and physicians, should be used to establish a foundation, the income of which would be applied to charitable activities within the health field.

GRANTING POLICY AND PROGRAM

PSI Foundation is a granting agency and does not normally engage directly in charitable activities other than awarding medical fellowships. In accordance with the Federal Income Tax Act, PSI must award grants to other registered charities as defined by the Income Tax Act. Hospitals and medical schools come within this definition for the purposes of the Foundation's granting activities. Organizations seeking funds must provide the organization's charitable registration number issued by the Canada Revenue Agency. It is a policy of the Foundation to devote its funds to charitable endeavours in the health field within the Province of Ontario only.

PSI's granting interests focus on two areas - education of practising physicians and health research with emphasis on research relevant to patient care.

EDUCATION OF PRACTISING PHYSICIANS

This program is directed at physicians in established practice in Ontario, residing outside of the teaching centres, who wish to take a period of training to bring a needed clinical skill or knowledge to the community or to undertake training in research methodology.

Fellowships are provided to cover course fees, if any, transportation, room and board costs. Funds are not provided to replace income lost while undertaking a training program and the program is not designed to assist physicians taking refresher courses.

KNOWLEDGE TRANSLATION FELLOWSHIP

Translational research aims at transitioning research discoveries to the real world to improve health outcomes. This prestigious Fellowship protects research time of a new, promising clinician, thereby allowing the Fellow the opportunity to pursue their research interests.

HEALTH RESEARCH

Within this broad category, PSI's preference is to support research into any clinical problem (other than cancer, heart and stroke, drug and alcohol abuse, pharmaceutical drug studies or where there is substantial funding available through other agencies) that is of direct relevance to the care of patients.

PSI offers funding in the following funding streams:

- Clinical Research
- Medical Education Research
- Health Systems Research
- Healthcare Research by Community Physicians

CLINICAL RESEARCH

Clinical research is defined as research that is of direct relevance to patient care. Studies involving animals will be considered only if the animals are required as an immediate patient surrogate, which should be indicated in a written statement attached to the application.

Applications will be considered only where a practising physician is the principal investigator, which is defined as being a College of Physicians' and Surgeons licensed MD. Applicants must possess an academic appointment, defined as someone who is allowed to apply for his or her own research grants and be an independent investigator. Further in establishing priorities among applications, when scientific merit and clinical relevance are equal, preference will be given to the new investigator as opposed to the established investigator.

Fellows are eligible to apply for research grants but are required to have a co-investigator who has an academic appointment. The fellow must provide evidence of having official hospital status, which should be in the form of a letter from his or her supervisor or department chair.

The duration of projects considered will be for a maximum of two years. Except under unusual circumstances, PSI cannot consider applications for projects requiring more than \$85,000 per year.

NEW INVESTIGATOR

The new investigator funding stream offers researchers the ability to apply for three years of funding, as opposed to the standard two years, and a total amount of \$250,000 (maximum of \$100,000 in any one year). This funding stream is only available to those investigators within the first 5 years of his or her first academic appointment.

RESIDENT RESEARCH

Medical research being undertaken by a resident will be considered if the project is supervised by a physician with an academic appointment. A resident project's maximum duration is two years, with a maximum amount of \$20,000.

The maximum annual amount for total approvals for this funding stream is \$300,000. These applications are in competition with all others, thus the maximum amount awarded could obviously be less.

Proposals within this funding stream must have been largely developed by the resident. The majority of the work involved in completing the research must be done by the resident.

The following is set out for the purpose of clarifying eligibility under the resident research program.

1. Salary for the resident must be provided by The Ministry of Health.
2. The individual must be in a recognized program leading to certification by the Royal College of Physicians and Surgeons or the College of Family Physicians. Residents in Royal College programs by accreditation without certification are also eligible.
3. Must be registered as a postgraduate student at the university where residency training is being taken.

The restriction whereby PSI will not consider applications for research within the areas of cancer, heart and stroke and mental health does not apply to resident research projects.

MEDICAL EDUCATION RESEARCH

Funds are available to support research projects designed to assess the post M.D. educational environment such as curricula, methods and teaching resources. PSI Foundation recognizes that research within this area may involve teams that include non-medical researchers.

HEALTH SYSTEMS RESEARCH

Projects focusing within the health care system, such as preventive medicine, care of the elderly, communications within the system, underserved regions and ways of enhancing the effectiveness of medical practice, will be considered under this category.

Applications within these categories should not exceed the maximum of two years duration and the limit of \$85,000 per year set for clinical research.

HEALTHCARE RESEARCH BY COMMUNITY PHYSICIANS

Within this category of funding, physicians practising in a community setting may apply for a grant to assist them in undertaking a review of their practice patterns which would enhance effectiveness of practise and patient care in their own clinic, hospital or region. Grants up to \$20,000 are available to cover the costs of the data gathering and analysis, support staff and preparation of reports. Up to an additional \$500 will be provided for travel costs incurred in presenting papers on the results of a community practice study.

MENTAL HEALTH RESEARCH

PSI instituted a new mental health funding stream in 2015. Each of Ontario's six medical universities were able to submit up to four Letters of Intent (LOI) in December. A special sub-committee of PSI's Grants Committee planned to meet in early 2016 to review these LOIs.

AREAS OF NON-SUPPORT

While not an all-inclusive list, the following areas are not supported by the Foundation:

- Annual fund raising campaigns
- Building funds or other capital cost campaigns
- Research in the areas of cancer, heart and stroke, drug and alcohol abuse, pharmaceutical drug studies or where there is relatively more funding opportunities available through other agencies
- Systematic reviews and meta-analyses
- Operating costs of any organization or department
- Budget deficits
- Service programs
- Ongoing research
- Major equipment, unless required for a research project being supported by the Foundation
- Projects outside the Province of Ontario
- Films, books and journals.

PSI Foundation will support only one project per investigator at any given time. If an investigator is currently being supported by the Foundation as the principal investigator, PSI will not consider an application for a new project until the current granting period has ended.

ASSISTANCE GIVEN

If in doubt as to whether a proposal would fit within PSI's interests or policies, please contact the Executive Director or Grants Coordinator for assistance.

GRANTING ACTIVITIES – 2015

- 130 applications received with a total value of \$14,604,500, compared to 230 applications totalling \$21,081,500 in 2014.
- \$4,122,052.75 in new grants were approved in 2015.
- Grants commitments totalled \$5,215,300 at January 1st, 2015 and \$4,632,353 at December 31st, 2015.

HEALTH EDUCATION

EDUCATIONAL FELLOWSHIPS FOR PRACTISING PHYSICIANS

No grants awarded under this program in 2015.

HEALTH SYSTEMS RESEARCH

1 grant totalling \$14,000.

MATERNAL CARDIOVASCULAR HEALTH: UNDERSTANDING PERCEPTIONS OF RISK AND IMPROVING POST-PARTUM FOLLOW-UP

Dr. Christina Mau Nowik (resident), Dr. Graeme N. Smith (supervisor), Queen's University

The term "pregnancy-related cardiovascular risk indicators" encompasses preeclampsia, gestational hypertension, gestational diabetes, gestational impaired glucose tolerance, placental abruption, intrauterine growth restriction, and preterm birth. These conditions are associated with an increased risk of developing cardiovascular disease. At Kingston General Hospital, women who develop these complications are referred to the Maternal Health Clinic (MHC), which offers post-partum cardiovascular risk screening and counselling.

The investigators will survey patients to examine how they perceive their risk for cardiovascular disease at three points: 1) at the first antenatal appointment; 2) immediately prior to the medical assessment in the MHC; 3) six weeks after patients receive their final counselling through the MHC. If patients rate their risk more accurately and also perceive themselves to be at higher risk after their MHC appointment than either during pregnancy or prior to the MHC assessment, this would suggest that the MHC is successful in improving patients' understanding of cardiovascular disease risk.

The researchers will also hold focus groups with primary care providers to examine how the MHC can facilitate better continuity of care. Finally, the investigators will survey patients who do not attend the MHC to identify barriers to accessing follow-up.

RESEARCH BY COMMUNITY PHYSICIANS

1 grant totalling \$5,500.

ARE LOWER DOSES OF CYPROTERONE ACETATE EFFECTIVE IN THE HORMONAL TREATMENT OF TRANSGENDER FEMALES?

Dr. Raymond Fung, Toronto East General Hospital

MEDICAL EDUCATION RESEARCH

2 grants totalling \$253,000.

CONSOLIDATING TOOLS FOR OUTCOMES IN RESUSCITATION (CONTOUR)

Dr. M. Dylan Bould (new investigator), The Ottawa Hospital

Although there are consensus guidelines to manage pediatric cardiac arrest, real world team performance often deviates from these guidelines due to poor teamwork, resulting in poor outcomes. A novel promising solution for successful management of crisis scenarios is called the Cognitive Aids for Role Definition (CARD) system. CARD is a new teamwork-based “cognitive aid” that uses role identification cards worn by each team member to decrease team members’ mental workload, clarify roles and tasks, reducing redundancy and task overload.

This study aims to integrate the CARD system with existing knowledge-based cognitive aids or “cheat sheets” to improve adherence to guidelines, and therefore improve outcomes in pediatric cardiac arrest care. This is a simulation-based, randomized controlled, factorial multicenter study. Subjects (physicians, nurses, respiratory therapists) will form 76 teams. All subjects will undertake a pre-test scenario, without access to either cognitive aid and then will be randomized to one of four study arms (control, knowledge-aid, CARD, integrated). After an e-Learning session on crisis resource management all subjects will undertake a post-test simulation scenario with access to the same cognitive aids used in training. Sessions will be video recorded and team performance will be measured by adherence to Pediatric Advanced Life Support guidelines.

PHYSICIANS’ LIVED EXPERIENCE OF END OF LIFE DISCUSSIONS DURING ACUTE HOSPITALIZATIONS: A PHENOMENOLOGICAL STUDY

Dr. Doaa El Rouby (resident), Dr. Dominique Piquette (supervisor), Sunnybrook Health Sciences Centre

Good communication among physicians, patients and family members can facilitate the development of comprehensive and sound care plans that are concordant with patient’s wishes and values. Health care providers identify many barriers preventing them from engaging in end of life discussions. In addition, medical trainees feel generally underprepared for initiating these discussions.

This qualitative study aims at exploring the lived experience of physicians involved in end of life discussions during patient acute hospitalization. The investigators will also explore the relationships between the cumulative clinical and life events encountered by physicians and their experience of end of life discussions. This study is based on a hermeneutic phenomenological methodology. The researchers will use in-depth, semi-structured individual interviews as the data collection strategy. The participants will include internal medicine physicians with various experience levels (junior and senior residents, and attending physicians) who have been involved in end of life discussions.

The qualitative analysis will be focused on describing end of life discussions from the perspective of the physicians, in order to understand this process as it is understood by those who are involved in it. These findings will inform future educational interventions aimed at helping medical trainees to feel better prepared to engage in end of life discussions.

CLINICAL RESEARCH

36 grants totalling \$3,387,500; a selection is highlighted below.

BEYOND WALKING: USING THE COMPREHENSIVE HIGH-LEVEL ACTIVITY MOBILITY PREDICTOR (CHAMP) IN LOWER EXTREMITY AMPUTEES

Dr. Alison Janelle Anton (resident), Dr. Nancy Dudek (supervisor), University of Ottawa

A traditional goal of rehabilitation for lower limb amputee prosthesis users is ambulation. Currently, clinicians measure physical mobility using tests of walking speed, walking distance, transferring, and balance. These tests only capture short-distance, level ground walking at customary walking speed. A subset of amputees exist who are physically high functioning, and capable of activities beyond just level ground walking. For these people, rehabilitation goals should include return to more advanced-level activities that will be necessary for them to fully participate in their work and recreational pursuits.

The Comprehensive High-Level Activity Mobility Predictor (CHAMP) consists of four advanced tests, and was developed and validated as a performance-based outcome measure for high-level mobility amongst male military service members less than 40 years old. This study will test the CHAMP amongst civilian amputees to determine its validity, feasibility, and utility in this population. Participants from The Ottawa Hospital Rehabilitation Centre outpatient amputee clinic will complete the 6 minute walk test, Amputee Mobility Predictor with prosthesis, CHAMP, Houghton Scale, Locomotor Capability Index, and Activity-specific Balance Confidence Scale.

Analyses will determine whether the CHAMP is valid in the civilian population, feasible in an outpatient therapy setting, and useful in providing more information than standard mobility measures.

