



CIHR IRSC



## *Portraits of Partnerships*

**CANADIAN INSTITUTES OF HEALTH RESEARCH  
ANNUAL REPORT 2007-2008**



Canadian Institutes  
of Health Research

Instituts de recherche  
en santé du Canada

Canada

**Cover** (Clockwise from top left):

Dr. Dawn Martin-Hill  
Dr. Anne Snowdon and Ms. Rhonda McNally  
Dr. Frederick Kibenge  
Dr. Bryan Kolb

**Opposite** (Clockwise from top left):

Dr. Aled Edwards  
Dr. Helen Nichol  
Ms. Shirley Dzogan

All people profiled in this annual report have agreed to their appearance in it and approved their individual stories.

**Canadian Institutes of Health Research**

160 Elgin Street, 9<sup>th</sup> Floor  
Address Locator 4809A  
Ottawa, Ontario K1A 0W9 Canada  
[www.cihr-irsc.gc.ca](http://www.cihr-irsc.gc.ca)

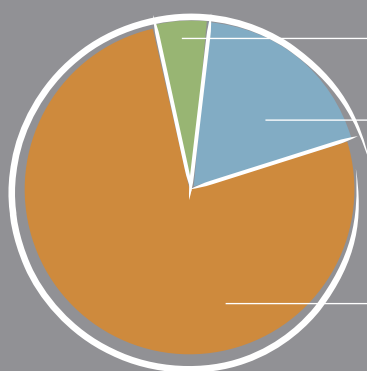
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# *Portraits of Partnerships*



## 2007-08 Expenditures by Research Area

(in millions of dollars)



<b>Operational Requirements</b>	<b>5%</b>
Administration	55.3
<b>Flow-Through Funds</b>	<b>19%</b>
Networks of Centres of Excellence	27.5
Canada Research Chairs	86.5
Centres of Excellence for Commercialization and Research	73.5
<b>Research</b>	<b>76%</b>
Open Competitions	516.5
Strategic Initiatives	210.8
Gairdner Foundation Grant	20
Institute Support Grants	13
Knowledge Translation	8.2

## Total

1,011.4 100%

Note: Figures do not include refunds of previous years' grants and awards.

## Breakdown by Strategic Outcome

(in millions of dollars)

Health research	547.8	54%
Health researchers in innovative environments	317.4	32%
Transforming health research into action	143.1	14%
<b>TOTAL</b>	<b>1,008.3</b>	<b>100%</b>



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## *Message from the Acting President*

**Partnerships give life to health research.** They stimulate new ways of thinking, connect policy makers and practitioners with researchers to put research results to use and make the most out of limited resources. Partnerships are at the core of CIHR's success; our partners are our family.



*Pierre Chartrand, PhD*

Through our partnerships, CIHR has been able to draw upon a deep pool of expertise within the research community, the voluntary sector and policy makers. Our partners have contributed valuable and unique perspectives and have played a key role in shaping CIHR's activities.

In this report, you will read about some of the innovative and exciting initiatives that CIHR and our partners are undertaking together. The range of our partnerships is large, spanning the Canadian landscape and beyond. Universities, the voluntary health sector, other research funders, governments, the private sector, international bodies and Canadians from all walks of life are our valued collaborators.

The ultimate purpose of these partnerships is to further the work of nearly 12,000 researchers and trainees whom CIHR is so proud to support. Ultimately, we are all partners with these researchers and trainees, joined in our commitment to maintaining and expanding Canada's worldwide reputation for excellence in health research.

I would like to pay tribute to the vital role played in that reputation by CIHR's inaugural President, Dr. Alan Bernstein. His leadership, vision and commitment to excellence have helped CIHR to earn international acclaim and have contributed to the ability of Canadian researchers to improve the health of Canadians and of people around the world.

Today, as CIHR looks to the future, our hopes are for even stronger partnerships and collaboration. Partnerships are one of the four key principles guiding the Government of Canada's Science and Technology Strategy, which cites partnerships as essential to leveraging Canadian efforts into world-class successes and to accelerating the pace of discovery and commercialization in Canada. Through partnerships, the unique capabilities, interests and resources of various partners can be brought together to achieve better outcomes.

Those partners include CIHR's fellow research funding agencies. As stressed in the Government of Canada's Science and Technology Strategy, we are working toward building stronger links with the Natural Sciences and Engineering Research Council (NSERC), the Social Sciences and Humanities Research Council (SSHRC) and the Canada Foundation for Innovation (CFI). Collaboration among our agencies will enable us to support cross-cutting, multidisciplinary research initiatives that address important scientific opportunities and problems that matter to Canadians.

We are also turning our attention to *Blueprint*, CIHR's Strategic Plan to carry it through 2008 and updating it for the coming years. CIHR's Governing Council has approved three broad strategies for achieving our mandate: capturing the excellence in the Canadian health research community; addressing research priorities to improve the health of Canadians, support effective health services and products and strengthen our health-care system; and translating knowledge into benefits for health and the economy. Our partners will be of central importance in implementing these strategies.

