

Celebrating 10 years of accelerating research to repair the brain

NeuroScience Canada

2155 Guy Street, Suite 900, Montreal, Quebec, Canada H3H 2R9 T 514 989 2989 | F 514 989 1331 | info@neurosciencecanada.ca www.**neurosciencecanada.ca**

- Partnership Registration number: 86870 6326 RR0001
- Foundation Registration number: 89105 2094 RR0001

Annual Report 2007

Table of Contents





A decade of achievements

NeuroScience Canada is a national non-profit organization that develops and supports collaborative, multidisciplinary, multi-institutional research across the neurosciences. Through partnering with the public, private and voluntary sectors, NeuroScience Canada connects the knowledge and resources available in this area to **accelerate neuroscience research and funding** and **maximize the output of Canada's world-class scientists and researchers**.

NeuroScience Canada grew out of the NeuroScience Network, established in 1990 by the Government of Canada as part of its national Networks of Centres of Excellence Program. In 1998, the NeuroScience Network Centre of Excellence lost its federal funding and was subsequently transformed into a charitable organization called the NeuroScience Canada Foundation, and an affiliated non-profit organization called the NeuroScience Canada Partnership, **now known collectively as NeuroScience Canada**.

Since then, NeuroScience Canada has grown into **Canada's leading voluntary sector** organization devoted to advancing neuroscience research.

Over the past ten years, we have **raised more than \$11.5 million**, leveraged this funding to secure over \$20 million in partnered contributions, and funded about 100 individual and teams of researchers.

We have **developed partnerships** with 26 Voluntary Health Organizations, nine government agencies, 23 universities, and **built a network of 161 volunteers** across the country.

We have **given a voice to "brain disorders,"** raising awareness about their prevalence and impact on individuals, families, the economy and society.

But most important, we have **given hope to the millions of Canadians who are directly or indirectly touched** by diseases, disorders, and injuries of the brain, spinal cord and nervous system.

Thank you to all of our friends and supporters!

We look forward to the next decade and beyond...



Honorary Chair - Partnership (2006 - present); Former Chair of the Board (2003 - 2006)

"I am proud of my involvement with NeuroScience Canada during its transformation from a fully government-funded organization to one that is supported by a broad public and private base. The model of leveraging every dollar donated with partnered funding is proving enormously successful. The signature research program, the Brain Repair Program, is enabling Canada's world-class researchers to work collaboratively, across disciplines and institutions. This approach has already proven to accelerate the pace of discovery, and led to some key breakthroughs in our understanding of a range of brain disorders."

- Michael H. Wilson, Canadian Ambassador to the United States; Chair, NeuroScience Canada Foundation (1999-2003); Chair, National Brain Repair Fund Campaign (2001-2006)

Interim Chair of the Board (2006 - 2007)

"As one of the strong advocates for conversion of the publicly-funded NeuroScience Network to the privately-funded NeuroScience Canada, I am proud of our accomplishments over the past ten years and eagerly look forward to the ambitious plans for the future, including substantial increased private funding for neuroscience research with continuing effort to heighten awareness of the need for greater public and private support for these activities."

- Allan R. Taylor, retired Chairman and CEO, Royal Bank of Canada; Chair of the Governance Committee, NeuroScience Canada

Chair of the Board (2008 - present)

"I have been involved with NeuroScience Canada for almost 10 years and it is extraordinarily exciting to have seen it transformed into a world-class, privately-funded research organization, and national advocate for a variety of illnesses, diseases and disorders which fall under the neuroscience or "brain" umbrella. Collectively, these have far more serious health consequences for the general public in terms of cost and disability than the other two major groupings - heart and stroke and cancer -yet they are seriously underfunded relative to those others. NeuroScience Canada complements high-level research being done at our major universities and hospitals by focusing on excellence, cross-cutting teamwork and patient outcomes and, as such, is driving an agenda which encourages higher-risk taking, fast tracking and acceleration to achieve faster cures in brain disease and to improve the lives of patients and their families."

- J. Anthony Boeckh, President, Boeckh Capital Company Limited

Vice-Chair Science; Chair of the Science Advisory Council (2003 - present)

"It has been a pleasure to be the Vice-Chair Science for NeuroScience Canada. We have become, in a short period of time, a leader in research funding and advocacy for the repair of the brain. We are a model for other organizations working on brain repair issues worldwide, with a unique alliance of corporate and private donors, scientists, and stakeholders, encouraging collaborations between the best researchers in Canada. Our research programs are held in very high regard, showcasing novel and high-risk projects. I have no doubt that NeuroScience Canada will continue to be a leader in brain repair research, producing dramatic breakthroughs and findings that will translate into new therapies and treatments for many neurological and psychiatric conditions."

- Dr. David Kaplan, Senior Scientist, Cell Biology Program, The Hospital for Sick Children; Canada Research Chair in Cancer and Neuroscience

02 — Ms. Judith Sale, Executive Assistant/Office Manager; Ms. Inez Jabalpurwala, President; Ms. Dominique Godbout, Communications Assistant, NeuroScience Canada





Message from the Chair and the President

This year, NeuroScience Canada is celebrating its ten-year anniversary. This point in our history is appropriately marked by the close of our \$11.5-million campaign, and the fulfillment of our commitment to select and fund five teams of researchers through the Brain Repair Program that we designed and developed. At \$1.5 million each, plus funds for networking, these are the largest grants in Canada for multidisciplinary, multi-institutional brain repair research. The Brain Repair Program models the key principles that have always guided NeuroScience Canada: to pursue excellence and stimulate innovation—supporting the best and most promising and encouraging them to look at problems in new ways; to work in partnership and combine knowledge and resources—maximizing collective impact; and most important, to accelerate the pace of research discovery and search for cures—bringing hope and relief to patients and their families.

During the year, the Government of Canada established the Mental Health Commission of Canada. We applaud this initiative, as mental health is a key priority of NeuroScience Canada and our Brain Repair Program, and we look forward to collaborating with the Commission. The Chair of the Mental Health Commission of Canada, Michael J. L. Kirby, had previously served as Chair of NeuroScience Canada, but stepped down in January 2008 in order to focus his full attention on the Commission. Immediately following Mr. Kirby's departure, J. Anthony Boeckh, a long-standing Director and former Vice-Chair Administration, enthusiastically took on the role of Chair. We also continue to benefit from the leadership and vision of a distinguished Board of Directors, and the advice and counsel of Canadian and international science advisory councils.