DEVELOPMENT OF HUMAN ENGINEERED CARTILAGE SUITABLE FOR JOINT RESURFACING

Dr. Davide Bardana, Dr. Stephen Waldman, Queen's University

Damage to articular cartilage by osteoarthritis or injury causes significant morbidity as this tissue has little reparative potential. While tissue engineered cartilage offers the prospect of joint resurfacing, there are several barriers to the clinical translation as only a limited number of cells can be obtained from an individual. To address this shortcoming, the investigators have developed a novel approach to create large-sized engineered cartilage constructs directly from a small population of cells. Previous pre-clinical studies have demonstrated excellent defect repair and near indistinguishable integration to the surrounding native tissue and underlying subchondral bone. To further the development of this approach and lay the foundation for potential future clinical trials, translation to human cartilage needs to be demonstrated.

The objective of the proposed study is to develop large-sized, functional human engineered cartilage implants as well as to establish the criteria to select suitable candidates for a potential clinical procedure. Ultimately, with this new approach, patients will benefit from better clinical outcomes resulting in a lower risk of implant failure and shorter hospitalization. We expect that our methods will allow for the correction of degenerative changes due to osteoarthritis, and potentially to delay or eliminate the need for joint replacement surgery.

CONTINUOUS WAVEFORM ANALYSIS TO IMPROVE PREDICTION OF TIME TO DEATH AFTER WITHDRAWAL OF LIFE SUSTAINING THERAPY IN CRITICALLY ILL PATIENTS

Dr. Sonny Dhanani, Dr. Andrew Seely, Children's Hospital of Eastern Ontario

Organ donation after circulatory death (DCD), first implemented in 2006, now provides almost 25% of all organs transplanted in Ontario. Because warm ischemia beyond a certain time point irreversibly damages organs and precludes donation, an accurate prediction of time to death after withdrawal of life sustaining therapy (WLST) is essential to identify appropriate DCD candidates and improve practice. Many tools have been developed for this purpose but all have significant limitations.

The principal objective of this multicenter, observational study is to use variability analysis to create a clinical decision tool to accurately and reliably predict which patients will die within 2 hours of the withdrawal of life-sustaining therapies (WLST). The investigators plan to employ continuous physiological waveform monitoring, and use advanced analytics of patterns of variation (variability analysis) on patients enrolled in the Death Prediction and Physiology after Removal of Therapy (DePPaRT) study in order to uncover the changes in physiologic state during the dying process.

This knowledge will be used to better predict whether death is likely to occur within the 2 hour time limit required for DCD. A systematic approach to organ donation research is fundamental to improving organ donation in Ontario.

MRI FOR DIAGNOSIS OF EQUIVOCAL INITIAL ULTRASOUNDS IN SUSPECTED PEDIATRIC APPENDICITIS: “ULTRASOUND FIRST, MRI SECOND APPROACH”

Dr. Andrea S. Doria, Dr. Suzanne Schuh, Hospital for Sick Children

Diagnosing pediatric acute appendicitis remains challenging. Children with suspected appendicitis are typically assessed by ultrasound (US) and/or computed tomography (CT). CT is more accurate than US, but exposes children to harmful radiation. A problem with US is the fact that many children with suspected appendicitis have equivocal initial USs, and a second US may require a long interval in order to achieve helpful results, thus increasing patient hospital stay and management costs.

MRI is a radiation-free imaging modality with a diagnostic accuracy similar or higher than CT which can be performed immediately after an equivocal initial US, and holds potential for being more efficacious than other modalities for diagnosing appendicitis. In this study the investigators will (1) assess whether a clinical-ultra-fast MRI pathway is “successfully diagnostic” (at least as accurate as a clinical-second US pathway) in children with clinically suspected appendicitis following an equivocal initial US; and (2) conduct a cost-effectiveness analysis between a clinical-ultra-fast MRI pathway and a clinical-second US pathway.

The proposed clinical-ultra-fast MRI approach may optimize clinical-imaging management of pediatric appendicitis by avoiding radiation risks and minimizing the delay for a final diagnosis and patient disposition, thus fine tuning the utilization of financial resources of our health care system.

NON-INVASIVE GENOMIC ANALYSIS OF HUMAN ENDOMETRIAL RECEPTIVITY IN WOMEN WITH POLYCYSTIC OVARIAN SYNDROME

Dr. Jason Elliott (resident), Dr. Ellen Greenblatt (supervisor), Mount Sinai Hospital

Successful implantation of an embryo into the uterus to lead to a healthy pregnancy requires a complex interplay of both embryonic and uterine factors. Polycystic ovarian syndrome (PCOS) is a common metabolic/hormonal disorder with negative impacts on fertility, manifested through irregular ovulation and other mechanisms. The investigators believe that PCOS has a negative influence on the lining of the uterus (endometrium), affecting its “receptivity” to an embryo, thus lowering fertility.

The aim of this study is to use a minimally invasive uterine fluid aspiration approach to sample endometrial fluid at multiple time points in the menstrual cycle of women with PCOS and perform RNA microarray analysis on the samples to determine the change in endometrial gene expression at the different time points. Women with PCOS who are obese and non-obese are both included to differentiate the individual effects of obesity and PCOS on endometrial receptivity.

Comparison to historical results for non-obese women without PCOS allows confirmation that gene expression differences might explain the lower fertility in women with PCOS. This could lead to development of targeted genes or gene products for analysis of endometrial receptivity, which is useful in optimizing fertility treatment selection and timing, to maximize success and minimize cost.

ELUCIDATING THE HEALTH CARE UTILIZATION OF PEOPLE WHO EXPERIENCE DETENTION OR INCARCERATION IN PROVINCIAL FACILITIES IN ONTARIO: A POPULATION-BASED STUDY

Dr. Fiona G. Kouyoumdjian, Dr. Stephen W. Hwang, St. Michael's Hospital

A large number of Canadians experience detention or incarceration each year, and data suggest that this population has poor health. Little is known about health care access and utilization in this population. This information could inform interventions in custody and at the time of release to optimize health and decrease unnecessary health care costs.

In this study, the researchers will link data from the Ontario Ministry of Community Safety and Correctional Services on persons who were in provincial custody in 2010 with data on ambulatory care use, emergency department use, and hospitalization. The investigators will determine health care utilization rates for this population and compare them with rates for the general population. The data will be used to develop evidence-based interventions to optimize health care utilization and to target conditions that are responsible for a large proportion of health care utilization and are preventable.

CLEAR SIGHT: A RANDOMIZED TRIAL OF NON-MYDRIATIC ULTRA-WIDEFIELD RETINAL IMAGING TO SCREEN FOR DIABETIC EYE DISEASE

Dr. Selina Laura Liu (new investigator), Western University

Diabetic eye disease causes major vision loss in many Canadians and is costly. There are effective preventions and treatments for diabetic eye disease but they strongly depend upon regular screening in asymptomatic patients. The 2013 Canadian Diabetes Association (CDA) guidelines recommend annual screening by eye care professionals, either in-person or through interpretation of dilated pupil retinal photographs.

Despite the benefits of screening, adherence to these guidelines is poor. Reasons include patient barriers, i.e. need for eye drops, time off work, wait times, and transportation issues. An option to minimize these barriers is to screen using a camera called non-mydriatic ultra-widefield (UWF) retinal imaging. This can be quickly done without eye drops on the same day as patients' regularly scheduled diabetes clinic visits.

In this study, the investigators will compare the UWF camera to the usual screening approach recommended by the CDA. 740 patients with diabetes due for eye screening will be invited to either be screened using the UWF camera on the day of their diabetes clinic visit or be screened by their usual eye care professional. It is predicted that same-day screening with UWF imaging will find more patients with diabetic eye disease who need treatment compared to usual screening.

IMMUNOLOGICAL IMPACT OF CARBON MONOXIDE RELEASING MOLECULE IN RENAL TRANSPLANTATION

Dr. Patrick P.W. Luke, Dr. Rabindra Bhattacharjee, Western University

Kidney disease strikes 2.6 million Canadians with an average of 16 people per day experiencing kidney failure. Despite improvements in immunosuppressive therapy, the long-term survival of kidney transplants has not increased over the past decade. With limited survival, the new kidney's lifetime is mostly dependent upon damages as a result of the transplant process and immune-related injury.

In animal models, carbon monoxide (CO) inhalation has been shown to protect organs by decreasing inflammation and preventing cell death during the transplantation process; however carbon monoxide inhalation is difficult to regulate and may lead to serious consequences to patients by preventing oxygen delivery to vital organs. Recently several agents called carbon monoxide-releasing molecules or CORMs have been synthesized which can effectively and efficiently deliver CO without risk of oxygen deprivation. The investigators have shown that these agents, like CO, improve kidney transplant function and survival when given to the kidney donor or when added directly to the kidney storage solution.

Our goal is to optimize kidney transplant protection after the transplant as well by investigating the mechanism and function of CORMs. The researchers believe that this will lead to reduction of toxic immunosuppressive drug use and minimization of transplant damage leading to improvement in the long-term survival of kidney transplants.

PROBIOTICS FOR THE PREVENTION OF ANTIBIOTIC-INDUCED DIARRHEA IN HOSPITALIZED CHILDREN (PAID)

Dr. Sanjay Mahant, Dr. Bradley Johnston, Hospital for Sick Children

Antibiotic-associated diarrhea (AAD) occurs when antibiotics disturb the natural balance of “good” and “bad” bacteria in the intestinal tract (gut). It is thought that this disruption of the intestinal tract is associated with a weakened gut barrier (diminished bacterial milieu) and that “bad” bacteria may multiply beyond their normal numbers. The typical symptoms of AAD include frequent loose or watery bowel movements. Probiotics are found in dietary supplements or yogurts and contain potentially beneficial bacteria. Probiotics may restore the natural balance of bacteria in the intestinal tract.

In North America, one of the most common reasons for hospitalization in previously healthy children is for treatment of infections with antibiotics. This study will determine if, in previously healthy children hospitalized and prescribed antibiotics, the co-administration of a probiotic milk product containing good bacteria, is safe and effective for reducing AAD, as compared to a placebo (identical appearing milk product). This will be a two-centered, randomized, masked (blinding of investigators, participants, caregivers, outcome assessors, data analysts) placebo-controlled clinical trial.

The results of this study will help inform clinicians and families on the use of probiotics in the prevention of AAD, a common side effect of antibiotic use among hospitalized children.

RISK OF PARKINSONISM AFTER APPENDECTOMY

Dr. Connie Marras, Dr. Anthony Lang, University Health Network

Aggregation of the protein alpha-synuclein in the brain is the pathological hallmark of Parkinson’s disease (PD) and a toxic form of alpha-synuclein may play a critical role in the neurodegenerative process. A leading hypothesis of the development of PD is that abnormal alpha-synuclein may spread to the brain from elsewhere in the body, possibly the nervous system of the bowel. Very early involvement of the nerves of the bowel is suggested by the high incidence of constipation that commonly predates the development of overt motor symptoms of PD (e.g., tremor).

A recent study showed that in healthy individuals the appendix contains the highest concentration of alpha-synuclein in the bowel. This observation raises the strong possibility that the appendix may be a site of entry of alpha-synuclein to the brain through the nervous system of the bowel. If this were to be the case, removal of the appendix (appendectomy) could be a protective procedure against future development of PD.

Using Ontario Health Administrative data the investigators will test this hypothesis by comparing the risk of Parkinsonism in individuals having undergone prior appendectomy to the risk of Parkinsonism in the general population and individuals having undergone gall bladder removal.

THE ASSOCIATION BETWEEN BURN INJURY AND MENTAL HEALTH: A POPULATION-BASED ANALYSIS

Dr. Stephanie Mason (resident), Dr. Avery Nathens (supervisor), Sunnybrook Health Sciences Centre

Burn injured patients experience high rates of mental illness following their injury, and the prevalence of pre-morbid mental illness among burn patients is also high. This might negatively affect a patient’s recovery and quality of life after injury.

Through this population-based analysis, the association between mental illness and burn injury will be characterized. The rates of mood disorders, anxiety disorders and substance abuse will be estimated before and after injury, and risk factors for post-injury mental illness will be identified. In addition, the investigators will characterize the rate and risk factors of posttraumatic stress disorder among burn-injured patients. Mental illness is associated with high levels of health care utilization. In order to facilitate future resource planning and allocation, the health care utilization attributable to mental illness after burn injury will be estimated.

Overall, this work will inform the design and implementation of interventions aimed at mitigating the impact of mental illness on burn survivors. Improved diagnosis and treatment of mental illness will ultimately lead to improvements in the long-term outcomes of burn-injured patients.