It gives me great pleasure to welcome Dr. Alain Beaudet, whose appointment as President of CIHR was announced in March 2008. Dr. Beaudet's term commences July 1, 2008. I thank all of our partners for their support during my tenure as Acting President and I look forward to continuing to work with you after Dr. Beaudet's arrival, as Vice-President of Research of CIHR.



PIERRE CHARTRAND, PHD  
ACTING PRESIDENT  
CANADIAN INSTITUTES OF HEALTH RESEARCH

# Introduction

**Partnerships are at the core of CIHR.** CIHR partners with the entire research community to produce results that matter to Canadians – new ways to prevent, diagnose and treat disease, so that we are all healthier; better ways to operate our health-care system, so that we, our families and our friends can get the care we need, where and when we need it; and increased economic growth, as the results of discoveries in the laboratory are translated into new services and products for the marketplace and jobs for highly qualified personnel, and as research contributes to a healthy, productive population.



CIHR collaborates with its partners to create opportunities for researchers, through initiatives such as the Small Health Organizations Partnership Program, which has supported Mark Erwin's transition from a chiropractor to a biomedical researcher – Dr. Erwin is using a different approach but with the same goal, helping his patients.

CIHR collaborates with its partners to translate the results of health research into practical policies and programs, such as the Injury Prevention Initiative, which is giving Yvan Chalifour and the Canadian Red Cross the research evidence to ensure its programs are meeting needs.

It collaborates with its partners to engage Canadians in health research, so that community members like Shirley Dzogan can take part in the peer review process, bringing to it her love of and fascination for the research going on across Canada – research that, she says, makes her proud to be Canadian.

CIHR is proud to present, in these pages, portraits of the people who, by collaborating with CIHR, are helping to realize the potential of health research, potential that will improve the lives of Canadians and of people throughout the world.



*Dr. Bryan Kolb*

*Partnerships with Universities*

**CIHR and Canada's universities work together** to support and promote the work of Canada's health researchers. It's a synergistic partnership – CIHR would have no researchers to fund if universities did not provide them with the facilities and students to help them in their work. At the same time, universities depend on the operating funds their researchers receive from CIHR and from other funding sources to use these facilities, to support their teaching activities with ongoing research and to enhance students' learning experiences.

### THE RESEARCH FUNDING RIPPLE EFFECT

Thirty years ago, Bryan Kolb was a rising star at McGill, a large university in a big city, with abundant resources and funding opportunities. But he didn't like big-city living and, a Calgarian born and bred, he wanted to move back West. So he chose to move to a centre with a small university that aspired to big things – the University of Lethbridge, in Southern Alberta.

Dr. Kolb is renowned as one of the founding fathers of behavioural neuroscience. The author of five books, including two textbooks, with his frequent collaborator and colleague at Lethbridge, Dr. Ian Whishaw, Dr. Kolb's research has focused on how structural changes in the cerebral cortex – because of factors such as hormones, drug use, or stroke – affect behaviour. And, all of this research has been done in Lethbridge.

"If your research is good, you can do it anywhere," he says. "I haven't been penalized at all."

In fact, far from being penalized, Dr. Kolb has helped to create a centre of excellence in behavioural neuroscience at Lethbridge. There is now a building, with 160 people working in it, dedicated to behavioural neuroscience. And every year, experts from around the world come to Lethbridge for meetings and presentations.

Life sciences, says Dr. Kolb, have gone molecular in the past two decades. And molecular science requires large groups of people and a lot of very expensive equipment. But this is not the only approach, Dr. Kolb adds.

"I don't believe all the questions we need to ask are molecular," he says. "A lot of innovations come from smaller labs, and enormous numbers of excellent people get their start in the smaller universities."

Smaller universities such as Lethbridge are able to support more of those excellent people now. CIHR's expanded mandate has resulted in more researchers from smaller universities, those without medical schools, being eligible for funding. This has resulted in new partnerships with universities across the country, from the University of Northern British Columbia to the University of Prince Edward Island. The University of Lethbridge, for example, received just over \$500,000 in the last four years of the Medical Research Council, CIHR's predecessor. Since CIHR's creation, it has received nearly \$3.5 million. But, for Dennis Fitzpatrick, Vice-President (Research) at the University of Lethbridge, it's more than simply increased CIHR funding.

"It's a complex story," he says. "CIHR is at the table each and every year, providing core operating grants. And this is incredibly important in small institutions. If you don't have CIHR funding, you're not going to get Alberta Cancer Board funding or Heart and Stroke Foundation funding, or any of the other sources of health research funding in Canada."



*"I don't believe all the questions we need to ask are molecular. A lot of innovations come from smaller labs, and enormous numbers of excellent people get their start in the smaller universities."*

**Dr. Bryan Kolb**

*“The saddest thing that could happen is that we do all this work and we don’t come out with strong partnerships between community organizations, universities and students.”*

Dr. Dawn Martin-Hill

## **SERVING OFFICIAL LANGUAGE MINORITY COMMUNITIES**

Geneviève Rail knows that teens think differently about health than adults. The University of Ottawa researcher has found that these youth tend to think of healthy as synonymous with being thin and having “good” bodies – even if that means unhealthy habits like excessive dieting or taking steroids.