In this report, you will read about some of NeuroScience Canada's achievements over the past 10 years. We are very proud of our history and track record, but we know that there is much more to be done. Brain and nervous system disorders impact one in two Canadian families, and are one of the three leading causes of death or disability and the leading cause of disability. Funding for research is dramatically disproportionate to this cost to society. As we write this message, preparations are already underway to launch our next major fundraising campaign, and to expand our research program and activities to raise awareness about the prevalence and impact of brain and nervous system disorders, and the need for more research funding and improved care for patients.

We thank all members of the NeuroScience Canada team for their profound dedication and hard work through the years, and our volunteers, donors and partners for their support and many valued contributions. We hope that you will take a pause with us to celebrate 10 years of accelerating Canada's world-class neuroscience research, and then look forward to our building on that success in the years ahead!

J. Anthony Boeckh Chair of the Board

Inez Jabalpurwala President

The Brain Repair Program[™]

Accelerating the search for cures

In 2003, NeuroScience Canada launched the Brain Repair Program, with the goal of accelerating collaborative, multidisciplinary, multi-institutional brain repair research. The program enables world-class Canadian researchers across the country to form highly focused teams, and to more rapidly discover breakthroughs that will ultimately lead to treatments and cures.

Each team of researchers receives \$1.5 million over three years, plus an additional maximum of \$20,000 per year for networking activities. Such operating funding is vital to our best and most promising scientists, allowing them to fully utilize the investments in infrastructure and salaries that have already been made by governments and private donors.

First competition

The Brain Repair Program was launched with a \$1.2-million challenge gift from an anonymous donor (now deceased). This was followed by a grant of \$1.5 million from the Canadian Institutes of Health Research (CIHR), through its Institute of Neurosciences, Mental Health and Addiction, and Institute of Aging; \$600,000 from the Ontario Neurotrauma Foundation; and many gifts from the corporate community and from private donors and foundations. These are acknowledged on Pages 16-17.

The peer review process for the Brain Repair Program competition was thorough and rigorous, and was done in two stages. The first stage was a review of Letters of Intent by Canadian scientists on our Science Advisory Council. The second stage was a review of Full Applications by our International Review Committee. This committee includes distinguished neuroscientists from around the world, with expertise in areas relevant to brain repair research.

Three teams were funded in the first competition; their research covers the range of neurological and psychiatric disorders, as well as spinal cord injuries and chronic pain. The teams completed their three-year grants in October 2007. Their research is described on Page 5.

Second competition

Thanks to the generosity of the T. Robert Beamish family, which made a \$1.5-million commitment through the WB Family Foundation, and to partnered funding from the CIHR – Institute of Aging in the amount of \$500,000, NeuroScience Canada was able to launch the second Brain Repair Program competition in 2006. Two new Brain Repair Program research teams were selected for funding in June 2007. As with the first teams, they will receive \$1.5 million over three years, plus up to \$60,000 over the same period for networking. More detail about these projects is provided on Pages 6-7.

Brain repair is a field of research aimed at exploring the brain's ability to be repaired or to repair itself.

Brain Facts

• • •

04

Did you know that...

 The brain is made up of 100 billion neurons that communicate with each other primarily through biochemical signals (neurotransmitters) traveling at speeds up to 360 km/hour along a network that involves trillions of synaptic connections.

 There are more than 1,000 diseases, disorders and injuries affecting the brain, spinal cord and nervous system, including Alzheimer's disease, Parkinson's disease, multiple sclerosis, brain tumours, chronic pain, depression, stroke, and addiction.

 There are common root causes and mechanisms across diseases, disorders and injuries of the brain and nervous system, including cell loss, abnormal functioning of nerve cells, and chemical and molecular imbalances.

Brain Repair Program research projects

The three teams selected in the first competition completed their three-year grants in October 2007. Our funding has enabled them to make a number of key breakthroughs:

Novel approaches to central nervous system white matter repair

• • •

Findings

The team found that stem cells isolated from the dermis, the layer of skin under the epidermis, can generate nervous system cells that when placed into mice with a spinal cord injury, will restore limb function and movement. The next phase of the project will be to test whether human skin cells can repair the acute and chronically injured spinal cord in animals, the final step prior to clinical trials.

Impact

Stem cells from skin can be readily isolated, and these cells from a person with a spinal cord injury will not be rejected as would cells from other people. Skin stem cells are therefore an exciting and promising novel source of accessible cells for the treatment of nerve injuries.

Team

Team leader: **Dr. Freda Miller,** University of Toronto

Members: Dr. David Kaplan, University of Toronto; Dr. Wolfram Tetzlaff, University of British Columbia; Dr. Samuel Weiss, University of Calgary

Transforming research on chronic pain in Canada

Findings

The team has made a major step forward by establishing that malfunctioning in the spinal cord causes neuropathic pain. They discovered that a type of cell in the spinal cord the microglia - become activated after injury to nerves in the body. These activated microglia emit chemical signals that stimulate nerve cells in spinal cord pain pathways and cause them to send messages to the brain even if the skin is only harmlessly interprets these messages as pain. not harmless stimulation.

Impact

The team discovered cell types, molecules and genes involved in neuropathic pain. This new knowledge will lead to a range of advances, not only in treatment, but also in the diagnosis of neuropathic pain in those suffering.

Team

Team leader: **Dr. Michael Salter,** University of Toronto

Members: Dr. Karen Davis, University of Toronto; Dr. Yves De Koninck, Université Laval; Dr. Jeffrey Mogil, McGill University; Dr. Min Zhuo, University of Toronto

Novel therapeutic strategies to repair abnormalities in psychiatric disorders

•••• Findings

Communication between brain cells is essential for normal brain function. Disruption of this process has been proposed as the root cause of many psychiatric and neurological disorders. Most of current drug therapies for these disorders work in an unspecific manner, repairing the communication in the whole brain. The team completed a Proof of Principle study for developing a novel method for treating these disorders, whereby drugs can restore the normal brain function, with no obvious side effect.

Impact

Results from this investigation can lead to the development of drugs that have no side effects, thereby giving a better quality of life to patients affected by disorders such as addiction, Alzheimer's disease, autism and schizophrenia.