PROSPECTIVE ABUSE AND INTIMATE PARTNER VIOLENCE SURGICAL EVALUATION (PRAISE-2): AN ONTARIO-BASED MULTI-CENTRE PROSPECTIVE COHORT STUDY

Dr. Brad A. Petrisor, Dr. Sheila Sprague, McMaster University

Every six days a woman in Canada is killed by her intimate partner. Intimate partner violence (IPV), also known as domestic abuse, is a leading cause of non-fatal injury in women worldwide. The cost of IPV in Canada is estimated at \$5 billion annually. This research team recently completed a large, cross-sectional study of 2945 women (PRAISE) identifying 1 in 6 women attending surgical fracture clinics as self-reporting a history of IPV in the past year (Lancet, 2013). Given the high prevalence and costs associated with IPV, there is a need to identify health outcomes associated with IPV, the incidence of new and worsening cases of IPV, and resource use among IPV victims.

Building upon the success of PRAISE and the importance of collecting follow up outcomes on injured women, the investigators propose to conduct a prospective cohort study of 100 women with musculoskeletal injuries to assess differences in injury related outcomes (time to fracture healing, injury-related complications, and return to pre-injury function) between abused and non-abused women. This study will also determine whether a musculoskeletal injury can lead to new or worsening abuse by an intimate partner and how patterns of IPV change over time following musculoskeletal injuries. The researchers will also examine changes and differences in quality of life and utilization of support services and associated costs between abused and non-abused women. Finally, the proposed study will also inform the feasibility of a larger multinational cohort study. The results from this Ontario cohort will be targeted for publication in a high impact journal.

OPTIMIZING PRESCRIBING OF CHOLINESTERASE INHIBITORS FOR OLDER WOMEN AND MEN WITH DEMENTIA

Dr. Paula Rochon, Women's College Hospital

Cholinesterase inhibitor therapy is used to manage the symptoms of dementia, a devastating condition that affects 500,000 Canadians and more than 35 million people globally. Cholinesterase inhibitor therapy is approved in Canada and widely used, despite an understanding that it provides only modest benefits. Recent evidence suggests that the side effects associated with these medications may be under recognized.

This proposed study is critical and timely, given the profound impact of dementia on patients and their families in Canada and around the world. This study will explore the side effects associated with cholinesterase inhibitor therapy use in older women and men with different levels of dementia severity in Ontario. The study is comprehensive in that the investigators explore the spectrum of side effects ranging from signs and symptoms to serious events, and are able to explore the benefit and potential harm of cholinesterase inhibitor discontinuation.

The findings will inform safer and more tailored prescribing of cholinesterase inhibitor therapies for the millions of older adults across Canada and internationally, mostly women, who are prescribed these therapies on a daily basis.

A NOVEL RISK STRATIFICATION SCORE FOR READMISSION AFTER DISCHARGE FROM CARDIAC SURGERY

Dr. Derrick Y. Tam (resident), Dr. Stephen E. Fremes (supervisor), Sunnybrook Health Sciences Centre

6 - 18% of patients discharged from home from their cardiac surgery procedure find themselves back in the hospital within 30 days. Readmission to the hospital is expensive and is associated with worse outcomes compared to patients that were not readmitted.

The first objective of this study is to determine the risk factors associated with readmission to hospital after cardiac surgery procedures performed in Ontario. The second objective is to create a risk-scoring tool to predict which patients are likely to be readmitted to hospital after discharge from surgery. Using administrative databases, all patients that underwent cardiac surgery procedures between 1996 and 2014 in Ontario will be identified. Those that were readmitted to hospital after discharge will be compared to those that were not readmitted. Risk factors for readmission will be identified and will be used to create a clinical scoring tool to categorize patients into low, medium and high risk for readmission after discharge.

The development of a risk scoring tool will allow us to target high-risk patients with more aggressive interventions in order to prevent readmission to hospital in hopes of improving patient outcomes, improving healthcare efficiency and reducing overall costs to the healthcare system.

A DARK ROOM: DOCUMENTARY FILM BASED EDUCATION ON THE PSYCHIATRIC EFFECTS OF HOCKEY CONCUSSION

Dr. Ryan Andrew Todd (resident), Dr. Michael Cusimano (supervisor), St. Michael's Hospital

The primary objective of this knowledge translation project is to create an educational documentary that uses culturally salient, evidence-based themes to share knowledge about psychiatric illness as it relates to ice hockey concussion. Ice hockey has the highest rate of concussion in both high school and professional level athletes compared to all other sports (Koh 2001) and every year in Canada, there are over 500,000 individuals under the age of 18 engaged in this sport (IIHF, 2014). Concussion has been consistently linked to Major Depressive Disorder, Generalized Anxiety disorder, and suicide (Busch 1998; Rimel et. Al 1981, Schoenhuber 1998). The combination of these factors creates a dangerous health complex that requires extensive improvements in educating the population, raising awareness and changing behaviors.

There will be three phases to this knowledge translation project. Phase one will consist of the qualitative analysis of semi-structured interviews with ice hockey stakeholders such as coaches, players, trainers, and hockey parents. Phase two will focus on the creation and distribution of the educational documentary called "A Dark Room." Phase three of this project will be the evaluation of the film utilizing pre and post film standardized questionnaires. Providing an educational platform for twenty thousand students who are at high risk for concussion, and their peers, will serve to prevent many concussions and help those who do suffer a concussion to seek help.

AN ANALYSIS OF THE FUNCTIONAL BENEFIT, NARCOTIC USE AND TIME TO DISCHARGE READINESS FOLLOWING THE IMPLEMENTATION OF A COMPREHENSIVE PAIN MANAGEMENT PROTOCOL FOR PRIMARY TOTAL KNEE ARTHROPLASTY

Dr. Kim Wong, Dr. Kevan Saidi, Northern Ontario School of Medicine

A single-centre, prospective, double blind randomized control trial in 220 patients using combinations of intrathecal opioid (IO), femoral nerve block (FB) and periarticular infiltration (PI) for total knee arthroplasty will be conducted to determine the ideal anesthetic combination for safe early discharge. Secondary outcomes will look at function (Timed Up and Go walking distance, range of motion, ability to transfer); pain control (patient reported, total opioid consumption); complications (postoperative nausea, vomiting, pruritis); and patient satisfaction.

Patients will receive all three interventions and be block randomized to one of five anesthetic groups: all three (PI + FB + IO); a combination of two (FB + IO, PI + IO, PI + FB); or IO. Normal saline will be substituted for anesthetics for blinding. Statistical analysis using MANOVA and regression analysis will be completed to determine significant differences between groups.

It is expected that the combination of three anesthetics (PI, FB, IO) will result in additive pain control effect, minimize side effects and optimize patient recovery, and lead to early discharge. Hopefully, the results will not only have a direct benefit to patients but also an indirect cost benefit to the health care system.

NOVEL NONINVASIVE ASSESSMENT OF KIDNEY TRANSPLANT FIBROSIS WITH MAGNETIC RESONANCE ELASTOGRAPHY

Dr. Darren Yuen (new investigator), Dr. Anish Kirpalani, St. Michael's Hospital

Kidney transplantation has greatly improved the quality of life and survival of people living with kidney failure. Unfortunately, up to 60% of these people go on to have failure of their transplant within 10 years, in many cases requiring drugs and/or return to dialysis. This is a devastating outcome. The cause for transplant failure is almost always, at least in part, due to scarring of the transplanted kidney.

There is currently no good test to detect this scarring. The best test available is a needle biopsy, which is associated not only with significant bleeding risks but also an inability to sample and analyze the entire kidney. A new type of MRI called "MR elastography" has been proven to accurately measure scarring in the liver, but not yet in the kidney. It does not need any injections, can be done in 30 minutes, and may be able to measure scar throughout the entire kidney without needles.

This project aims to compare this new MRI test with needle biopsy. We will determine if it can measure scar in the transplanted kidneys of people with both normal and abnormal transplant function. This could drastically change how a doctor treats transplant failure.

2015 OVERVIEW

- Original investment by the doctors of Ontario: \$16.7 million in 1970
- Market value of assets as of December 31, 2015: \$98.1 million before accruing future grant commitments (2014 (restated) \$99.2 million)
- Decrease in value of assets over prior year \$1.1 million (2014 \$5.7 million increase)
- Rate of return on investments approximately 1% consisting of 2.9% from dividends and interest minus a 1.9% decline in the market value of investments (2014 12.0%)
- Grants approved in 2015 \$4.12 million before refunds and withdrawals (2014 \$4.3 million)
- Total grants paid since inception \$126.3 million
- Future grant commitments at 2015 year end: \$4.6 million, with \$3.4 million payable in 2016 and \$1.2 million payable in 2017 (2014 - \$5.2 million, with \$3.6 million payable in 2015 and \$1.6 million payable in 2016)
- Operating costs including investment management fees: \$1.3 million (2014 - \$1.5 million)
- Operating costs as a percentage of assets under management: 1.4% (2014 – 1.6%)
- Asset allocation at year end:

	<u>2015</u>	<u>2014</u>
Canadian bonds	9.7%	3%
Canadian equities	42.9	48
U.S. equities and		
International equities	45.7	41
Cash	1.7	8
	<u>100%</u>	<u>100%</u>

2015 IN DETAIL

It is my pleasure to present the PSI Foundation financial results for the year ended December 31, 2015. We have continued with our portfolio heavily weighted toward equities. The Finance Committee is watching this carefully. Even in the year of poor markets, our portfolio only dropped 1.9%. The Canadian market was not kind to investors in 2015, with the benchmark TSX Composite dropping over 8%. Both our Canadian managers beat the benchmark, both still had negative returns. The US benchmark showed little movement in 2015, but the strength of the US dollar against the CDN dollar aided our results. We continue to monitor the fixed income market and plan to move to a more conservative asset allocation when the risk to reward ratio of fixed income securities returns to “normal” levels. This “norm” level, we believe, to be many years into the future. The current risk level in the fixed income market is not worth the reward. Much of our portfolio is focused on blue chip securities paying strong dividends. The average yield of our portfolio is about 3%, far in excess of the return on 5 to 10 year Government of Canada bonds.

I cannot offer any advice as to market movement in the next 12 months. It tends to be affected by unpredictable world events and politics out of our control.

During 2014, the Foundation acquired an office condo at Sheppard and Yonge, in Toronto. After the appropriate improvements, we moved in during the summer of 2015. Our Executive Director, Sam Moore did an excellent job coordinating this move right after last year’s annual general meeting of our House of Delegates.

We have been disappointed with the returns of our US equity manager, Neuberger Berman, over the past few years. This fall we changed our US portfolio from actively managed to a passive investment approach. We have purchased the US dollar Vanguard S&P 500 Exchange Traded Fund in US equities. In addition to giving us an investment which will closely match the market index, we will also save over \$400,000 in investment fees over a full year. This is the primary reason for the drop in our 2015 operating costs as a percentage of assets.

We have benefitted over the past two years by the weakness in the CDN dollar compared to the US dollar. As it is not possible to predict exchange rate movements, we will draw our required funds against this account in the short term to benefit from this favourable exchange rate.

We have budgeted for \$4.6 million in grants approvals for 2016, up from the \$4.5 figure budgeted for 2015. We have tried to set an annual grants figure which will be sustainable for the Foundation in the future. The 2016 budgeted figure is based on our budgeted income plus a 3% return on our portfolio. Any return in excess of the 3%, we add to our capital base. The Finance Committee has also indicated to the Grants Committee, they could request further funding if they feel the need, based on the applications reviewed.

I would like to take this opportunity to thank the members of the Finance Committee for their assistance this past year – Dr. Jim King, Dr. Andrew Baker, Dr. Robert McMurtry, Paul Richardson, John Eby, Jim McGill and Giselle Bodkin.