But what about youth living in a minority situation, such as francophones living in anglophone environments, or vice-versa? Do they view health the same way? So far, there is some evidence that being in a minority situation can affect how you experience health or illness, how you access health services and how you experience health care. But not many researchers are equipped for the challenges of health research in these official language minority communities.

“There’s not a whole lot of health research tradition in these communities,” says Dr. Rail. So she was asked to organize a CIHR Summer Institute that will focus on the issue of health within official language minority communities, to be held in partnership with the University of Ottawa, in June 2008.

All 13 of CIHR’s Institutes are participating in the partnership with the University of Ottawa for the Summer Institute. Participants will have a unique learning opportunity to interact with expert researchers and community leaders and to explore the challenges of planning and carrying out research that is rooted in the cultural context of official language minority communities.

Dr. Rail is looking forward to the Summer Institute. As a researcher, she has been involved in projects focusing on health within Franco-Ontarian communities. While Vice-Dean of Research in the University of Ottawa’s Faculty of Health Sciences, she became used to supporting young researchers.

“That’s what I like to do,” she says. “I help young researchers to write research grants, research proposals.”



Dr. Geneviève Rail

The Summer Institute will favour such training and, ultimately, the creation and transfer of new health knowledge for the well-being of official language minority communities.

## **STRENGTHENING THE TIES OF ABORIGINAL HEALTH RESEARCH**

Throughout the world of Aboriginal health research, in Australia, New Zealand and the United States, researchers are focusing on traditional medicine; Canada is beginning to move in this direction. Work in this area has been slowed by a lack of people qualified to peer review the research into this and other areas of traditional medicine, says Dawn Martin-Hill, who conducts such research herself.

Finding these people is one of the ways that the Aboriginal Health Research Networks Secretariat (AHRNetS), a central coordinating body for the nine Network Environments for Aboriginal Health Research (NEAHRs) that are located in universities across the country, can contribute to the strength of Aboriginal health research in Canada. NEAHRs, an initiative of CIHR’s Institute of Aboriginal Peoples’ Health, are a partnership between CIHR, university-based researchers and Aboriginal communities and organizations to conduct research on issues important to these communities and to train graduate students who will go on to become Aboriginal health researchers.

Dr. Martin-Hill, a Mohawk and the Academic Director of the Indigenous Studies Program at Hamilton’s McMaster University, is one of the principal investigators who together are leading the Indigenous Health Research Development Program (IHRDP), one of the nine NEAHRs. IHRDP is a collaboration of five geographically diverse Ontario-based universities including McMaster University, the University of Toronto, Trent University, the Northern Ontario School of Medicine and Lakehead University. This NEAHR is unique in that its main office is located on the Six Nations Reserve, near Brantford, Ontario.



Dr. Dawn Martin-Hill



This location has helped to build important ties with the Aboriginal community, an essential element in the NEAHR vision.

While each of the NEAHRs has its own priorities and research areas, they are also working together

to develop what Dr. Martin-Hill calls “enclaves of interest”. Their goal is to create long-term relationships so that, if funding for the NEAHRs ends, the research and research relationships will continue.

## FACTS AND FIGURES

Number of institutions<sup>1</sup> receiving funds from CIHR, 2000-01:

69

Number of institutions<sup>1</sup> receiving funds from CIHR, 2007-08:

89

CIHR investment<sup>2</sup> in Aboriginal health research, 2000-01:

\$2 million

CIHR investment<sup>2</sup> in Aboriginal health research, 2007-08:

\$29.9 million

<sup>1</sup>Excludes institutions paid through Direct Payments.

<sup>2</sup>Estimate based on a keyword search.





*Dr. Mark Erwin*

*Partnerships with the Voluntary Sector*

**As organizations working directly with their communities,** voluntary health organizations can shape research so that it meets the needs of those who use it and help to ensure that the results of research are applied to those who can benefit most. They bring the voices of their communities to CIHR and take CIHR's voice out to their communities.

## **LOOKING AT BACK PAIN FROM THE INSIDE OUT: SUPPORTING SMALL HEALTH ORGANIZATIONS**

*“SHOPP has been tremendously successful in providing opportunities to small, historically under-represented professions. It has fostered a true research culture.”*

**Dr. Allan Gotlib**  
Director of Research  
Programs  
CCRF



So what's a chiropractor, an expert in “cracking” spines, doing in a lab at Toronto's University Health Network (UHN) looking at proteins and cells?

If it's Mark Erwin, one of the few chiropractors in North America conducting biomedical research, then he's leading a whole new approach to degenerative disc disease.

Degenerative disc disease is one of the most common causes of lower back pain – especially as people age. There's no effective treatment for it. Dr. Erwin's work focuses on cells – called notochord cells – that help build our discs. Dogs and people both have them, but lose them with age – except for some mixed-breed dogs who keep them and who don't develop degenerative disc disease. Dr. Erwin is studying what is unique about the cells that certain dogs keep and how we can mimic the presence of these cells in humans, thus developing a novel treatment for or perhaps even preventing degenerative disc disease.

“I'm trying to learn how to do what Mother Nature does in the first place,” he says.