Team

Team leader: **Dr. Yu Tian Wang**, University of British Columbia

Members: Dr. Stephen Ferguson, University of Western Ontario; Dr. Alaa El-Husseini, University of British Columbia (deceased in December 2007); Dr. Ridha Joober, McGill University; Dr. Anthony G. Phillips, University of British Columbia

The two teams selected in the second Brain Repair Program competition commenced their funding on July 1st, 2007:

Mitochodrial dysfunction and neuronal demise: insights provided by Parkinson's disease genes

Background

This research project aims to address the question: What is the role of tiny structures called mitochondria in the death of brain cells in Parkinson's disease? In Parkinson's, brain cells called neurons, containing the neurotransmitter dopamine, degenerate, leading to a dramatic and irreversible perturbation of the function of brain systems involved in motor control. Although the causes of this disease are not yet completely understood, the last few years have witnessed the discovery of a number of genetic dysfunctions leading to the production of abnormal proteins in the brain of affected individuals.

Goal

The goal is to attempt to explain why these genetic perturbations lead to the death of dopamine-containing neurons. The major lead followed by this team is that all of these abnormal proteins end up, one way or another, affecting tiny but abundant organelles called mitochondria, found inside neurons. Dysfunction of these mitochondria would then lead to perturbations of neuronal physiology and to the generation of cell death signals. Similar signals are thought to be activated in other neurodegenerative diseases. Therefore these studies should lead to major progress in our understanding of the causes of brain damage in the context of Parkinson's disease and other neurodegenerative disorders.

Plan for the first year

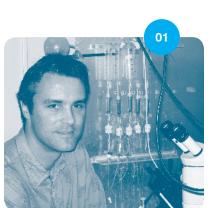
During the first year of their grant, the team will tackle a number of objectives aimed at evaluating the impact of various Parkinson's disease gene mutations on the function of mitochondria, and on the function of neurons, and in particular, dopamine-secreting neurons in the brain.

Team

Team leader: **Dr. Louis-Éric Trudeau**, Université de Montréal Members: Dr. Edward Fon, Montreal Neurological Institute; Dr. David S. Park, University of Ottawa, Dr. Yong Rao, McGill University, Dr. Heidi McBride, University of Ottawa

"NeuroScience Canada's grant is different because of its scope. By funding projects that bring together researchers from many different disciplines and institutions. NeuroScience Canada has allowed me to build a team that includes specialists in the molecular biology of neurodegenerative diseases, in genetics of neuronal development, and in mitochondrial biology. The grant has enabled me to formalize collaborations with these other laboratories; without the funding, these collaborations-and their contributions to sciencewould have been much more limited."

Dr. Louis-Éric Trudeau, Associate
Professor, Department of pharmacology,
Université de Montréal



01 - Dr. Louis-Éric Trudeau, Associate Professor in the Department of pharmacology at the Université de Montréal

02 - Dr. V. Wee Yong, Professor in the Departments of Oncology and Clinical Neurosciences at the University of Calgary, with his colleague Dr. Luanne Metz, also Professor in the Department of Clinical Neurosciences at the University of Calgary.

Harnessing beneficial aspects of neuroinflammation for regenerating the central nervous system

Background

This research project aims to address the question: How can we regenerate the injured nervous system to enable some degree of recovery of functions? The project focuses on the immune system, which is comprised of two major components, the innate and adaptive systems. Innate immunity is the first immune component to sense and respond to an injury. Indeed, a well-regulated innate immune response is a normal physiological process that is essential for functions such as wound healing and defense against foreign substances. Within the central nervous system (CNS), microglia are the resident cell population belonging to the innate immune system. Under conditions of CNS injury, another innate immune cell type, the macrophage, accesses the brain and spinal cord. The initial emphasis was on the role that such activated innate immune cells play in promoting the disease process in conditions such as stroke, multiple sclerosis and spinal cord injury. Only more recently is there attention on the contribution of the innate immune system in improving the well being of the CNS.

Goal

This team postulates that a well-regulated immune reactivity in the CNS can enable repair of the nervous system. This project seeks to define the conditions under which physiologic neuroinflammation enables recovery, and to harness the beneficial aspects of innate neuroinflammation to allow the regeneration of the CNS from insults. This approach is transformational, as it promises to deliver new means to enabling CNS regeneration. These experiments are relevant to promoting recovery from several neurological disorders, including stroke, multiple sclerosis, spinal cord injury, and Alzheimer's disease.

Plan for the first year

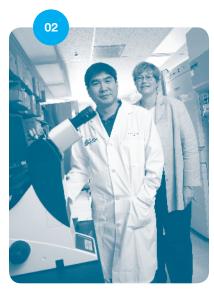
During the first year of their grant, the team will seek to fine-tune the inflammatory response so that the detrimental aspects of inflammation on the nervous system can be inhibited; at the same time, it is hoped that the beneficial sides of inflammation and their positive effects on the nervous system can be promoted. Of note is that the beneficial properties of a normally functioning immune system will be tapped to foster repair.

Team

Team leader: **Dr. V. Wee Yong,** University of Calgary Members: Dr. Luanne Metz, University of Calgary; Dr. Christopher Power, University of Alberta; Dr. Peter Stys, University of Calgary; Dr. Fiona Costello, University of Calgary; and Dr. Serge Rivest, Université Laval

"NeuroScience Canada's grant has enabled me to interact with a team of basic scientists and clinicians in a concerted effort to help regenerate the nervous system. Moreover, it has allowed us to bring about risky, but potentially high yield, projects and to apply various techniques in collaboration to tackle the issue of repair of the nervous system. This grant is different from other types of funding opportunities because it encourages team collaboration and it seeks transformative outcomes."

- Dr. V. Wee Yong, Professor, Departments of Oncology and Clinical Neurosciences, University of Calgary



Partnered research programs

Joining efforts to leverage expertise and resources

Barbara Turnbull Award for Spinal Cord Research

This \$50,000 award, in support of Canadian research on spinal cord injury, is funded by NeuroScience Canada, the Barbara Turnbull Foundation and the Canadian Institutes of Health Research (CIHR) - Institute of Neurosciences, Mental Health and Addiction. The award recipient is judged, from among the CIHR-funded investigators each year, to be conducting the most promising and exciting research in this area.