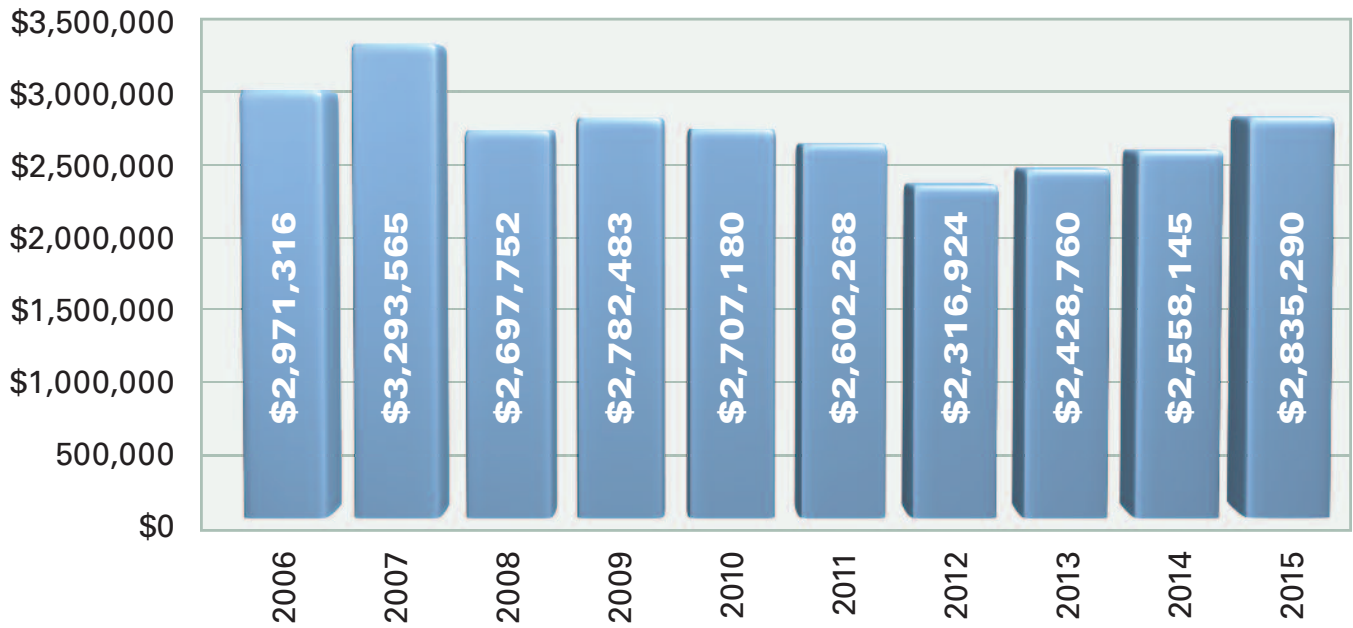
PSI FOUNDATION

FINANCIAL SUMMARY

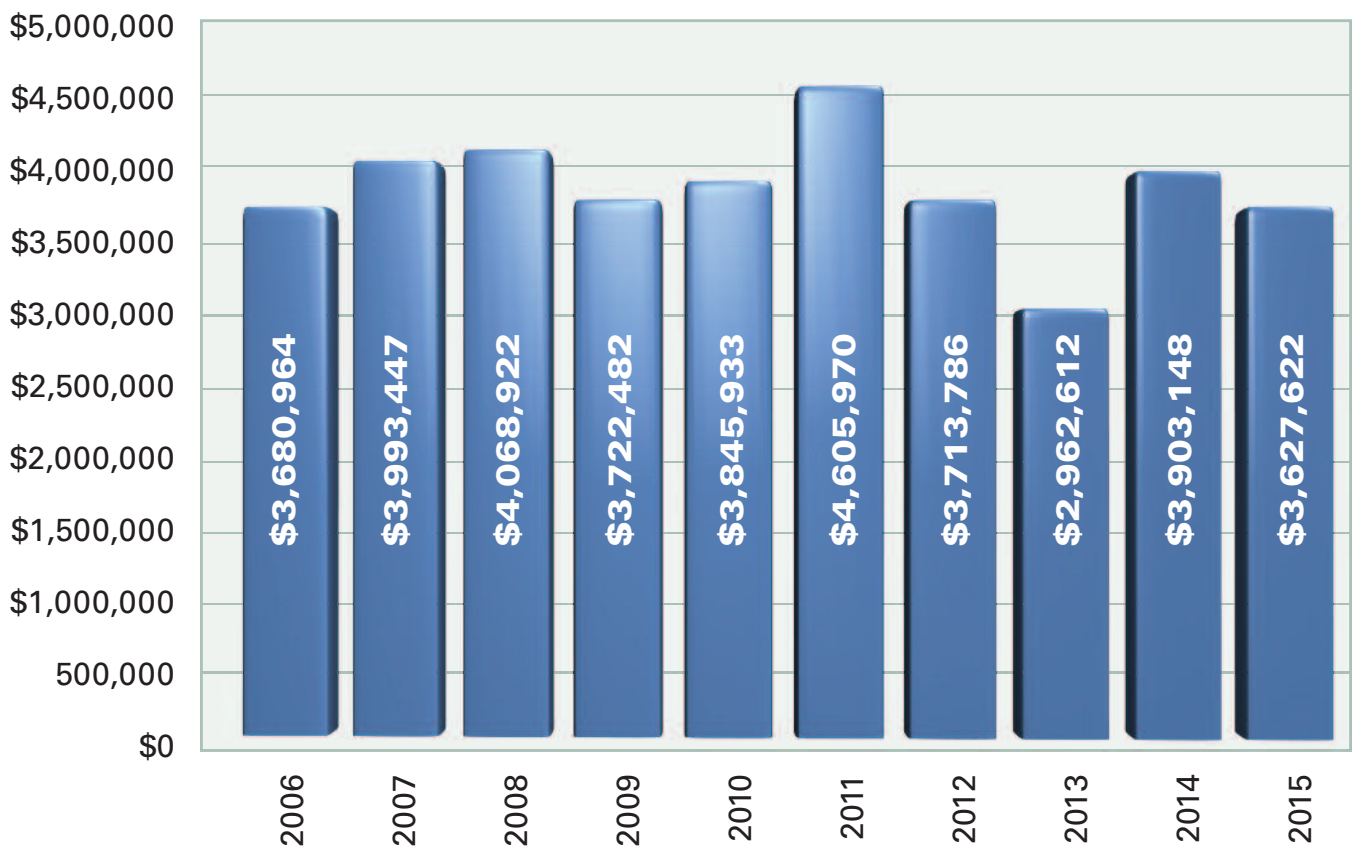
1970 - 2015

Donated Capital		\$ 16,693,123
Plus Capital appreciation	\$ 111,423,220	
Revenue earned	121,535,820	232,959,040
		<hr/> 249,652,163
Less: Charitable contributions	\$ 126,274,739	
Pension adjustment	356,903	
Investment & administrative expense	31,204,189	157,835,831
		<hr/> 91,816,332
Net assets, December 31, 2015		91,816,322
Net assets, December 31, 2014		93,873,652
Pension adjustment December, 2015		14,600
Increase/(Decrease) for year		<hr/> (2,071,930) <hr/>
Consisting of:		
Deficit for year		(2,236,981)
Capital appreciation on investments		165,051
		<hr/> (2,071,930) <hr/>

REVENUE 2006 - 2015



GRANTS PAID 2006 - 2015





INDEPENDENT AUDITORS' REPORT

To the House of Delegates of The Physicians' Services Incorporated Foundation

We have audited the accompanying financial statements of The Physicians' Services Incorporated Foundation which comprise the statement of financial position as at December 31, 2015, the statements of operations, changes in net assets and cash flows for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform an audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the institute's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of The Physicians' Services Incorporated Foundation as at December 31, 2015, and its results of operations and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations.

A handwritten signature in black ink that reads "KPMG LLP". The signature is written in a cursive, flowing style. Below the signature is a horizontal line that starts under the "K" and ends under the "P", with a small upward tick at the end.

Chartered Professional Accountants, Licensed Public Accountants

Toronto, Canada

March 2, 2016

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Statement of Financial Position

December 31, 2015, with comparative information for 2014

	2015	2014
Assets		
Cash and cash equivalents (note 2)	\$ 3,997,514	\$ 8,276,950
Bonds and debentures (note 3)	9,149,251	2,937,957
Shares (note 3)	83,536,054	86,847,972
Dividends and interest receivable	186,933	189,524
Harmonized sales tax receivable	132,273	39,746
Capital assets (note 4)	1,101,339	871,685
	\$ 98,103,364	\$ 99,163,834
Liabilities and Net Assets		
Liabilities:		
Accounts payable and accrued liabilities	\$ 91,761	\$ 74,882
Securities sold short (note 5)	834,428	—
Grants payable (note 7)	5,360,853	5,215,300
	6,287,042	5,290,182
Net assets:		
Invested in capital assets	1,101,339	871,685
Internally restricted capital (note 8)	90,714,983	93,001,967
	91,816,322	93,873,652
Lease commitments (note 9)		
	\$ 98,103,364	\$ 99,163,834

See accompanying notes to financial statements.

On behalf of the Board:

_____ Director

_____ Director

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Statement of Operations

Year ended December 31, 2015, with comparative information for 2014

	2015	2014
Revenue:		
Interest on bonds and debentures	\$ 266,476	\$ 210,529
Dividends	2,568,814	2,347,616
	2,835,290	2,558,145
Less investment management fees	522,693	722,540
	2,312,597	1,835,605
Expenses:		
Administrative:		
Salaries and benefits	359,208	426,127
Office supplies	105,250	78,295
Board and committee	138,418	132,814
Rent and maintenance	57,271	74,164
Safekeeping charges	48,329	48,978
Amortization of capital assets	29,079	1,686
Legal and audit fees	18,215	19,600
Delegate and annual meeting	17,633	19,189
Information services and annual report	3,000	3,000
	776,403	803,853
Grants	3,773,175	4,091,648
	4,549,578	4,895,501
Excess of expenses over revenue before the undernoted	(2,236,981)	(3,059,896)
Other income:		
Realized gain on sale of investments	19,369,987	6,433,414
Unrealized gain (loss) on investments	(19,204,936)	2,099,586
	165,051	8,533,000
Excess (deficiency) of revenue over expenses	\$ (2,071,930)	\$ 5,473,104

See accompanying notes to financial statements.

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Statement of Changes in Net Assets

Year ended December 31, 2015, with comparative information for 2014

				2015	2014
	Invested in capital assets	Internally restricted capital	Unrestricted	Total	Total
Balance, beginning of year	\$ 871,685	\$ 93,001,967	\$ —	\$ 93,873,652	\$ 88,395,048
Excess (deficiency) of revenue over expenses	(29,079)	—	(2,042,851)	(2,071,930)	5,473,104
Investment in capital assets	258,733	(258,733)	—	—	—
Remeasurement and other items	—	—	14,600	14,600	5,500
Internally restricted capital (note 8)	—	(2,028,251)	2,028,251	—	—
Balance, end of year	\$ 1,101,339	\$ 90,714,983	\$ —	\$ 91,816,322	\$ 93,873,652

See accompanying notes to financial statements.

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Statement of Cash Flows

Year ended December 31, 2015, with comparative information for 2014

	2015	2014
Cash provided by (used in):		
Operating activities:		
Cash received from:		
Investment income	\$ 3,228,196	\$ 2,622,308
Grant refunds	116,378	174,796
Harmonized sales tax received	39,746	35,290
Donations	—	21,582
	3,384,320	2,853,976
Cash applied to:		
Administrative expenses	1,181,253	1,535,776
Grants paid	3,744,000	4,077,944
Purchase of capital assets	258,733	871,685
Harmonized sales tax paid	189,562	—
Pension contributions	—	38,600
	5,373,548	6,524,005
	(1,989,228)	(3,670,029)
Investing activities:		
Cash received from proceeds of investments:		
Bonds and debentures	22,020,318	3,812,682
Magna Vista Investment Management Equities	2,341,251	3,646,395
Connor, Clark & Lunn Investment Management Ltd. Equities	15,534,426	13,226,892
Vanguard Investments Canada Inc.	696,350	—
Scotia iTrade Equities	—	1,973,629
Neuberger Berman, LLC	46,248,340	9,530,135
Interactive Brokers	818,806	—
	87,659,491	32,189,733
Cash applied to purchase of investments:		
Bonds and debentures	28,384,500	1,856,648
Magna Vista Investment Management Equities	796,727	2,978,175
Connor, Clark & Lunn Investment Management Ltd. Equities	14,426,030	12,762,837
Vanguard Investments Canada Inc.	42,193,094	—
Scotia iTrade Equities	—	558,076
Neuberger Berman, LLC	4,141,648	6,916,060
Vanguard Investments Canada Inc.	7,700	—
	89,949,699	25,071,796
	(2,290,208)	7,117,937
Increase (decrease) in cash and cash equivalents	(4,279,436)	3,447,908
Cash and cash equivalents, beginning of year	8,276,950	4,829,042
Cash and cash equivalents, end of year	\$ 3,997,514	\$ 8,276,950
Cash and cash equivalents on hand represented by:		
Canadian dollars	\$ 2,605,835	\$ 7,211,261
U.S. dollars	1,391,679	1,065,689
	\$ 3,997,514	\$ 8,276,950

See accompanying notes to financial statements.

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Notes to Financial Statements

Year ended December 31, 2015

The Physicians' Services Incorporated Foundation (the "Foundation") is incorporated without share capital under the laws of Ontario. Under the Income Tax Act (Canada), the Foundation is registered as a public foundation constituted for charitable purposes and, accordingly, is exempt from income taxes, provided certain requirements of the Income Tax Act (Canada) are met.