To help him in his work, he has assembled a research team with expertise in rheumatology, orthopedics, neurosurgery, biomedical engineering, and cell and molecular biology. Bringing this multidisciplinary approach to his work provides broad input and valuable perspectives.

Dr. Erwin is quick to say that without the support he received through CIHR's Small Health Organizations Partnership Program (SHOPP), he'd never have been able to move from the chiropractor's office to the lab. That support allowed him to go back to school and get his PhD and supported him through his training. Now he's hoping to see that support continue as a New Investigator, the first stage in leading his own lab.

SHOPP fosters partnership opportunities with small health charities and not-for-profit organizations with modest health research funding capacity, like the Canadian Chiropractic Research Foundation (CCRF), the source of Dr. Erwin's support. These partnerships provide support, half from CIHR and half from member organizations, for students at the master's and doctoral levels, as well as for post-doctoral fellows and New Investigators.

Dr. Erwin, who made a significant diversion from clinical practice to earn his PhD, went to the lab to find a solution for his patients. He continues to practice (although at a reduced capacity) and says that his ultimate goal is to see the results of his research benefit patients. He is currently making the transition into full-time research but would like to maintain a clinical presence, ideally as a clinician-scientist within a broader multidisciplinary environment such as a hospital-based spine clinic, where he could continue with his basic science research.

“My work really is not bench to bedside,” he says, referring to the standard research trajectory. “My research starts with patients and is really better described as ‘bedside, to bench and back to bedside.’”

*“We need more science. We need to measure what we do, find out what’s effective, so that we can improve how we reach people.”*

Mr. Yvan Chalifour

## **SOMETHING ABOUT FOOTBALL...**

It’s tough to be a professional football player. Every week, all season long, you subject your body to punishment most of us can only imagine. But now it appears as though the punishment may last for a lifetime – and a lifetime that’s considerably shortened at that.



Dr. Angela Genge

The culprit is amyotrophic lateral sclerosis, or ALS – more commonly known as Lou Gehrig’s disease. This neurodegenerative disease is progressive. Sufferers experience gradual atrophy of their muscles, over time losing the ability to walk, talk or breathe on their own. Paralysis and then death follow, usually within two-to-five years of diagnosis. And while Lou Gehrig played baseball, the disease seems to be more common among professional football players.

“There *appears* to be an increased incidence of the disease in CFL football players,” says Angela Genge, Director of Montreal’s ALS clinic and physician to ex-Montreal Alouette Tony Proudfoot, who was diagnosed with ALS in 2007. Eight former CFL players out of 15,000 have been diagnosed with the disease, compared to two in every 100,000 in the general population.

Dr. Genge is conducting a study that will look at potential risk factors among professional football players – including the level of physical activity, the number of concussions they experience and the type of field they play on – and compare them with athletes from other sports. She will also look at all ALS patients in Quebec to look for commonalities in their physical activity and involvement in sports.

“If we can do this in enough detail,” she says, “either we will see a pattern or someone looking from a distance will recognize a pattern.”

The ALS Society of Canada, Muscular Dystrophy Canada and CIHR have invested approximately \$9.3 million in research through the Neuromuscular Research Partnership (NRP) Program between 2000-01 and 2007-08. CIHR contributed an additional \$10.8 million between 2000-01 and 2007-08 to support related research, through its general funding programs.

The Neuromuscular Research Partnership was one of CIHR’s earliest partnership agreements.

CIHR and the ALS Society support researchers such as Janice Robertson and Avi Chakrabartty of the University of Toronto who, in 2007, developed the first antibody that detects the only known cause of ALS. Their discovery could lead to new techniques for diagnosing this cause of ALS sooner, as well as holding diagnostic value for other types of ALS. The antibody could also help in efforts to develop new treatments for the disease.

## **PARTNERING TO PREVENT INJURIES**

Sixty years ago, drowning was a leading cause of injury death in Canada. In response, the Canadian Red Cross launched its first swimming and water safety program.

However, after many years of teaching Canadians to swim, people were still drowning. The Red Cross needed research to better target and tailor drowning prevention programs. In 1991, it entered into a partnership to conduct that research and now, evidence-based training and drowning prevention programs have made a significant difference in reducing the number of drowning deaths.

Today, the Red Cross is focusing more broadly on injury prevention. And, knowing the importance of research to its success, the Red Cross has entered into its first-ever partnership with CIHR, on injury prevention.

Injuries, both intentional and unintentional, cost Canadians more than \$14 billion each year. CIHR has brought together partners from all levels of government as well as not-for-profit organizations to support a strategic initiative on the prevention and treatment of intentional and unintentional injuries. The initiative will support multidisciplinary teams of established researchers and trainees. Knowledge translation – putting research findings to work – will play an important role in every grant awarded.

“Partnering with CIHR gives us an opportunity to leverage the little funding we have for research,” says



Mr. Yvan Chalifour

Yvan Chalifour, Director of Injury Prevention at the Red Cross. “Even more, partnering with CIHR allows us to benefit from its research structures – its peer review system and its ties to researchers and to universities – as well as allowing us to share our drowning research expertise.”