In 2007, the recipient of the Barbara Turnbull Award for Spinal Cord Research was Dr. Richard Stein, a professor emeritus of physiology and neuroscience at the University of Alberta. Dr. Stein received the award after more than 40 years working as a neuroscientist and studying ways to help people with spinal cord injuries improve their ability to move. Dr. Stein and his colleagues are working to develop an Intra Spinal Micro Stimulation (ISMS) device that may be placed on the spinal cord of a paralyzed person to help them walk. This tool is groundbreaking because it will also record sensory feedback coming from the muscles and nerves in the legs and hips.

Dr. Stein served as a Director of NeuroScience Canada and a member of our Science Advisory Council from 1998 until 2007, when he was named an Honorary Director. We are very proud to be associated with such an accomplished and passionate scientist, who has made major contributions to the field of neuroscience to benefit people with central nervous system disorders. its inception 10 years ago, has been an enlightening and enormously positive experience. Together we considered. co-operative ventures to advance awareness about the value of spinal cord research done in Canada. It is creative partnering such as this. a hallmark of the NeuroScience Canada approach, that represents an important legacy and impact of NeuroScience Canada's activities." - Barbara Turnbull, President, Barbara Turnbull Foundation

Further details about our research programs can be found on our website: www.neurosciencecanada.ca

5200

"My association with

NeuroScience Canada, from

01 — Dr. Richard Stein receives the Barbara Turnbull Award for Spinal Cord Research on April 2, 2008, from Dr. Rémi Quirion, Scientific Director of the CIHR–Institute of Neurosciences, Mental Health and Addiction, while Barbara Turnbull, President the Barbara Turnbull Foundation, looks on.

Alberta Initiative

The Alberta Initiative was developed in partnership with the Alberta Heritage Foundation for Medical Research (AHFMR). Its purpose was to retain excellent young neuroscience researchers at three Alberta universities: University of Calgary, University of Alberta and University of Lethbridge. Through this program, NeuroScience Canada provided \$597,650 to fund eight fellowships and 22 studentships. These funds were matched by the AHFMR at a ratio of 7:3. An additional \$125,000 was allocated to support a post-doctoral fellow at the University of Calgary.

A further \$75,000 was directed to support a research project led by Dr. James R. Dunn and Dr. Paula Goering: *Feasibility Study for a Two-City Demonstration of Supportive Housing for Individuals with Severe Mental Illness*. Drs. Goering and Dunn are undertaking a pilot study in the Toronto and Calgary on the effects of supportive housing on people with severe and persistent mental illness (SPMI). Of particular interest is the effect of supportive housing on future housing stability, quality of life, functioning, symptoms and health-care utilization for people with SPMI.

In April 2008, Drs. Dunn and Goering reported that they have completed the data collection and have assembled a working group to assess its validity and reliability. In addition, they have three manuscripts in preparation that will be submitted for publication. The study was also one of the key references used by the Mental Health Commission of Canada (MHCC) to make the case to the Federal Government to allocate \$110 million towards research to help the homeless living with mental illness. Dr. Goering has become research advisor to the MHCC for the design and development of a five-city demonstration project that will focus on a distinct group of people living with mental illness who are homeless. She is drawing upon what was learned in this feasibility study as she plans the larger MHCC study.

Cognitive Impairment in Aging Partnership

NeuroScience Canada is a member of the Cognitive Impairment in Aging (CIA) Partnership. The CIA Partnership is a collaboration between government, non-government and industry groups, led by the CIHR-Institute of Aging. Its mission is to improve knowledge in the area of cognitive impairment by coordinating increased research efforts that in turn will facilitate the development, application and evaluation of interventions, services and products for older people. As of March 31, 2007, \$15.8 million and an additional \$4 million, pending peer review, has been committed by CIA partners towards a range of research programs, supporting individuals and teams doing research in this area.

Dr. Hubert van Tol Travel Fellowship

To honour the legacy of Dr. Hubert van Tol, an internationally recognized and respected neuroscientist who passed away in April 2006, his family set up the Dr. Hubert van Tol Fund at NeuroScience Canada, through which the Dr. Hubert van Tol Travel Fellowship was established. In 2008, the recipient of this prestigious award is Ms. Lorraine Lau, a PhD student in the Department of Clinical Neuroscience at the University of Calgary and a trainee in the lab of Dr. V. Wee Yong, the leader of one of our Brain Repair Program teams. Ms. Lau attended the Gordon Research Conference on Myelin in Il Cicco, Italy, May 4-8, 2008. The family and supporters of this fellowship would like to ensure that a total of ten annual awards are given, each valued at up to \$5,000.

ምሮመ

"The CIHR-Institute of Aging has had the pleasure of working with NeuroScience Canada for a number of years and has witnessed its meticulous approach to funding excellence, its dedication to enhancing support for neurological and psychiatric disorders, and its success with partnership building and fundraising. NeuroScience Canada has been a key member of the Cognitive Impairment in Aging Partnership Initiative led by the Institute of Aging. In addition to partnering on research, NeuroScience Canada has contributed innovative ideas to the strategic directions of the Partnership. We look forward to continuing our valued partnership."

- Anne Martin-Matthews, Scientific Director, CIHR - Institute of Aging

Fundraising

Making the case for investing in excellent and innovative brain research

Fundraising campaign

In 2001, NeuroScience Canada launched the \$11.5-million National Brain Repair Fund Campaign, with the purpose of supporting excellent neuroscience research in Canada. We reached our goal in early 2007. The most recent gift to our Brain Repair Program was a major grant from the R. Howard Webster Foundation. We thank all of our supporters for their generosity.

The funds raised through our campaign are allocated as follows:

- \$8 million to fund five Brain Repair Program teams + networking;
- \$2 million to fund partnered research programs in neuroscience;
- \$1.5 million for operations (including developing, implementing and monitoring the research programs, and advocacy and public awareness activities that support the advancement of Canadian research)

NeuroScience Canada is now beginning to plan for our next major campaign. We are undertaking an environmental scan and feasibility study, and are consulting with our science councils and other members of the neuroscience research community, in order to review and expand our research program. This will be the basis for our case for support.