1. Significant accounting policies:

These financial statements have been prepared by management in accordance with Canadian accounting standards for not-for-profit organizations in Part III of the Chartered Professional Accountants of Canada Handbook.

(a) Revenue recognition:

Investment income which consists of dividends, interest, realized and unrealized gains and losses on investments is recognized on the accrual basis.

(b) Cash and cash equivalents:

Cash and cash equivalents include cash on hand and short-term investments, which are highly liquid with original maturities of less than three months.

(c) Financial instruments:

Financial instruments are recorded at fair value on initial recognition. Equity instruments that are quoted in an active market are subsequently measured at fair value. All other financial instruments are subsequently measured at cost or amortized cost, unless management has elected to carry the instruments at fair value. The Foundation has elected to carry its bonds and debentures at fair value.

Transaction costs incurred on the acquisition of financial instruments measured subsequently at fair value are expensed as incurred. All other financial instruments are adjusted by transaction costs incurred on acquisition and financing costs. These costs are amortized using the straight-line method.

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Notes to Financial Statements (continued)

Year ended December 31, 2015

1. Significant accounting policies (continued):

Financial assets are assessed for impairment on an annual basis at the end of the fiscal year if there are indicators of impairment. If there is an indicator of impairment, the Foundation determines if there is a significant adverse change in the expected amount or timing of future cash flows from the financial asset. If there is a significant adverse change in the expected cash flows, the carrying value of the financial asset is reduced to the highest of the present value of the expected cash flows, the amount that could be realized from selling the financial asset or the amount the Foundation expects to realize by exercising its right to any collateral. If events and circumstances reverse in a future period, an impairment loss will be reversed to the extent of the improvement, not exceeding the initial carrying value.

(d) Foreign currency translation:

Assets and liabilities denominated in foreign currencies have been translated into Canadian dollars at exchange rates prevailing at the year-end date. Revenue and expenses have been translated using the exchange rates prevailing on the transaction date. Gains and losses arising from these translation policies are included in the statement of operations.

(e) Capital assets:

Purchased capital assets are recorded at cost. Capital assets are amortized on a straight-line basis over the estimated useful lives as follows:

Buildings	50 years
Building improvements	10 years
Furniture and equipment	5 years
Computer equipment	2 years

(f) Employee future benefits:

The Foundation maintained a defined benefit pension plan covering its employees. The benefits from the defined benefit pension plan are based on years of service and final average salary up to October 31, 2013. In 2013, the defined benefit pension plan was closed for new entries. In addition, earnings and benefits were frozen and required contributions ceased for all members. Effective May 19, 2014, the Foundation filed for wind up of its defined benefit pension plan.

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Notes to Financial Statements (continued)

Year ended December 31, 2015

1. Significant accounting policies (continued):

On February 13, 2015, the Financial Services Commission of Ontario authorized the wind up. As at December 31, 2015, the distribution of the surplus assets has not been approved.

The Foundation now makes contributions directly to employees' retirement through payments directed at their registered retirement savings plans.

The Foundation accrues its obligations under the defined benefit plan as the employees render the services necessary to earn the pension benefits. The actuarial determination of the accrued benefit obligations for pension benefits uses the projected benefit method prorated on service (which incorporates management's best estimate of future salary levels, other costs escalation, retirement ages of employees and other actuarial factors). The most recent actuarial valuation of the pension plan was as of June 1, 2012, and a wind up valuation report was completed as at May 19, 2014.

Actuarial gains (losses) on plan assets arise from the difference between the actual return on plan assets for a period and the expected return on plan assets for that period and are immediately recognized in the statement of changes in net assets. For the purpose of calculating the expected return on plan assets, the assets are valued at fair value. Actuarial gains (losses) on the accrued benefit obligation arise from differences between actual and expected experience and from changes in the actuarial assumptions used to determine the accrued benefit obligation and are immediately recognized in the statement of changes in net assets.

Past service costs arising from plan amendments are recognized immediately in the statement of changes in net assets.

(g) Grants:

Grants are recognized in the statement of operations as an expense in the year the grant is approved by the Board of Directors.

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Notes to Financial Statements (continued)

Year ended December 31, 2015

1. Significant accounting policies (continued):

(h) Use of estimates:

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the year. Actual results could differ from those estimates.

2. Cash and cash equivalents:

Cash and cash equivalents include deposits in banks and short-term investments, which are highly liquid with original maturities of less than three months. Components of cash and cash equivalents are as follows:

	2015	2014
Cash on deposit	\$ 3,063,470	\$ 2,111,793
Beutel Goodman Cash Management Funds	22,140	5,304,506
Connor, Clark & Lunn Short-Term Investments	911,904	860,651
	\$ 3,997,514	\$ 8,276,950

3. Investments:

Investments are managed by four independent investment managers.

Nature of investments	2015	2014
Bonds and debentures:		
Beutel Goodman & Company Limited		
Canadian fixed income	\$ 9,149,251	\$ 2,937,957

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Notes to Financial Statements (continued)

Year ended December 31, 2015

3. Investments (continued):

Nature of investments		2015	2014
Shares:			
Magna Vista Investment Management	Canadian equity	\$ 18,287,331	\$ 22,179,604
Neuberger Berman, LLC	U.S. equity	–	40,151,466
Connor, Clark & Lunn Investment Management Ltd.	Canadian equity	22,126,709	24,516,902
Vanguard Investments Canada Inc.	U.S. equity	43,122,014	–
		\$ 83,536,054	\$ 86,847,972

4. Capital assets:

		2015		2014	
	Cost	Accumulated amortization	Net book value		Net book value
Buildings	\$ 903,310	\$ 8,700	\$ 894,610	\$	–
Building improvements	166,876	8,344	158,532		–
Furniture and equipment	25,876	2,588	23,288		–
Computer equipment	34,356	9,447	24,909		–
Asset under construction	–	–	–		871,685
	\$ 1,130,418	\$ 29,079	\$ 1,101,339	\$	\$ 871,685

In 2014, the Foundation purchased a commercial condominium unit in Toronto to house its head office and office staff. The Foundation occupied the unit in May 2015, at which time amortization was started.

5. Securities sold short:

The Foundation has sold short various U.S. equities in the aggregate amount of \$834,428 (2014 - nil).

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Notes to Financial Statements (continued)

Year ended December 31, 2015

6. Employee future benefits:

Effective May 19, 2014, the Foundation filed for wind up of its defined benefit pension plan and the windup liabilities for all remaining members in the plan were determined. There are no remaining active members in this plan after the wind-up date. As of February 13, 2015, the Financial Services Commission of Ontario authorized and approved the wind up of the plan.

During the year, the Foundation extinguished \$265,000 (2014 - nil) of the defined benefit obligation through settlement.

The reconciliation of the funded status of the defined benefit pension plan to the amount recorded in the financial statements is as follows:

	2015	2014
Accrued benefit obligation	\$ (597,900)	\$ (867,800)
Fair value of plan assets	681,600	1,063,200
Valuation allowance	(83,700)	(195,400)
	\$ —	\$ —

Continuity of the accrued pension asset is as follows:

	2015	2014
Balance, beginning of year	\$ —	\$ —
Benefit expense	(14,600)	(44,100)
Employer contributions	—	38,600
Remeasurements and other items	14,600	5,500
Balance, end of year	\$ —	\$ —

7. Grants payable:

Grants payable represent the balance of grants approved by the Board of Directors, which are payable over the next two years.

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Notes to Financial Statements (continued)

Year ended December 31, 2015

8. Restriction on net assets:

The Board of Directors has internally restricted the original net assets which established the Foundation as the base on which investment income would be earned annually to fund general operations and provide funds for charitable endeavours in the health field. Annually, the Board of Directors increases or decreases these internally restricted amounts depending on the level of grants awarded in the year. These internally restricted amounts are not available for other purposes without approval of the Board of Directors.

9. Lease commitments:

The Foundation has certain equipment under operating leases, which expire at various dates to June 30, 2017. Future minimum payments, by year and in aggregate, are as follows:

2016	\$ 4,979
2017	790
	<hr/>
	\$ 5,769

10. Financial risks:

The Foundation manages its investment portfolio to earn investment income. The Foundation is not involved in any hedging relationships through its operations and does not hold or use any derivative financial instruments for trading purposes.

Market price risk arises as a result of trading in equity securities and fixed income securities. Fluctuations in the market expose the Foundation to a risk of loss. The Foundation mitigates this risk through controls to monitor and limit concentration levels.

The Foundation is exposed to foreign exchange risk in its foreign investment portfolios as a result of exchange rate fluctuations and the volatility of these rates.

THE PHYSICIANS' SERVICES INCORPORATED FOUNDATION

Notes to Financial Statements (continued)

Year ended December 31, 2015

10. Financial risks (continued):

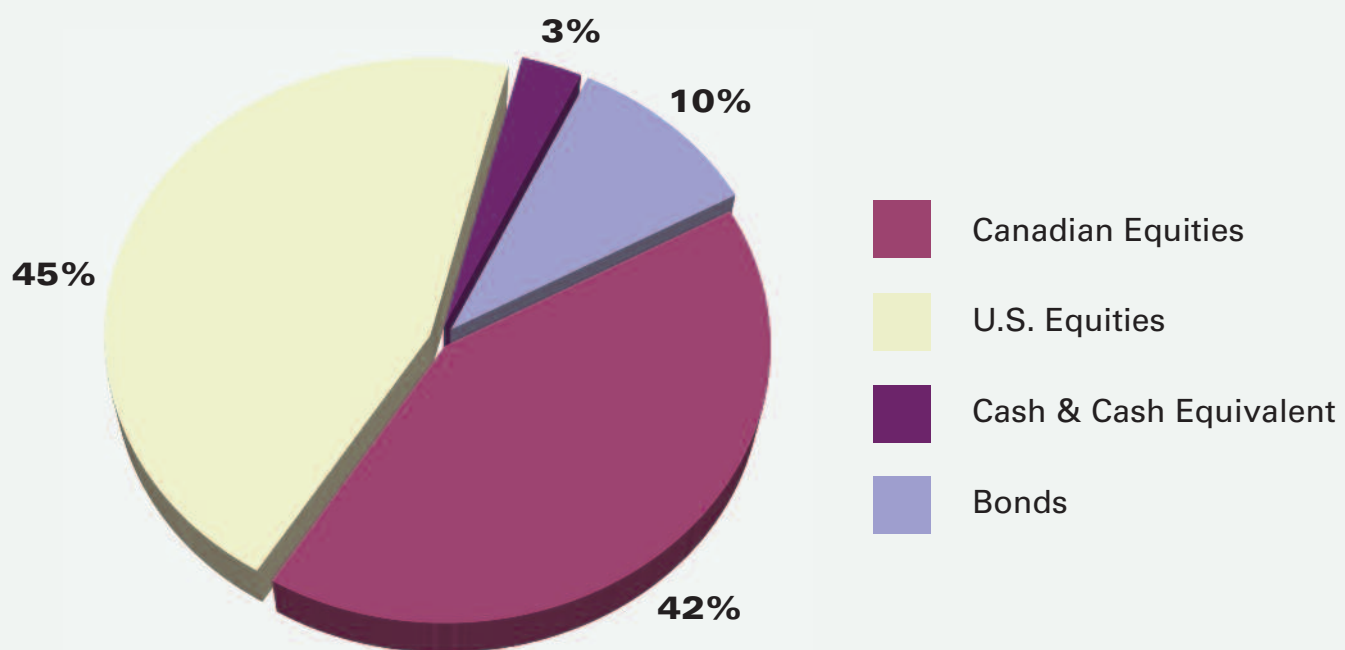
Interest rate risk arises from fluctuations in interest rates and the degree of volatility of these rates. The Foundation is exposed to interest rate risk on its bonds and debentures investments. The Foundation manages this risk by staggering the maturity dates of its investments.

The Foundation believes that it is not exposed to significant credit risk arising from its financial instruments.