Partnerships such as this one also help not-for-profit organizations grappling with where best to use their scarce funds.

“Putting money into research to better help people in the future means taking away money that could

be used to help people today,” says Mr. Chalifour. “It’s a real dilemma for us and for all not-for-profit organizations. Partnerships help resolve the dilemma.”

Injuries span a multitude of areas. “The injury prevention partnership brings the Red Cross together with other organizations across Canada who are also focused on injury prevention,” notes Mr. Chalifour. “To sit with other groups who have other interests, you get the big picture,” he adds.

## FACTS AND FIGURES

Approximate number of CIHR partners from the voluntary sector, 2000-01:

30

Approximate number of CIHR partners from the voluntary sector, 2007-08:

130

Number of partners that supported SHOPP grants, 2007-08:

18

Number of participants in the CIHR-Partner Injury Workshop, June 2007:

64





*Dr. Helen Nichol*

*Partnerships with Funding Agencies*



**Researchers do not work in isolation.** In fact, some of the best scientific advancements are born of innovative collaborations that encourage researchers to think outside of their fields. Why should research funders be any different? CIHR has been forging partnerships with other funding agencies to support cutting-edge research collaborations, break down barriers to funding and make Canadian research competitive on the international stage.

## SYNCHRONIZING RESEARCH RESOURCES

Canadian researchers are shining a light, a very bright light, on brain diseases. And Canada's funding agencies are working together to make this happen.

Neurodegenerative diseases like Alzheimer's and Parkinson's have long been associated with abnormal accumulations of toxic metals in the brain. But which metals are involved, where they accumulate and what role they play in disease remain unanswered questions. Helen Nichol, a researcher at the University of Saskatchewan, is using some of the most powerful imaging technology in the world to measure and map the location of these metals in human and rodent brains.

Dr. Nichol is capturing this information with a synchrotron, a machine that uses beams of intense light to analyze the structure and composition of a tissue sample. The synchrotron allows researchers to see what something looks like at the atomic level. This technology is immensely useful in helping health researchers understand the physical changes that occur in the body during disease and identify possible targets for treatment.

A synchrotron is like a microscope the size of a football field. It is massive consisting of a central particle accelerator, with spoke-like extensions known as beam lines. Each beam line, which can be kilometres in length, terminates in an end-station, a laboratory where researchers like Dr. Nichol and her team analyze information generated by the synchrotron.

Synchrotrons are powerful tools with the potential to advance many areas of science. Researchers can harness this machine to monitor gene activity in living animals or analyze the impact of environmental contaminants. Some day, it may be the key to better, safer x-rays for patients. In her own work, Dr. Nichol has used the synchrotron to show that copper levels in human brain tissue play an important role in a motor-neuron disease similar to ALS (Lou Gehrig's disease).

Unfortunately, not every health research institution has one of these massive machines at its disposal. The synchrotron at the Saskatoon-based Canadian Light Source (CLS) Centre cost \$173.5 million to build and is one of only 42 such facilities in the world. This means that there is huge competition between researchers to get "beam time".

CIHR, the Natural Sciences and Engineering Research Council of Canada (NSERC) and the National Research Council of Canada (NRC) have been working together to help more Canadian researchers take advantage of this terrific tool. In addition to providing funds for the construction of new beam lines at the facility, the collaboration has helped researchers from across the country use the CLS synchrotron, either in person or by sending in samples for analysis.

"The synchrotron used to just be the plaything of physicists and chemists, but health researchers are really taking over," says Dr. Nichol.



*"The real advantage of the synchrotron is that it allows you to look at tissues in a whole new way. Sometimes you'll see something really unexpected."*

**Dr. Helen Nichol**

*“CHRP has allowed me to team up with researchers who, by themselves, would never have applied for CIHR funding.”*

Dr. Antonio Nanci

## COOPERATION AT THE NANOSCALE LEVEL

Antonio Nanci, a researcher at the University of Montreal is trying to speak to cells on a level they can understand – the nanoscale level. And he’s getting help through the Collaborative Health Research Projects (CHRP) program, a joint initiative of CIHR and NSERC.



*Dr. Antonio Nanci*

“A cell cannot see something that is larger than itself,” explains Dr. Nanci.

Whether it’s an artificial tooth or a hip replacement, any man-made device that you implant in a person’s body has to interact with cells. Normally, the interaction goes well and the implant is successful. But sometimes problems arise and disrupt the delicate relationship between the body’s cells and the implant. Dr. Nanci and his colleagues have designed man-made materials that form healthier connections with the human body.

In a process called nanotexturing, Dr. Nanci and his team use chemicals to create tiny pore-like holes in the materials used to make implants. For reasons that are still unclear, these submicroscopic holes have a big impact on the way some cells behave. Bone cells, for example, thrive on the porous surfaces, suggesting that these special implants could actually promote the growth of healthy tissue. Bacteria cells, on the other hand, do not like to grow on the textured surfaces, so nanotexturing could be used to create implants that are less likely to sustain infection.

“The process we are studying, the interaction between cells and surfaces, is universal,” says Dr. Nanci. So while his research focuses on creating nanotextured surfaces that will promote healthy healing around dental implants, the same technique could work for many types of implants, such as coronary artery stents.