NeuroScience Canada has always taken pride in keeping non-research related expenses to the minimum required for operation efficiency and good governance. To ensure that we maintain that standard, we separately make every effort to raise funds for activities that support our research programs but are not directed specifically to those programs. NeuroScience Canada Directors have also made generous gifts to operations. In this way, between 75 and 85 percent of every dollar donated is disbursed directly to Canadian researchers.

Neuroscience Canada Campaign volunteers

We recognize and thank our dedicated volunteers across the country:

Ontario (Toronto)

J. Douglas Grant, Stanley H. Hartt, Brian D. Lawson, Bruce M. Rothney, John M. Stewart

Western and Central Canada

Alan S. Dunnett (Winnipeg), George F. Gaffney (Vancouver), Paul J. Hill (Regina)

Quebec (Montreal)

The Hon. W. David Angus, J. Anthony Boeckh, Marcel Côté, Lili de Grandpré, Rupert Duchesne

Brain Facts

Did you know that...

• Brain and nervous system disorders carry enormous indirect costs as they are the leading cause of non-fatal disability, which leads to lost productivity and reduced quality of life, as well as impacting on family members.

• With the aging population, the costs of neurological and psychiatric-related conditions will increase dramatically in the next decade.

• Canadian neuroscience research is world class but underfunded by international standards. 01 – Dr. Martin J. Steinbach, former member of the CIHR-Institute of Neurosciences, Mental Health and Addiction Advisory Board, presents Ms. Inez Jabalpurwala, President of NeuroScience Canada, with the award at the Institute's Annual General Meeting in November 2003.

02 — Mr. Andrew J. MacDougall, Consultant, Spencer Stuart Canada; Ms. Anne Golden, President and CEO, The Conference Board of Canada; Mr. Allan R. Taylor, Chair, Governance Committee, NeuroScience Canada; and Mr. Phillip Crawley, Publisher and CEO, The Globe and Mail, at the award ceremony in February 2006.

Awards and Recognition

... of our Science Program

In 2003, NeuroScience Canada received the **Non-Governmental Organization**/ **Voluntary Health Organization of the Year** award from the CIHR-Institute of Neurosciences, Mental Health and Addiction. The award recognized our history of participating in and facilitating cross-sector partnerships, and our leadership in developing the Brain Repair Program.

... of our Governance

Good governance is a priority for NeuroScience Canada, essential to transparency, monitoring and accountability, and to building trust with our stakeholders. We were therefore honoured to receive the Conference Board of Canada/Spencer Stuart 2006 not-for-profit **National Award in Governance**. These awards single out bold and innovative solutions to governance challenges, and organizations that have broken new ground in the search for governance excellence.

... of our Leadership

NeuroScience Canada's President, Inez Jabalpurwala, was named one of the **2007 Canada's Most Powerful Women: Top 100** by the Women's Executive Network. The award recognizes Canada's most accomplished women leaders from across the country and in all sectors. Ms. Jabalpurwala was honored in the *Trailblazers & Trendsetters* category.



03 — **Inez Jabalpurwala**, President of NeuroScience Canada (fourth from right) with the other award recipients in her category, in November 2007.

ምሮመ

"It has been a pleasure to participate in the development of a highly effective and fruitful partnership with NeuroScience Canada. NeuroScience Canada and the CIHR-Institute of Neurosciences. Mental Health and Addiction aim to promote excellence and to support the most innovative and cuttingedge research on the brain. The Brain Repair Program is a model in the field and has funded some of the very best neuroscientists who are truly competitive on the international scene. NeuroScience Canada is now 10 years old... for a brain, it is a critical age often shaping the future of a given individual. I am convinced that in partnership with key players nationally and internationally, NeuroScience Canada's future is very bright."

- Dr. Rémi Quirion, Scientific Director, CIHR-Institute of Neurosciences, Mental Health and Addiction

Public Awareness and Outreach

Raising the profile of brain disorders

Roundtable consultation process and report

An important focus in 2007 was our coalition-building efforts. NeuroScience Canada, the Canadian Association for Neuroscience, the Canadian Neurological Sciences Federation, the Canadian Brain and Nerve Health Coalition, and the Barbara Turnbull Foundation, partnered with the Public Policy Forum (PPF) to hold a series of four roundtable sessions in Ottawa, Calgary, Vancouver and Toronto. Through these roundtable sessions, we consulted with a range of stakeholders on how a coalition of groups representing the various brain and nervous system disorders would be able to reach governments and the general public with a common set of messages about the prevalence and impact of neurological and psychiatric diseases, disorders and injuries, and the need to increase funding for research and improve patient care. PPF prepared a report of those meetings, including a summary of the key points that emerged, and recommendations about how to move forward. This report is available on our website.

Summit of neuroscience groups

One of the key recommendations of the report was to hold a national summit at which all stakeholder groups, Voluntary Health Organizations, and potential coalition members, would be convened. This meeting took place on December 12, 2007, in Toronto. This was an opportunity to get reactions to the roundtable report, and to discuss how members of a proposed "brain coalition" would be most effective in reaching the target audiences. This meeting was a major step forward, indicating that there is a willingness to work as a coalition, with a common goal.

Awareness campaign

Participants of the national summit of neuroscience groups agreed that one of the first major projects for the coalition would be to develop and launch an awareness campaign. In the summer of 2007, NeuroScience Canada's advertising agency, AMEN Creation, began developing concepts for a campaign to raise awareness about the burden of brain disorders in Canada, and the need to increase research funding. We hope to launch the campaign with our brain coalition members in the coming year.

Sponsorship of International Conferences

NeuroScience Canada is proud to have sponsored the following conferences/ activities:

- 1) The International Brain Research Organization Neuroscience School 2007 (\$5,000)
- 2) The 30th International Symposium of the *Groupe de recherche sur le système nerveux central* (\$7,000)
- 3) 2nd Annual Canadian Neuroscience Meeting (\$5,000)



"Having graduated as a neuropharmacologist before being tempted away to business, NeuroScience Canada was a natural for me. In the three years since joining the Board I've seen concrete results coming from the Brain Repair Program, as well as a compelling start to our advocacy strategy to encourage focus and resource allocation on the neurological trauma and diseases to improve the health of the nation. From these impressive foundations I believe that NeuroScience Canada will make a major contribution in the second ten vears of its work."

- Rupert Duchesne, President and CEO, Aeroplan; Chair, Public Policy and Communications Committee, NeuroScience Canada

01 - Dr. Dave Williams giving a presentation to students at Beaconsfield High School.