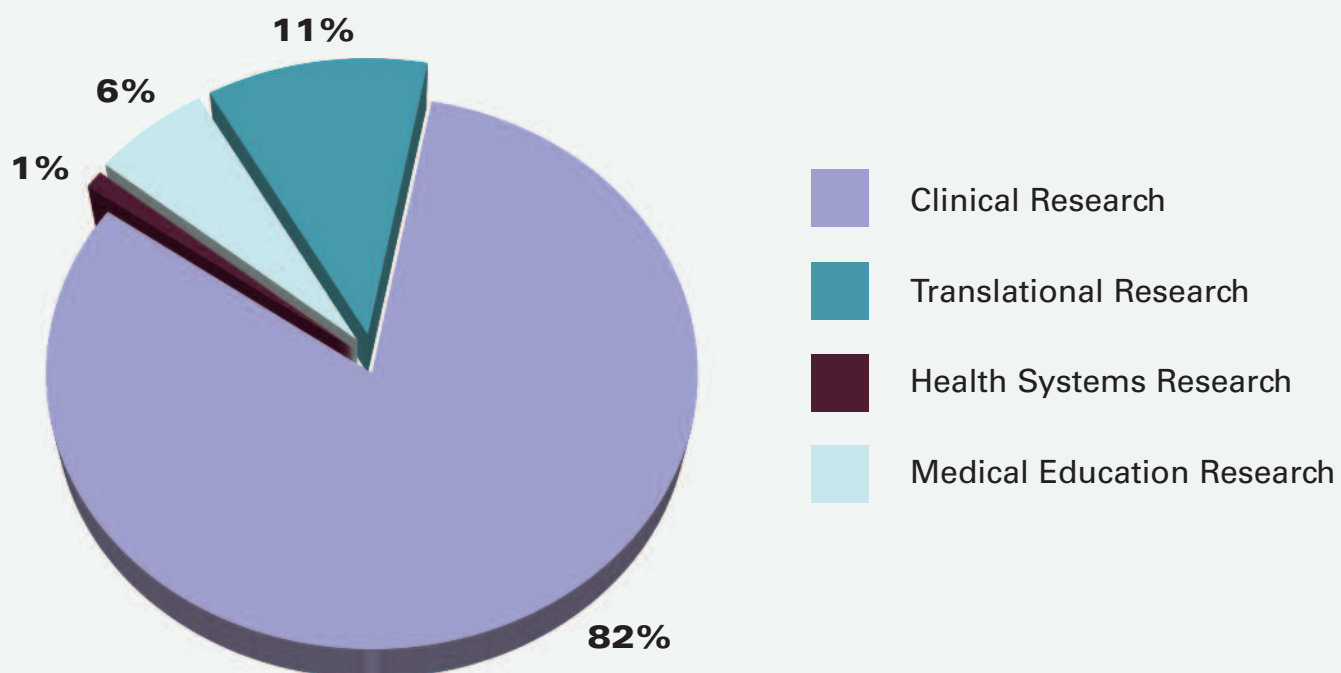
Additionally, the Foundation believes it is not exposed to significant liquidity risk as all investments are held in instruments that are highly liquid and can be disposed of to settle commitments.

There has been no change to the risk exposures from 2014.

2015 DISTRIBUTION OF GRANTS APPROVED



2015 DISTRIBUTION OF ASSETS AT MARKET VALUE



PSI FOUNDATION

GRANTS APPROVED

FOR THE YEAR ENDED DECEMBER 31, 2015

AMOUNT
APPROVED

HEALTH SYSTEMS RESEARCH

Queen's University

Dr. C.M. Nowik*, Dr. G.N. Smith

Maternal cardiovascular health: understanding perceptions of risk and improving post-partum follow-up

\$ 14,000

Total Health Systems

\$ 14,000

COMMUNITY-BASED RESEARCH

Toronto East General Hospital

Dr. R. Fung

Are lower doses of cyproterone acetate effective in the hormonal treatment of transgender females?

\$ 5,500

Total Community-Based Research

\$ 5,500

MEDICAL EDUCATION RESEARCH

Sunnybrook Health Sciences Centre

Dr. D. El Rouby*, Dr. D. Piquette

Physicians' lived experience of end of life discussions during acute hospitalizations: a phenomenological study

\$ 4,500

The Ottawa Hospital

Dr. M.D. Bould

Consolidating tools for outcomes in resuscitation (CONTOUR)

\$ 248,500

Total Medical Education Research

\$ 253,000

GRANTS APPROVED

FOR THE YEAR ENDED DECEMBER 31, 2015 (CONTINUED)

AMOUNT
APPROVED**CLINICAL RESEARCH****Children's Hospital of Eastern Ontario**

Dr. D. Grynspan, Dr. S. Bainbridge

A novel histopathology diagnostic antibody panel capable of identifying distinct subclasses of placental disease in preeclampsia	\$ 166,500
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Dr. S. Dhanani, Dr. A. Seely

Continuous waveform analysis to improve prediction of time to death after withdrawal of life sustaining therapy in critically ill patients	\$ 168,000
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Hospital for Sick Children

Dr. A.S. Doria, Dr. S. Schuh

MRI for diagnosis of equivocal initial ultrasounds in suspected pediatric appendicitis: Ultrasound First, MRI Second Approach	\$ 134,500
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Dr. R.P. Jankov

Preclinical assessment of nitrite as therapy for chronic neonatal lung injury and pulmonary hypertension	\$ 169,500
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Dr. P. Kannu

cMET signaling in OFD and fracture repair	\$ 170,000
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Dr. S. Mahant, Dr. B. Johnston

Probiotics for the prevention of antibiotic-induced diarrhea in hospitalized children (PAID)	\$ 165,000
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McMaster University

Dr. H. Chaudhry*, Dr. B. Ristevski

Distractions on the road: injury evaluation in surgery and fracture clinics (DRIVSAFE)	\$ 20,000
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Dr. B.A. Petrisor, Dr. S. Sprague

Prospective Abuse and Intimate Partner Violence Surgical Evaluation (PRAISE-2): an Ontario-based multi-centre prospective cohort study	\$ 156,500
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Mount Sinai Hospital

Dr. J. Elliott*, Dr. E. Greenblatt

Non-invasive genomic analysis of human endometrial receptivity in women with polycystic ovarian syndrome	\$ 19,500
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Dr. J.D. Marhong*, Dr. S. Mehta

Sedation & mobilization during venovenous extracorporeal membrane oxygenation (VV-ECMO) for acute respiratory failure: an international survey	\$ 19,500
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Northern Ontario School of Medicine

Dr. K. Wong, Dr. K. Saidi

An analysis of the functional benefit, narcotic use and time to discharge readiness following the implementation of a comprehensive pain management protocol for primary total knee arthroplasty	\$ 59,000
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GRANTS APPROVED

FOR THE YEAR ENDED DECEMBER 31, 2015 (CONTINUED)

AMOUNT
APPROVED**CLINICAL RESEARCH (CONTINUED)****Queen's University**

Dr. D. Bardana, Dr. S. Waldman	
Development of human engineered cartilage suitable for joint resurfacing	\$ 169,000
Dr. J.G. Boyd	
The CONFOCAL Study: cerebral oxygenation and neurological outcomes following critical illness	\$ 231,000
Dr. I. Gilron	
Innovations in the management of musculoskeletal pain with alpha-lipoic acid: The IMPALA Trial	\$ 169,500

St. Michael's Hospital

Dr. A.J. Baker, Dr. C. Librach	
Human umbilical cord perivascular cell (HUCPVC) therapy for traumatic brain injury: targeting the neurovascular unit	\$ 160,500
Dr. J.D. Bell*, Dr. A.J. Baker	
A pilot study of sub-anesthetic ketamine infusion for neuroprotection after aneurysmal subarachnoid hemorrhage: effects on white matter integrity, inflammatory biomarkers, and neurocognitive outcome	\$ 18,000
Dr. M.A. Hussain*, Dr. M. Al-Omran	
Trends and outcomes of carotid artery revascularization in Ontario	\$ 20,000
Dr. F.G. Kouyoumdjian, Dr. S.W. Hwang	
Elucidating the health care utilization of people who experience detention or incarceration in provincial facilities in Ontario: a population-based study	\$ 77,000
Dr. O.D. Rotstein, Dr. S. Rizoli	
Effect of remote ischemic conditioning on neutrophil function and the immune-inflammatory and coagulation profiles in trauma patients with hemorrhagic shock	\$ 168,000
Dr. R.A. Todd*, Dr. M. Cusimano	
A Dark Room: documentary film based education on the psychiatric effects of hockey concussion	\$ 20,000
Dr. D. Yuen, Dr. A. Kirpalani	
Novel noninvasive assessment of kidney transplant fibrosis with magnetic resonance elastography	\$ 249,500

Sunnybrook Health Sciences Centre

Dr. R.A. Joundi*, Dr. M. Kapral	
Impact of dysphagia in patients with acute stroke: a large population-based study using the Ontario Stroke Registry	\$ 20,000
Dr. S. Mason*, Dr. A. Nathens	
The association between burn injury and mental health: a population-based analysis	\$ 19,500
Dr. B. Safa, Dr. S. Choi	
Comparison of the analgesic duration of 0.5% Bupivacaine with 1:200,000 epinephrine versus 0.5% Ropivacaine versus 1% Ropivacaine for low volume ultrasound-guided interscalene brachial plexus block	\$ 47,000

GRANTS APPROVED

FOR THE YEAR ENDED DECEMBER 31, 2015 (CONTINUED)

AMOUNT
APPROVED**CLINICAL RESEARCH (CONTINUED)**

Dr. D.Y. Tam*, Dr. S.E. Fremes
A novel risk stratification score for readmission after discharge
from cardiac surgery \$ 20,000

Dr. C. Yarnell*, Dr. R. Fowler
Level of training and end-of-life predictions: a prospective
study of resident and attending physicians prognosis
agreement and accuracy \$ 19,000

Toronto General Hospital

Dr. E. Boot, Dr. A.S. Bassett
Moving beyond Parkinson's disease in 22q11.2 deletion
syndrome: a study on movement disorders in adults \$ 69,000

Dr. K. Lam*, Dr. P. Peng
Applied anatomy of hip and knee innervation relevant to
ultrasound guided pain intervention \$ 18,500

Dr. C. Marras, Dr. A. Lang
Risk of parkinsonism after appendectomy \$ 31,500

University of Ottawa

Dr. A.J. Anton*, Dr. N. Dudek
Beyond walking: using the comprehensive high-level activity
mobility predictor (CHAMP) in lower extremity amputees \$ 10,500

Dr. J. Woulfe
Skin biopsy in Parkinson's disease: novel approach to detect
pathological alpha-synuclein \$ 67,500

University of Toronto

Dr. C.J.D. Wallis*, Dr. R.K. Nam
A population-based cohort study assessing cardiovascular
and oncologic events associated with testosterone
replacement therapy \$ 17,500

Western University

Dr. S.L.Liu
CLEAR SIGHT: a randomized trial of non-mydriatic
ultra-widefield retinal imaging to screen for diabetic eye disease \$ 159,000

Dr. P.W. Luke, Dr. R. Bhattacharjee
Immunological impact of carbon monoxide releasing molecule
in renal transplantation \$ 169,000

Dr. V.A. McPherson*, Dr. J. Izawa
A window of opportunity study to evaluate the role of the
combination of metformin and simvastatin as a neoadjuvant
therapy in invasive bladder cancer \$ 20,000

Women's College Hospital

Dr. P. Rochon
Optimizing prescribing of cholinesterase inhibitors for older
women and men with dementia \$ 169,000

Total Clinical Research **\$ 3,387,500**

FELLOWSHIPS

PSI Graham Farquharson Knowledge Translation Fellowship

Dr. N.A. Jumah

\$ 150,000

Dr. N. Persaud

\$ 300,000

Total Fellowships**\$ 450,000**

LECTURESHIPS

NOSM Visiting Lectureship

Northern Ontario School of Medicine

\$ 12,053

Total Lectureships**\$ 12,053****GRAND TOTAL****\$ 4,122,053**

* Investigators funded under the Resident Research Program

PSI FOUNDATION

RECENTLY PUBLISHED PAPERS
ON FOUNDATION FUNDED PROJECTS

TITLE	GRANTEE	JOURNAL
Women's values and preferences for thromboprophylaxis during pregnancy: a comparison of direct-choice and decision analysis using patient specific utilities	Bates, S.M.	Thromb Res. 2015 Aug;136(2):341-7
Radiograph-negative lateral ankle injuries in children: occult growth plate fracture or sprain?	Boutis, K.	JAMA Pediatr. 2016 Jan 4;170(1):e154114
Normal values for segmental bioimpedance spectroscopy in pediatric patients	Brandão, L.R.	PLoS One. 2015 Apr 13;10(4):e0126268
Effect of whole-body vibration on calcaneal quantitative ultrasound measurements in postmenopausal women: a randomized controlled trial	Cheung, A.M.	CalcifTissue Int. 2014 Dec;95(6):547-56
Postoperative sleep-disordered breathing in patients without preoperative sleep apnea	Chung, F. Shapiro, C.M.	Anesth Analg. 2015 Jun;120(6):1214-24
Genetics of chronic post-surgical pain: a crucial step toward personal pain medicine	Clarke, H.	Can J Anaesth. 2015 Mar;62(3):294-303
Preventive analgesia and novel strategies for the prevention of chronic post-surgical pain	Clarke, H.	Drugs. 2015 Mar;75(4):339-51
Probiotics: prevention of severe pneumonia and endotracheal colonization trial – PROSPECT: protocol for a feasibility randomized pilot trial	Cook, D.J.	Pilot and Feasibility Studies (2015) 1:19
Poor functional recovery after delirium is associated with other geriatric syndromes and additional illnesses	Dasgupta, M.	Int Psychogeriatr. 2014 Dec 18:1-10. [Epub ahead of print]
Quality of life instruments for skull base pathology: systematic review and methodologic appraisal	de Almeida, J.R. Vescan, A.D.	Head Neck. 2013 Sep;35(9):1221-31
Physical morbidity by surgical approach and tumor location in skull base surgery	de Almeida, J.R. Vescan, A.D.	Head Neck. 2013 Apr;35(4):493-9
Exploration of withdrawal of life-sustaining therapy in Canadian intensive care units	Dhanani, S.	J Intensive Care Med. 2015 Feb 12. [Epub ahead of print]
A randomised comparison between ultrasound and nerve stimulation for infraclavicular catheter placement	Dhir, S.	Anaesthesia. 2016 Feb;71(2):198-204
Properties of serial ultrasound clinical diagnostic pathway in suspected appendicitis and related computed tomography use	Doria, A.S. Schuh, S.	Acad Emerg Med. 2015 Apr;22(4):406-14