This innovative project was made possible through the collaboration of researchers from multiple disciplines. With support from CHRP, Dr. Nanci, who has a background in cell biology, teamed up with combinatorial chemist Dr. James Wuest and surface physicist Dr. Frederico Rosei.

The goal of CHRP is to encourage researchers in the NSERC community to lend their knowledge and expertise to health research. In 2007, CIHR and NSERC signed an agreement to provide a combined \$41.4 million in grants through CHRP over the next five years.

## SIMPLIFYING THE FUNDING PROCESS

Research cannot happen without funding. Before researchers can actually do research, they have to spend time drafting proposals and filing applications to funding organizations like CIHR. Quite frequently, they must submit applications to more than one funding agency to get the financial support they need. This process is a large administrative obstacle and slows down the research process. The Common CV (CCV) aims to cut down on the time and paperwork required to fund researchers.

Launched in July 2002, CCV is a web-based program that allows researchers to create standardized information profiles and submit them to multiple funding agencies, reducing the need to produce the same information over and over again. In 2007, CIHR, SSHRC, NSERC and CANTOR (Quebec’s three research funding agencies) signed an agreement to expand their commitment to CCV. As part of this renewed commitment, the funding agencies will work to improve the CCV technology and better meet the needs of each subscribing agency.

Currently, there are more than 50,000 researchers using CCV and 17 funding organizations participating in the program. The organizations come together in the Forum of Health Research Funders, a partnership representing Canada’s major health research funding organizations that is helping to guide the development of CCV. Researchers inputting information into CCV can specify which funding organizations can access their data. Not only does this tool streamline the funding process, it also has the potential to facilitate information sharing between funding agencies and research collaborations.

## FACTS AND FIGURES

Approximate number of formal funding collaborations in 2007-08 involving CIHR and NSERC and/or SSHRC:

30

CIHR investment in the Canadian Light Source Program between 2003-04 and 2008-09:

\$10.5 million

Number of grants supported through CHRP, 2007-08:

51

CIHR investment in grants funded through CHRP, 2007-08:

\$3 million





*Ms. Gail Paech*

*Partnerships with Governments*

**CIHR's primary goal is a simple one:** Make Canada a healthier place to live. But funding the best and the brightest researchers is not enough – we need to ensure that the results of their research are put into action. To do so, we work alongside Canada's decision makers and consider the challenges and resources unique to each region of the country. CIHR partnerships are making things happen at all levels of government, from coast to coast.

## HEALTH RESEARCHERS ON CALL



*“We don’t want to use old technology or old evidence to build solutions for the future.”*

Ms. Gail Paech

Gail Paech, the Assistant Deputy Minister responsible for e-health in the province of Ontario, is facing a big challenge. Ms. Paech is trying to help Ontario meet its goal of bringing electronic health records (EHRs) to the province by 2015. To help get her team up to speed on the latest research on EHRs, she came to CIHR.

Part of CIHR's mission is to smooth the long and complicated pathway from scientific discovery to applied technology by putting health research knowledge into action as quickly as possible.

A new CIHR program called Evidence on Tap is partnering researchers with policy makers in need of good research. The initiative brings together Canada's leading experts on current health research issues to form knowledge “dream teams”. These teams of experts are then made available to decision makers at various levels of government to provide evidence to guide them in establishing health policy, through day-long knowledge exchanges known as Best Brain Consultations.

Recently, Ms. Paech organized a Best Brain Consultation for her team. CIHR brought in a group of researchers with knowledge of various aspects of e-health, from privacy to chronic disease management to physician adoption of EHRs. These researchers gave presentations and then engaged members of Ms. Paech's team in open discussions. More than 100 officials involved in the effort to bring EHRs to Ontario attended the consultation.

“I wanted to make people within the government's e-health program aware of some of the recent research findings,” says Ms. Paech. “It was really a kick-start to provide information to a relatively new team starting a big project.”

Overall, Ms. Paech feels that her team left the consultation with a better understanding of EHRs and stronger connections to the researchers studying this growing area of health policy. She feels that the Evidence on Tap program could be an important tool in speeding up the transfer of knowledge from research to policy.

“The reality is that technology is moving at the speed of light and that we are moving as fast as we can to incorporate that technology into our health-care system,” explains Ms. Paech. “We don't want to use old technology or old evidence to build solutions for the future.”



*“The Regional Partnerships Program has been very useful in helping researchers at smaller universities compete for grants.”*

Dr. Frederick Kibenge

## **BUILDING BIG RESEARCH POTENTIAL IN SMALL PLACES**

What can a fish tell you about fighting human diseases? Quite a bit, it turns out.

Frederick Kibenge, a researcher at the Atlantic Veterinary College at the University of Prince Edward Island, studies viral infections in fish, an important topic in a province where fishing is an economic cornerstone. But his research is also translating into potential health benefits for people.

One of the main focuses of his current research is analyzing the structure of a protein, known as VP1, found in birnaviruses, which cause diseases in fish and poultry. This protein is unique in that it is an RNA polymerase (an important type of protein involved in gene activity) with multiple functions.