02 — Dr. Dave Williams with Dr. Karen Davis, Head, Division of Brain, Imaging and Behaviour-Systems Neuroscience at the Toronto Western Research Institute, and Dr. Jonathan Dostrovsky, Director of the Program in Neuroscience at the University of Toronto, following his presentation at the University of Toronto.

Brain Awareness week

Brain Awareness Week is an annual public information campaign created in 1996 by the Dana Alliance for Brain Initiatives to advance public awareness about the progress and benefits of brain research. In 2008, Brain Awareness Week took place March 10 to 16.

NeuroScience Canada collaborated with the Canadian Space Agency and astronaut Dr. Dave Williams to celebrate the 10th anniversary of the space shuttle NeuroLab. This flight was dedicated to the advancement of neuroscience research and focused on the effects of microgravity on the brain. Dr. Williams spoke at McMaster University on March 11, University of Toronto on March 26, and to students in grade 9 and 10 at his former high school, Beaconsfield High, on March 31. The purpose was to raise awareness about the important research that can be accomplished on a space shuttle mission, while highlighting neuroscience research and its relevance to all Canadians.

In addition, following last year's success, NeuroScience Canada hung forty street banners in prime locations throughout the City of Montreal. The banners, which feature our logo, website address, and the line "La Recherche Intelligente" ("Intelligent Research" in English), were on display in March and April 2008 in order to coincide with the period before and after Brain Awareness Week. We also disseminated a release to alert media about the activities being organized by Society for Neuroscience chapters across Canada to mark the week.

Our major funder for our coalition-building and awareness-raising activities is the Max Bell Foundation, which provided us with a generous gift of \$240,152. We also received \$19,000 in 2005, \$20,000 in 2006, and \$20,000 in 2007 from the Society for Neuroscience through the Canadian Association for Neuroscience.

Brain Facts

Did you know that...

• Most recent estimates state that 10 million (1 in 3) Canadians will be affected by a disease, disorder or injury of the brain at some point in their life.

50% of all Canadians – about
15 million people – have had a
brain disorder impact their family.

• Based on Health Canada data, the economic burden of neurological and psychiatric diseases, disorders and injuries is conservatively estimated at 14% of the total burden of disease, or \$22.7 billion annually.

• Based on World Health Organization data, when morbidity and disability factors are combined, brain and nervous system disorders represent an estimated 38% of the total burden of disease in Canada.





Board of Directors

HONORARY CHAIR

(NeuroScience Canada Partnership) Michael H. Wilson, PC, OC., DSL, LLD (Hon.) Canadian Ambassador to the United States (Washington)

IMMEDIATE PAST CHAIR

(May 2007-January 2008) Michael J. L. Kirby (Hon.) Former member of the Senate; Chair Mental Health Commission of Canada (Ottawa)

CHAIR

(effective January 2008) J. Anthony Boeckh, PhD Member, Audit and Finance Committee Member, Governance Committee Member, Public Policy and Communications Committee President Boeckh Capital Company Limited (Montreal)

VICE-CHAIR ADMINISTRATION

(effective May 2008) John M. Stewart, LLB Chair, Audit and Finance Committee Partner Emeritus, Toronto Office Blake, Cassels & Graydon LLP (Toronto)

VICE-CHAIR SCIENCE

David Kaplan, PhD Chair, Science Advisory Council Member, Governance Committee Member, Public Policy and Communications Committee Senior Scientist The Hospital for Sick Children;

Professor, Department of Molecular Genetics, University of Toronto *(Toronto)*

DIRECTORS

Mark R. Bruneau Senior Fellow Monitor Company Group L.P.; Chairman M'Pact Communications Inc. (Montreal)

Vincent Castellucci, PhD

Associate Vice-Dean for Research Faculty of Medicine Université de Montréal (Montreal)

Marcel Côté Member, Public Policy and Communications Committee Founding Partner SECOR (Montreal)

Rupert Duchesne

Chair, Public Policy and Communications Committee President and CEO Aeroplan (Montreal)

Inez Jabalpurwala

President and Secretary-Treasurer NeuroScience Canada Partnership and NeuroScience Canada Foundation (Montreal)

Mark Krembil President The Krembil Foundation (Toronto)

Brandt C. Louie, FCA, LLD (Hon.)

President and CEO H.Y. Louie Company Limited; Chairman and CEO London Drugs Limited (Vancouver)

Anthony G. Phillips, PhD, FRSC

Member, Public Policy and Communications Committee Co-Director, UBC Institute of Mental Health; Professor, Department of Psychiatry University of British Columbia (Vancouver)



Lawrence (Larry) Tanenbaum Chairman and CEO Kilmer Group; Chairman, Maple Leafs Sports & Entertainment Inc. (Toronto)

Allan R. Taylor, O.C., LL.D. (Hon.)

Chair, Governance Committee Retired Chairman and CEO Royal Bank of Canada (Toronto)

Franco J. Vaccarino, PhD

Principal University of Toronto at Scarborough; Vice-President University of Toronto *(Toronto)*

HONOURARY MEMBERS

Albert J. Aguayo, O.C., MD, FRSC Professor, Neurology and Neurosurgery Director, Center for Research in Neuroscience McGill University Montreal General Hospital Research Institute (Montreal)

Rick Hansen, C.C., O.B.C. President and CEO

Rick Hansen Man in Motion Foundation (Vancouver)

David L. Johnston, C.C., LLB, LLD President University of Waterloo (Waterloo)

Ronald N. Mannix, O.C. Chairman Coril Holdings

(Calgary) Heather Munroe-Blum, O.C., PhD, FRSC

Principal and Vice-Chancellor McGill University (Montreal)

Jean-Marie Poitras, O.C., O.Q. Former member of the Senate (*Quebec City*)

J. Robert S. Prichard, O.C., O.Ont, LLM, PhD (Hon.)

President and CEO Torstar Corporation; President Emeritus University of Toronto (Toronto)

Richard B. Stein, PhD

Research Professor and Professor Emeritus of Physiology and Neuroscience Centre for Neuroscience University of Alberta (Edmonton)

Barbara Turnbull President The Barbara Turnbull Foundation (Toronto) 01 — Members of the Board of Directors (from left to right): Mr. John M. Stewart, Ms. Inez Jabalpurwala, Mr. Allan R. Taylor, Mr. J. Anthony Boeckh, Dr. Vincent Castellucci, Mr. Mark Krembil, Dr. Anthony G. Phillips, Mr. Rupert Duchesne

Science Advisory Council

This Council provides regular and vital counsel on our science and research programs.