RECENTLY PUBLISHED PAPERS

ON FOUNDATION FUNDED PROJECTS (CONTINUED)

TITLE	GRANTEE	JOURNAL
Use of a daily goals checklist for morning ICU rounds: a mixed-methods study	Duan, E.H. Centofanti, J.E. Cook, D.J.	Crit Care Med. 2014 Aug;42(8):1797-803
Microbial source tracking and spatial analysis of <i>E. coli</i> contaminated private well waters in southeastern Ontario	Evans, G.	J Water Health. 2014 Jun;12(2):348-57
Human severe sepsis cytokine mixture increases β 2-integrin-dependent polymorphonuclear leukocyte adhesion to cerebral microvascular endothelial cells in vitro	Fraser, D.D. Cepinskas, G.	Crit Care. 2015 Apr 7;19:149
Pretreatment of human cerebrovascular endothelial cells with CO-releasing molecule-3 interferes with JNK/AP-1 signaling and suppresses LPS-induced proadhesive phenotype	Fraser, D.D. Cepinskas, G.	Microcirculation. 2015 Jan;22(1):28-36
Traumatic injury elicits JNK-mediated human astrocyte retraction in vitro	Fraser, D.D. Cepinskas, G.	Neuroscience. 2014 Aug 22;274:1-10
Comparison of isotonic and hypotonic intravenous maintenance fluids: a randomized clinical trial	Friedman, J.N.	JAMA Pediatr. 2015 May;169(5):445-51
Comparative evaluation of the visibility and block characteristics of a stimulating needle and catheter vs an echogenic needle and catheter for sciatic nerve block with a low-frequency ultrasound probe	Ganapathy, S.	Br J Anaesth. 2015 Dec;115(6):912-9
Intraplacental villous artery resistance indices and identification of placenta-mediated diseases	Garbedian, K. Gruslin, A.	J Perinatol. 2015 Oct;35(10):793-8
Socioeconomic status, sex, age and access to medications for COPD in Ontario, Canada	Gershon, A.	COPD. 2015 Dec;12(6):668-79
Trends in pulmonary function testing before noncardiothoracic surgery	Gershon, A.	JAMA Intern Med. 2015 Aug;175(8):1410-2
Mortality trends in women and men with COPD in Ontario, Canada, 1996-2012	Gershon, A.	Thorax. 2015 Feb;70(2):121-6
Quality of asthma care under different primary care models in Canada: a population-based study	Gershon, A.S.	BMC Fam Pract. 2015 Feb 14;16:19
Combination long-acting β -agonists and inhaled corticosteroids compared with long-acting β -agonists alone in older adults with chronic obstructive pulmonary disease	Gershon, A.	JAMA. 2014 Sep 17;312(11):1114-21
Prophylactic antibiotic regimens in tumour surgery (PARITY): a pilot multicentre randomised controlled trial	Ghert, M. Bhandari, M.	Bone Joint Res. 2015 Sep;4(9):154-62

RECENTLY PUBLISHED PAPERS

ON FOUNDATION FUNDED PROJECTS (CONTINUED)

TITLE	GRANTEE	JOURNAL
Repeated treatment with bone marrow cell secretory products maintains long-term renoprotection in experimental chronic kidney disease: a placebo-controlled trial	Gilbert, R.E.	Can J Kidney Health Dis. 2015 Nov 14;2:44
Combination of morphine with nortriptyline for neuropathic pain	Gilron, I.	Pain. 2015 Aug; 156(8):1440-1448
TRPV4 is required for hypoxic pulmonary vasoconstriction	Goldenberg, N.M.	Anesthesiology. 2015 Jun;122(6):1338-48
TRPV4: physiological role and therapeutic potential in respiratory diseases	Goldenberg, N.M.	Naunyn Schmiedebergs Arch Pharmacol. 2014 Oct 24. [Epub ahead of print]
Lung-protective ventilation in the operating room: time to implement?	Goldenberg, N.M.	Anesthesiology. 2014 Jul;121(1):184-8
Measuring diaphragm thickness with ultrasound in mechanically ventilated patients: feasibility, reproducibility and validity	Goligher, E.C. Ferguson, N.D.	Intensive Care Med. 2015 Apr;41(4):734
Editorial: Brain injury as a neurodegenerative disorder	Green, R.E.A.	Front Hum Neurosci. 2016 Jan 5;9:615
Nasal nitric oxide as a marker of sinus mucosal health in patients with nasal polyposis	Grewal, A.S. Lee, J.M.	Int Forum Allergy Rhinol. 2015 Oct;5(10):894-9
Interrater agreement for critical care EEG terminology	Hahn, C.D.	Epilepsia. 2014 Sep;55(9):1366-73
A phase-based electrical plethysmography approach to bladder volume measurement	Hassouna, M.M.	Ann Biomed Eng. 2015 Jul 30. [Epub ahead of print]
Child Neurology: pediatric seizures with hyaline astrocytic inclusions	Hazrati, L. Hawkins, C.E.	Neurology. 2013 Jul 16;81(3):e14-6
Reversal of insular and microstructural nerve abnormalities following effective surgical treatment for trigeminal neuralgia	Hodaie, M. Davis, K.D.	Pain. 2015 Jun;156(6):1112-23
Pilot of three objective markers of physical health and chemotherapy toxicity in older adults	Hsu, T. Leighl, N.	Curr Oncol. 2015 Dec;22(6):385-91
The influence of a concurrent cognitive task on lower limb reaction time among stroke survivors with right- or left-hemiplegia	Ismail, F.	Top Stroke Rehabil. 2015 Oct;22(5):342-8
Comparison of foot pedal reaction time among patients with right or left hemiplegia and able-bodied controls	Ismail, F.	Top Stroke Rehabil. 2013 Nov-Dec; 20(6):500-8

RECENTLY PUBLISHED PAPERS

ON FOUNDATION FUNDED PROJECTS (CONTINUED)

TITLE	GRANTEE	JOURNAL
Seminal plasma as a diagnostic fluid for male reproductive system disorders	Jarvi, K.	Nat Rev Urol. 2014 May;11(5):278-88
Differential diagnosis of azoospermia with proteomic biomarkers ECM1 and TEX101 quantified in seminal plasma	Jarvi, K.	Sci Transl Med. 2013 Nov 20; 5(212):212ra160
Equivalent fall risk in elderly patients on hemodialysis and peritoneal dialysis	Jassal, S.V.	Perit Dial Int. 2016 1-2;36(1):67-70
Evaluating the impact of a Canadian national anatomy and radiology contouring boot camp for radiation oncology residents	Jaswal, J. Palma, D.A.	Int J Radiat Oncol Biol Phys. 2015 Mar
Palmitate differentially regulates the polarization of differentiating and differentiated macrophages	Jeschke, M.G.	Immunology. 2016 Jan;147(1):82-96
Reliable scar scoring system to assess photographs of burn patients	Jeschke, M.G.	J Surg Res. 2015 Dec;199(2):688-97
Predictive value of IL-8 for sepsis and severe infections after burn injury: a clinical study	Jeschke, M.G.	Shock. 2015 Mar;43(3):222-7
Healthcare costs of burn patients from homes without fire sprinklers	Jeschke, M.G.	J Burn Care Res. 2015 Jan-Feb;36(1):213-7
Stress induced insulin resistance in regards to cellular organelles, inflammasome and inflammation and lipids	Jeschke, M.G.	Mol Biol 2014; 3(1):1000e114
Lower monoamine oxidase-A total distribution volume in impulsive and violent male offenders with antisocial personality disorder and high psychopathic traits: an [(11)C] harmine positron emission tomography study	Kolla, N.J. Meyer, J.H.	Neuropsychopharmacology. 2015 Oct; 40(11):2596-603
Elevated monoamine oxidase-A distribution volume in borderline personality disorder is associated with severity across mood symptoms, suicidality, and cognition	Kolla, N.J. Meyer, J.H.	Biol Psychiatry. 2014 Dec 16. pii: S0006-3223(14)00987-1
Permissive hypercapnia: what to remember	Laffey, J.G.	Curr Opin Anaesthesiol. 2015 Feb;28(1):26-37
Regional cerebral arterial transit time hemodynamics correlate with vascular risk factors and cognitive function in men with coronary artery disease	Lanctôt, K.L. Herrmann, N.	AJNR Am J Neuroradiol. 2015 Feb;36(2):295-301
Radial head implant diameter: A biomechanical assessment of the forgotten dimension	Lanting, B.A. King, G.J.W.	Clin Biomech (Bristol, Avon). 2015 Jun; 30(5):444-7

RECENTLY PUBLISHED PAPERS

ON FOUNDATION FUNDED PROJECTS (CONTINUED)

TITLE	GRANTEE	JOURNAL
The effect of radial head implant length on radiocapitellar articular properties and load transfer within the forearm	Lanting, B.A. King, G.J.W.	J OrthopTrauma. 2014 Jun;28(6):348-53
The effect of excision of the radial head and metallic radial head replacement on the tension in the interosseous membrane	Lanting, B.A. King, G.J.W.	Bone Joint J. 2013 Oct;95-B(10):1383-7
Influenza-induced priming and leak of human lung microvascular endothelium upon exposure to <i>Staphylococcus aureus</i>	Lee, W.L.	Am J Respir Cell Mol Biol. 2015 Oct; 53(4):459-70
The Tie2-agonist Vasculotide rescues mice from influenza virus infection	Lee, W.L.	Sci Rep. 2015 Jun 5;5:11030
Sodium channel inhibitors reduce DMPK mRNA and protein	MacKenzie, A.	ClinTransl Sci. 2015 Aug;8(4):298-304
Soft tissue oxygenation and risk of mortality (STORM): an early marker of critical illness?	Murkin, J.M. Mele, T.	J Crit Care. 2015 Apr;30(2):315-20
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Economic evaluation of web-based compared with in-person follow-up after total joint arthroplasty	Naudie, D.	J Bone Joint Surg Am. 2014 Nov 19; 96(22):1910-6
Model of interactive clinical supervision in acute care environments. Balancing patient care and teaching	Piquette, D.	Ann AmThorac Soc. 2015 Apr;12(4):498-504
Creating learning momentum through overt teaching interactions during real acute care episodes	Piquette, D.	Adv Health Sci Educ Theory Pract. 2015 Oct;20(4):903-14
Lactation support and breastfeeding duration in jaundiced infants: a randomized controlled trial	Pound, C.M.	PLoS One. 2015 Mar 6;10(3):e0119624
Proper placement of the distal biceps tendon during repair improves supination strength—a biomechanical analysis	Prud'homme-Foster, M. Papp, S.	J Shoulder Elbow Surg. 2015 Apr;24(4):527-32
Once is rarely enough: a population-based study of reoperations after postmastectomy breast reconstruction	Roberts, A. Zhong, T.	Ann Surg Oncol. 2015 Oct;22(10):3302-7
Association of prior β -blocker use and the outcomes of patients with out-of-hospital cardiac arrest	Scales, D.C.	Am Heart J. 2015 Nov;170(5):1018-1024
Economic evaluations in the diagnosis and management of traumatic brain injury: a systematic review and analysis of quality	Scales, D.C.	Value Health. 2015 Jul;18(5):721-34