“In other viruses, the jobs performed by VP1 are done by several different proteins,” explains Dr. Kibenge. “So a drug that can inhibit VP1 shuts down several vital processes in the virus. This drug could potentially be used as a universal viral treatment that takes out many different kinds of viruses.”

Dr. Kibenge’s work may also help fight drug resistance. Viruses are infamous mutators; they quickly outsmart the medications designed to defeat them. That is why one of the most successful strategies for treating a virus is to hit it with a barrage of medications, known as a drug cocktail. By creating a drug capable of attacking a single virus from so many angles, you reduce the chances of the virus developing resistance. If Dr. Kibenge’s research can add another drug to the cocktail, viruses will be less likely to survive the treatment.

Dr. Kibenge’s innovative work is funded through CIHR’s Regional Partnerships Program (RPP). This program, which began as a Medical Research Council initiative and was later expanded by CIHR, aims to promote research in less populous parts of Canada that typically don’t receive a lot of research funding. Through this initiative, CIHR is helping build research capacity in Saskatchewan, Nova Scotia, Newfoundland,



*Dr. Frederick Kibenge*

Manitoba, New Brunswick and Prince Edward Island. In addition to funding researchers in these regions, RPP is designed to encourage other partners, from provincial governments to local industries, to invest in health research. The ultimate goal of the program is to create environments across the country that can sustain health research communities.

## **LOOKING TO THE PAST FOR A HEALTHIER FUTURE**

Who you are and where you live have a huge impact on your health. Researchers have made great progress in identifying the factors that determine health, but applying that information to create healthier communities can be complicated. With the help of CIHR funding, a group of researchers at the Léa Roback Research Centre on Social Inequalities and Health, in Montreal, are trying to open new communication channels among social scientists, policy makers and the people they are trying to help. The Centre is one of seven research centres on population and public health throughout Canada supported by CIHR and its partners.

“We’ve developed a vision for a centre with multidisciplinary at its core,” explains Louise Potvin, the Scientific Director at Léa Roback. “And when we talk about multidisciplinary, we mean it. We have everyone from political scientists to physicians to neurophysiologists to environmental experts.”

The Centre’s headquarters is co-located at the Direction de la santé publique de Montréal (DSP), the city’s department of public health. This unique location gives Léa Roback’s researchers direct contact with municipal government representatives and allows decision makers to get involved in research projects at very early stages and throughout the projects.

“We’re developing a way of interacting with decision makers at the DSP so that we can build on their professional networks to put research into action,” says Dr. Potvin. “And we’re bringing the cream of the research community into those professional networks.”



*Dr. Louise Potvin*

The partnership between the Léa Roback Centre and the DSP has resulted in some innovative knowledge translation activities, including a breakfast club where government representatives and community members can discuss research results with the Centre's researchers.

“Through this partnership, we've created a collaboration of researchers and decision makers with direct access to solid evidence that can highlight and enlighten public health questions,” says Dr. Potvin.

## FACTS AND FIGURES

CIHR investment in the Regional Partnerships Program in Prince Edward Island, 2000-01 to 2007-08:

*\$1.1 million*

Approximate number of researchers supported:

*25*

CIHR investment in the Regional Partnerships Program, 2000-01 to 2007-08:

*\$29.5 million*

Approximate number of researchers supported:

*550*

CIHR investment<sup>1</sup> in electronic health records research, 2007-08:

*\$1.6 million*

<sup>1</sup>Estimate based on a keyword search.





*Dr. Anne Snowdon*

*Partnerships with the Private Sector*

**Canada faces tough questions** about its role in the changing global economy. In this new economy, competitiveness and productivity are determined by how effectively and how rapidly nations can translate emerging knowledge into new and innovative products, practices, policies and services. Health-care innovations, fuelled by research, have significant economic potential for Canada. CIHR has been helping create important partnerships between the academic sector and the private sector, partnerships that will be essential to Canada's future competitiveness.

## A BOOSTER FOR INDUSTRY-UNIVERSITY PARTNERSHIPS

Ask Anne Snowdon about partnerships and she'll tell you about dominos. "The one thing I've learned is that you think you're doing one study but it leads to a lot more. It's been like a domino effect, with one partnership leading to another and another and so on," she observes.

In 2006, Dr. Snowdon, associate professor with the Odette School of Business at the University of Windsor, won the CIHR Partnership Award along with Dr. John Mann, recently retired Director of Engineering from Chrysler Canada and now Chair of the Board of Directors for the national Network of Centres of Excellence research network, AUTO21.

The two won the award based on the success of a joint effort to produce and test an information program to educate parents about the correct use of safety seats for children travelling in vehicles. According to Dr. Snowdon, the statistics are grim; each year, 90 to 100 children under the age of 12 die in vehicle collisions and thousands more are injured. Road crashes are the leading cause of death of children in Canada. Fortunately, this is almost entirely preventable – but only if children are using safety seats correctly.

The collaboration resulted in an education program called Bobby Shooster Rides Safely in his Booster. The project is in its final phases as Dr. Snowdon collects information about the program's effectiveness. But while the initial project is almost completed, it has engendered new partnerships and projects.