CHAIR

David Kaplan, PhD

Senior Scientist Hospital for Sick Children; Professor, Department of Molecular Genetics, University of Toronto

Inez Jabalpurwala, Ex-officio member President NeuroScience Canada

MEMBERS

M. Catherine Bushnell, PhD

Director Alan Edwards Centre for Research on Pain McGill University

Vincent Castellucci, PhD

Associate Vice-Dean for Research Faculty of Medicine Université de Montréal

Dale Corbett, MSc, PhD

Professor of Neurosciences Faculty of Medicine Memorial University of Newfoundland; Canada Research Chair in Stroke and Neuroplasticity

James L. Henry, PhD

Scientific Director Michael G. DeGroote Institute for Pain Research and Care; Professor and Chair in Central Pain McMaster University

Larry M. Jordan, MSc, PhD

Professor of Physiology Former Director, Spinal Cord Research Centre University of Manitoba

Andres M. Lozano, MD, PhD, FRCSC

Professor of Surgery and RR Tasker Chair in Functional Neurosurgery, University of Toronto; Senior Scientist, Toronto Western Research Institute; Canada Research Chair in Neuroscience

Anthony G. Phillips, PhD, FRSC Co-Director

UBC Institute of Mental Health; Professor, Department of Psychiatry University of British Columbia

Richard Riopelle, MD

Chair, Department of Neurology and Neurosurgery McGill University

Serge Rossignol, MD, PhD

Director, Multidisciplinary Team on Locomotor Rehabilitation (CIHR); Canada Research Chair on the Spinal Cord Université de Montréal

Guy Rouleau, MD, PhD, FRCP (C)

Professor, Department of Medicine Université de Montréal; Director, Centre for the Study of Brain Diseases Centre hospitalier de l'Université de Montréal; Canada Research Chair in Genetics of the Nervous System

James T. Rutka, MD, PhD, FRCSC, FACS, FAAP

Professor and Chair Division of Neurosurgery University of Toronto; Co-Director and Principal Investigator The Sonia and Arthur Labatt Brain Tumour Research Centre The Hospital for Sick Children

Richard B. Stein, PhD

Research Professor and Professor Emeritus of Physiology and Neuroscience Centre for Neuroscience University of Alberta

International Science Advisory Council

This Council provides an international perspective on our science and research programs. Its participation in our Brain Repair Program review process enables us to benchmark the projects we fund with global standards of excellence.

Albert J. Aguayo, O.C., MD, FRSC Former President

International Brain Research Organization (Montreal)

Larry Benowitz, PhD

Director, Laboratories for Neuroscience Research in Neurosurgery Children's Hospital (*Boston*); Associate Professor of Neurosurgery (Neuroscience) Harvard Medical School (*Boston, Massachusetts*)

Gary E. Landreth, PhD

Professor of Neurosciences and Neurology Alzheimer Research Laboratory Case Western Reserve University School of Medicine (Cleveland, Ohio)

Lorne M. Mendell, PhD

Distinguished Professor Department of Neurobiology and Behaviour SUNY at Stony Brook (Stony Brook, New York)

Alain Privat, MD, PhD

Director, Spinal Cord Team Institut des Neurosciences (Montpellier, France)

Donald T. Stuss, PhD, FRSC, O.Ont.

Professor of Psychology and Medicine Vice-President Research and Academic Education University of Toronto; Director, The Rotman Research Institute; The Reva James Leeds Chair in Neuroscience and Research Leadership Baycrest Centre for Geriatric Care

Franco J. Vaccarino, PhD

Principal University of Toronto at Scarborough; Vice-President University of Toronto

Samuel Weiss, PhD

Director Hotchkiss Brain Institute; Professor Departments of Cell Biology and Anatomy & Pharmacology and Therapeutics University of Calgary

Peter R. Rapp, PhD

Mount Sinai Professor of Neuroscience Kastor Neurobiology of Aging Laboratories Mount Sinai School of Medicine (New York, New York)

Scott R. Whittemore, PhD

Professor and Vice-Chairman for Research Department of Neurological Surgery; Henry D. Garretson Endowed Chair in Spinal Cord Injury Research; Scientific Director Kentucky Spinal Cord Injury Research Center University of Louisville School of Medicine (Louisville, Kentucky)

Thanking our supporters across the country

Every year, various organizations generously support NeuroScience Canada's world-class neuroscience research program. We gratefully acknowledge the following individuals, corporations, foundations and government agencies.

We thank in particular:

Our lead Campaign funders

An **anonymous donor** (now deceased), who enabled us to launch the National Brain Repair Fund Campaign and Alberta Initiative with a **\$1.5-million challenge gift**.

The **WB Family Foundation** (T. Robert Beamish Family), which enabled us to launch our second Brain Repair Program competition with a **\$1.5-million gift**.

The Canadian Institutes of Health Research and its Institute of Neurosciences, Mental Health and Addiction, and Institute of Aging, which provided \$1.5 million for our first Brain Repair Program competition, and the Institute of Aging, which has partnered with us to provide an additional \$500,000 toward our second Brain Repair Program competition.

The **Ontario Neurotrauma Foundation**, our provincial partner, which provided a total of **\$600,000** for our Brain Repair Program.

Individuals and private Foundations

\$500,000 + (cumulative giving)

Max Bell Foundation

\$250,000 - \$499,999

The John Dobson Foundation The J.W. McConnell Family Foundation R. Howard Webster Foundation

\$100,000 - \$249,999

Boeckh Family

David and Dorothy Lam Foundation The Tong and Geraldine Louie Family Foundation Ronald N. Mannix

Allan R. and Shirley Taylor The Barbara Turnbull Foundation

Michael H. Wilson

\$50,000 - \$99,999

Boardwalk Charitable Trust Fund Brian D. and Joannah Lawson The Krembil Foundation

Corporations

\$750,000 + (cumulative giving)



\$500,000



\$300,000



\$250,000



\$100,000 - \$249,999

BMO Financial Group Great-West Life, London Life and Canada Life Magna International Inc. Power Corporation of Canada

\$50,000 - \$99,999

BP Foundation Inc. Brookfield Foundation Mackenzie Financial Corporation TD Bank Financial Group Neuroscience Canada thanks all other individuals, foundations and corporations that have generously contributed to our National Brain Repair Fund Campaign and to our public awareness activities.