RECENTLY PUBLISHED PAPERS

ON FOUNDATION FUNDED PROJECTS (CONTINUED)

TITLE	GRANTEE	JOURNAL
Improving use of targeted temperature management after out-of-hospital cardiac arrest: a stepped wedge cluster randomized controlled trial	Scales, D.C.	Crit Care Med. 2015 May;43(5):954-64
Trends in short- and long-term survival among out-of-hospital cardiac arrest patients alive at hospital arrival	Scales, D.C.	Circulation. 2014 Nov 18;130(21):1883-90
Randomized control trial for evaluation of a hands-free pointer for surgical instruction during laparoscopic cholecystectomy	Schlachta, C.M.	Surg Endosc. 2015 Dec;29(12):3655-65
Hydrogen sulphide and the kidney: important roles in renal physiology and pathogenesis and treatment of kidney injury and disease	Sener, A.	Nitric Oxide. 2015 Apr 30;46:55-65
Hydrogen sulfide treatment ameliorates long-term renal dysfunction resulting from prolonged warm renal ischemia-reperfusion injury	Sener, A.	Can Urol Assoc J. 2014 May;8(5-6):E413-8
Diabetes self-management education improves medication utilization and retinopathy screening in the elderly	Shah, B.R.	Prim Care Diabetes. 2015 Nov 24. [Epub ahead of print]
Diabetes self-management education is not associated with a reduction in long-term diabetes complications: an effectiveness study in an elderly population	Shah, B.R.	J Eval Clin Pract. 2015 Aug;21(4):656-61
Sugars and obesity: is it the sugars or the calories?	Sievenpiper, J.L.	Nutrition Bulletin, 40, 88-96
Effect of replacing animal protein with plant protein on glycemic control in diabetes: a systematic review and meta-analysis of randomized controlled trials	Sievenpiper, J.L.	Nutrients. 2015 Dec 1;7(12):9804-24
Sugar-sweetened beverage consumption and incident hypertension: a systematic review and meta-analysis of prospective cohorts	Sievenpiper, J.L.	Am J Clin Nutr. 2015 Oct;102(4):914-21
Effect of fructose on established lipid targets: a systematic review and meta-analysis of controlled feeding trials	Sievenpiper, J.L.	J Am Heart Assoc. 2015 Sep 10; 4(9):e001700
Fructose as a driver of diabetes: an incomplete view of the evidence	Sievenpiper, J.L.	Mayo Clin Proc. 2015 Jul;90(7):984-8
The ecologic validity of fructose feeding trials: supraphysiological feeding of fructose in human trials requires careful consideration when drawing conclusions on cardiometabolic risk	Sievenpiper, J.L.	Front Nutr. 2015 May 6;2:12
A qualitative study of the variable effects of audit and feedback in the ICU	Sinuff, T. Muscedere, J. Scales, D.C.	BMJ Qual Saf. 2015 Jun;24(6):393-9

RECENTLY PUBLISHED PAPERS

ON FOUNDATION FUNDED PROJECTS (CONTINUED)

TITLE	GRANTEE	JOURNAL
Suicide in the oldest old: an observational study and cluster analysis	Sinyor, M.	Int J Geriatr Psychiatry. 2016 Jan;31(1):33-40
Suicide in schizophrenia: an observational study of coroner records in Toronto	Sinyor, M.	J Clin Psychiatry. 2015 Jan;76(1):e98-103
Effect of infection with transmissible strains of <i>Pseudomonas aeruginosa</i> on lung transplantation outcomes in patients with cystic fibrosis	Srour, N. Aaron, S.D.	J Heart Lung Transplant. 2015 Apr;34(4):588-93
Isolation of neural stem/progenitor cells from the periventricular region of the adult rat and human spinal cord	Tator, C.H.	J Vis Exp. 2015 May 14; (99):e52732
Emergency department management of syncope: need for standardization and improved risk stratification	Thiruganasambandamoorthy, V. Stiell, I.G.	Intern Emerg Med. 2015 Aug;10(5):619-27
Integrating cortisol and isotopic analyses of archaeological hair: reconstructing individual experiences of health and stress	Van Uum, S.	Am J Phys Anthropol. 2015 Apr;156(4):577-94
Integrating cortisol and isotopic analyses of archaeological hair: elucidating juvenile ante-mortem stress and behavior	Van Uum, S.	International Journal of Paleopathology. Volume 9, June 2015, 28-37
Insulin sensitivity affects corticolimbic brain responses to visual food cues in polycystic ovary syndrome patients	Van Vugt, D.A.	Horm Mol Biol Clin Investig. 2015 Nov 1;24(2):101-15
A pilot evaluation of the role of bracing in stable thoracolumbar burst fractures without neurological deficit	Wai, E.K.	J Spinal Disord Tech. 2014 Oct;27(7):370-5
Changing incidence and outcomes following dialysis-requiring acute kidney injury among critically ill adults: a population-based cohort study	Wald, R.	Am J Kidney Dis. 2014 Dec 17. [Epub ahead of print]
The surgical management of upper tract stone disease among spinal cord-injured patients	Welk, B. Herschorn, S.	Spinal Cord. 2013 Jun;51(6):457-60
Frontotemporal correlates of impulsivity and machine learning in retired professional athletes with a history of multiple concussions	Wennberg, R. Tator, C.H.	Brain Struct Funct. 2015 Feb 27. [Epub ahead of print]
Erythropoietin and glucose homeostasis in women at varying degrees of future diabetic risk	Woo, M. Retnakaran, R.	J Diabetes Complications. 2015 Jan-Feb;29(1):26-31

2016 GRANTEE ANNUAL MEETING PRESENTERS

DR. MOHIT BHANDARI, MCMASTER UNIVERSITY

Dr. Bhandari received his M.D. from the University of Toronto. He completed a Master's degree at McMaster University and a PhD at Goteburg University in Sweden. He holds a Canada Research Chair in Musculoskeletal Trauma and Surgical Outcomes. Dr. Bhandari is a Professor in the Department of Surgery, Academic Division Head of Orthopaedic Surgery, and Associate Member of the Department of Clinical Epidemiology & Biostatistics at McMaster University. He is also Attending Staff at Hamilton Health Sciences Centre.

Dr. Bhandari's research interests are in clinical trials, meta-analyses, methodological aspects of surgery trials and the translation of evidence into surgical practice. He is currently involved in trials of tibial fracture management as well as wound irrigation techniques in open fractures, he oversees projects to increase awareness of Intimate Partner Violence, and he leads the international hip fracture research collaborative.



Dr. Mohit Bhandari

DR. VENKATESH THIRUGANASAMBANDAMOORTHY, UNIVERSITY OF OTTAWA

Dr. Thiruganasambandamoorthy is an Assistant Professor in the Department of Epidemiology and Community Medicine and the Department of Emergency Medicine at the University of Ottawa. He is also an Emergency Physician at the Ottawa Hospital and a Scientist at the Ottawa Hospital Research Institute. He completed his Master's in Epidemiology in addition to a Research Fellowship and mentors master's and postdoctoral students.

Dr. Thiruganasambandamoorthy's research interests include syncope and presyncope care, role of N-Terminal pro B-type Natriuretic Peptide (BNP) in syncope patients, CT head use in Emergency Department, arrhythmia risk in syncope and monitoring of syncope patients, and the role of contemporary troponin assay in diagnosis of NSTEMI.



Dr. Venkatesh Thiruganasambandamoorthy

DR. DAMON SCALES, SUNNYBROOK HEALTH SCIENCES CENTRE

Dr. Scales is a graduate of the University of Toronto. Residencies earned Dr. Scales his Royal College Fellowship in Internal Medicine and Critical Care Medicine. He completed his PhD in Clinical epidemiology and Health Care Research at the University of Toronto.

Dr. Scales research interests include health services delivery, health services research methods, critical illness and critically-ill populations, cardiac arrest and post-resuscitation care, acute lung injury and mechanical ventilation, anoxic and traumatic brain injury. He is currently conducting a stepped-wedge cluster RCT to improve the application of evidence-based predictions about neurological prognosis for patients that have suffered from anoxic brain injury. He is also the principal investigator for the ICE-PACS RCT, which is evaluating the prehospital initiation of therapeutic hypothermia by paramedics for improving outcomes after cardiac arrest.



Dr. Damon Scales

2016 RESIDENT POSTER PRESENTERS

DR. JODI WARMAN CHARDON, UNIVERSITY OF OTTAWA

Dr. Warman Chardon is a Clinician-Scientist in the Department of Medicine at the Ottawa Hospital, Ottawa Hospital Research Institute in Neurosciences and Clinical Epidemiology, Assistant Professor and co-Director of the Centre for Neuromuscular Disease at the University of Ottawa. Dr. Warman Chardon received her MD and completed her residency in Neurology at the University of Ottawa, and received an MSc from Queen's University. She completed research and clinical fellowships in neuromuscular disorders from McGill University and neurogenetics at the University of Ottawa. Dr. Warman Chardon was funded by PSI in 2013. Her research was entitled "Evaluating exome sequencing for the diagnosis of limb girdle muscular dystrophy."

DR. MIND MITRI, QUEEN'S UNIVERSITY

Dr. Mitri is currently a resident in Internal Medicine at Queen's University, and also enrolled in the Clinician Investigator Program and completing a Master's of Education. He received his MD from McGill University. Dr. Mitri was funded by PSI in 2014. His research project title is "Perceptions of physicians on the adoption of a palliative care approach in patients with COPD."

DR. MARK SINYOR, UNIVERSITY OF TORONTO

Dr. Sinyor is an Assistant Professor of Psychiatry at the University of Toronto. He is a psychiatrist at Sunnybrook Health Sciences Centre and an Associate Scientist at the Sunnybrook Research Institute. Dr. Sinyor completed his medical degree as well as a Master's degree in Chemistry at the University of Toronto. Dr. Sinyor was funded by PSI in 2011. His research project title is "Understanding suicides in Toronto: a comparison of suicide victims with and without a history of suicide attempts."

DR. NATHAN KOLLA, UNIVERSITY OF TORONTO

Dr. Kolla is a Forensic Psychiatrist and Clinician-Scientist to the Campbell Family Mental Health Research Institute at CAMH and the Department of Psychiatry at the University of Toronto. Dr. Kolla received his MD at the University of Saskatchewan. He completed his General Psychiatry residency, as well as a PhD at the University of Toronto. He has also undertaken a fellowship in forensic psychiatry at New York University. Dr. Kolla was funded by PSI in 2009. His research project title was "An investigation of prefrontal monoamine oxidase-A density in individuals with major depressive episode and comorbid borderline personality disorder."

DR. KATARZYNA JERZAK, MCMASTER UNIVERSITY

Katarzyna Jerzak is currently completing a medical oncology fellowship at the Sunnybrook Odette Cancer Centre. She received her MD and completed her Internal Medicine residency at McMaster University. Dr. Jerzak was funded in 2012 for her project entitled "Serum and urine markers of metabolic dysfunction in colorectal cancer: a pilot study."

VISION STATEMENT

BACKGROUND

When the Foundation was established in 1970 it was agreed that it should primarily be a granting agency rather than an operating agency and it continues to be managed by the physicians of Ontario. It was mandated by the Board of the new foundation, and the participating physicians, that the Foundation's prime objective should be the provision of funds solely within the health field.

To meet this mandate the Board of the new Foundation agreed that a diversified portfolio should be held consisting of equities and income-producing securities to permit a consistent level of granting.

THE VISION

The Foundation seeks to build upon its unique situation in the health research community, as a physician sponsored granting agency, and is based on the belief that continued support of peer reviewed, innovative research, will bring new and improved benefits to clinical practice.

The vision of the Foundation is to seek to address the unparalleled challenges that will face physicians in providing effective health care for their patients in the years to come.

The essential supporting structure of this vision is to encourage the research efforts of the new investigator, as well as provide funding for the education of practising physician.



GET INVOLVED

If you are interested in volunteering with PSI, please consider:

- Becoming a delegate: the House of Delegates meets annually with the mandate of overseeing the Board of Director's actions.
- Becoming a Director: PSI draws most of its Directors from the House of Delegates.
- Joining a committee: PSI has several working committees - including Grants and Finance Committees, for which PSI requires expertise in such areas as medical research and the financial sector.

DONATE

While PSI does not actively solicit funds, PSI is a registered charity and can provide tax receipts for charitable donations.

Please consider the above while reviewing PSI's accomplishments identified in this annual report.



Research & Education Funded by the Physicians of Ontario