The following list represents those donors whose cumulative giving is at or above \$500.

Achber, Vernon The Adair Family Foundation Aeroplan Aguayo, Albert J. Alpacan Ventures AstraZeneca Canada Inc. ATCO Ltd. BP Foundation Inc. Baillie, James C. Barrington Petroleum Ltd. Bayer Inc. Beddis, Ian D. Bell Canada Enterprises Bhayana Management Blundell, William The Graham Boeckh Foundation Bois, Pierre Borden Ladner Gervais The R.P. Bratty Charitable Foundation The Marjorie and Gerald Bronfman Foundation Bull, Warren C. ** The Calgary Foundation/David and Leslie Bissett Fund Canadian Council of Christians and Jews Canadian Insurance Accountants Association Canadian Pensions and Benefits Institute, Ontario Regional Council Canadian Meteorological Centre (Social Committee), Environment Canada Castellucci, Vincent Cogeco Colangelo, Johanne Colangelo, Lina Corbertex Corporation Côté, Marcel Crown Life Insurance Company Culotti, Joseph Cumming, Tom and Mary Dion, Durrell & Associates Inc. Mitzi & Mel Dobrin Family Foundation Dorrington, Keith J.** Falcon Lumber Ltd. Fraser, Anne Gagnier, Jean-Marcel Govain, Royal A Grichting, Patty and Reinhard Guest, Gowan Harris, Cathy Harvie, Donald** Haskayne, Richard F.

Hotchkiss, Harley N. Hyndman, Lou D. Imasco Limited, Imperial Tobacco and Pharmaprix/Shoppers Drug Mart Jabalpurwala, Inez Jabalpurwala, Kaizer E. Jackman Foundation The Norman and Margaret Jewison Charitable Foundation Johnston, David Kaplan, Charles The Henry and Berenice Kaufmann Foundation Keating, John Lebrun, Manon William F. Lede Family Foundation The Alvin and Mona Libin Foundation Lind, Philip B. Lippman Leebosh April London Drugs Foundation Louie, Brandt C. Love, G. Donald** MacKenzie, Colin Mackenzie, Hector Mackie, James Manitoba Medical Students Association McCaig, M. Ann McLachlin, Ian Van C. Melcor Developments Ltd. Merck Frosst Canada Ltd. Mississauga South Federal Progressive Conservative Association Munroe-Blum, Heather Newall, J.E. (Ted) O/A Budo Theatre Pannitti. Louise Peters, Robert G. Phillips, Anthony G. **RBC** Investments The Real Canadian Superstore Robb, Christopher J. Rothney, Bruce M. Rygiel, Edward K. SGI Saskatchewan Wheat Pool SaskTel TelCare Savard, Guy The Seagram Company Ltd. Frank J. Seger Holdings Seger, Marianne St. Joseph's Healthcare Foundation Stein. Richard B. Stewart, John M Stripp, Bitten Tavender, Carolyn and David

Theanon Charitable Foundation The Toronto Star Toronto Dominion Centre/The Cadillac Fairview Corporation Limited Torstar Corporation TransCanada Pipelines Ltd. Trimac Corporation The William and Nancy Turner Foundation, UBS Bank (Canada) United Way Toronto WestJet George Weston Limited Wong, Albert Wynne-Edwards, Hugh Younger, Patricia ** deceased

We also extend a special thank you to our donors who made gifts to honour the memory of the following individuals:

Daniel Bogorad Milton Jay Brown Warren C. Bull Rocky Colangelo Mme Gagné Brian R.B. Magee Vincenzo Maiorano Greg Tucker Hubert van Tol (Dr. Hubert van Tol Fund) John Joseph Waldron

We wish to thank the following funders and partners for providing in-kind and other invaluable support:

Allon Therapeutics Inc. AMEN Creation Blake, Cassels & Graydon LLP Canada Economic Development for Quebec Regions Canadian Association for Neuroscience Society for Neuroscience Thomas C. MacMillan McGill University Health Centre

We make every effort to ensure the accuracy of this list. If we have made any errors, please accept our apologies.

Photos credits:

NeuroScience Canada (pages 6 et 13); Owen Egan (pages 3 et 12); Charles Hope Photography, courtesy of the Faculty of Medicine, University of Calgary (page 7); University of Alberta (page 8); CIHR-Institute of Neuroscience, Mental Health and Addiction (page 11 photo #1); Conference Board of Canada (page 11 photo #2); Women's Executive Network (page 11 photo #3); Rob Teteruck (page 14)

2007 Partnership and Foundation financial report

.

.

NeuroScience Canada Combined Financial Statements

Complied Financial Statements			For the year ended		
At December 31	2007 \$	2006 \$	December 31	2007 \$	2006 \$
Assets <u>Current Assets</u> Cash and cash equivalents	1 104 287	125 139	Revenues Restricted contributions General contributions	1 667 222	1 466 785 34 000
Temporary investments Sundry receivables Deposits	678 000 44 846 45 846	2 215 149 66 639 74 598	Add:	1 667 222	1 500 785
	1 872 979	2 481 525	<u>Add.</u> Deferred amount	461 380	679 346
Capital assets Investments	2 178 563 400	2 765 751		2 128 602	2 180 131
	2 438 557	2 485 041	Interest and other income	54 731	71 972
				2 183 333	2 252 103
Liabilities Current liabilities			Expenditures		
Accounts payable and accrued liabilities Current portion	32 522	12 038	Grants and awards Operating expenses	1 738 752 611 911	1 645 810 494 108
of program commitments	1 485 256	1 946 636	Amortization	908	271
	1 517 778	1 958 674		2 351 571	2 140 189
Net asset Unrestricted net asset	920 779	526 367	<u>Excess of revenues</u> <u>over expenditures</u> (expenditures over revenues)		
	2 438 557	2 485 041	for the year	(168 238)	111 914

The financial statements of NCP - NeuroScience Canada Partnership and NCF - NeuroScience Canada Foundation are audited by KPMG LLP and are available upon request.

.