For example, in conducting the research for the Bobby Shooster education program, her team uncovered important data from children about attitudes and beliefs around booster seats, which led to another research project to study the issue further. She points out there are many concrete reasons why young kids don't want to be caught sitting in a booster seat – they're uncomfortable, booster seats are "for babies", etc. Parents also have their own barriers around boosters, such as ease of use.

Armed with this information, the partnership with Chrysler and a referral, Dr. Snowdon was able to open a door at Canadian auto parts giant Magna Inc., successfully pitching on the idea of making an innovative new child booster seat.

"We launched this partnership very quickly," she notes. "Four-to-five months later, the company had a prototype."

In fall 2006, Magna launched clek™ booster seats, featuring the first rigid LATCH (lower anchors and tethers for children) system to be integrated into a backless booster seat. Magna now has two clek™ booster seat models, the oto and olli. Since its product launch, olli has won a number of industry awards, including the Juvenile Products Manufacturers Association Innovation Award and the National Parenting Center's 2008 Seal of Approval. Meanwhile, Magna has been approached by 15 other countries to make the clek™ available to them.

*"We're thrilled to have clek™ be a part of Dr. Snowdon's efforts to raise awareness for booster seat safety. clek™ was designed to deliver safety and convenience for parents as well as appeal and comfort for kids. We want to ensure parents have everything they need to feel comfortable using our booster seats."*

**Mr. Chris Lumley**  
clek™ brand  
Vice-President,  
Magna Marque





*“People with IPF face a miserable death; they feel like they’re drowning.”*

Dr. Nasreen Khalil

## THINKING COWS NOT KIDS

Brett Finlay says the breakthrough came when he started thinking less about kids and more about animals. “I had one of those ice cream-in-the-forehead moments where I realized it’s not the kids I need to be thinking about, it’s the cows.”



Dr. Brett Finlay

Dr. Finlay, a professor at the University of British Columbia and specialist in infectious diseases, is referring to the deadly *E. coli* O157:H7 bacterium. Found in undercooked ground beef, it can cause “hamburger disease”. Left to contaminate water supplies, it can result in catastrophes such as Walkerton. According to the U.S. Centers for Disease Control, there are an estimated 73,000 cases of infection and 61 deaths due to *E. coli* O157:H7 in the United States each year. It is a leading cause of foodborne illness.

Dr. Finlay’s epiphany didn’t immediately solve the problem of *E. coli* O157:H7 contamination. However, his new thinking helped focus research in the right direction, looking at how *E. coli* adheres, grows and is eventually shed in the manure from cattle.

The new focus of research ultimately led to the development of a revolutionary new bovine vaccine to block this deadly bacterium. Now, thanks to a partnership with Bioniche Life Sciences Inc., based in Belleville, Ontario, the vaccine is closer than ever to reaching the marketplace. Canada and, most recently, the United States have both granted Bioniche a conditional license to use the vaccine in feedlots.

“It has been an honour to work with gifted Canadian researchers like Dr. Finlay and our own Dr. Dragan Rogan on the advancement of this technology,” says Graeme McRae, President and CEO of Bioniche Life Sciences Inc. “After eight years of development, we are entering the North American market with the world’s first vaccine against the deadly *E. coli* O157:H7 bacterium. This is a made-in-Canada solution that should lessen the illness and death toll that results from human consumption of food and water contaminated with this organism.”

Dr. Finlay adds, “What you’ve seen is basic, grind-it-out, microbiology supported by CIHR to help identify what regulates this system. This has been very useful in helping to come up with the product and the ideas for future generation products that will be even more effective.”

## TOO MUCH GROWTH IS A BAD THING

Nasreen Khalil, lung specialist at the University of British Columbia and the Vancouver Coastal Health Research Institute, wants to give her patients a bit more time to create peace for themselves before they die. Ideally, she wants to help stop the growth of scar producing cells in a disease known as idiopathic pulmonary fibrosis (IPF). In IPF, the scar producing cells grow in an uncontrolled manner and damage the lungs beyond repair. There is less than a 20% survival rate for this disease after five years. This is a medical crisis when it is appreciated that IPF may affect as many as 23-35 people per 100,000.

Lung tissue has one role, to distribute oxygen as thoroughly and efficiently as possible. Normal, healthy tissue has a delicate and flexible, lace-like structure critical for providing maximum transfer of oxygen into the blood. But, with IPF, this structure is overgrown with huge amounts of scar tissue. It would be like taking a fine piece of lace and replacing the delicate threads with thick and inflexible strips of plastic strapping. “What you see is nothing more than a hard chunk of fibroblast and connective tissue. Normal tissue becomes twisted, stretched and gnarled beyond recognition,” Dr. Khalil says. She adds that “people with IPF face a miserable death; they feel like they’re drowning.”

Dr. Khalil is now in the second phase of funding under CIHR’s Proof of Principle Program, an initiative designed to help researchers take promising discoveries out of the lab and into the marketplace. As part of her work, Dr. Khalil has teamed up with Vancouver-based Pacific Therapeutics Ltd. to commercialize a new drug that can stop IPF. As she explains, IPF results from a



Dr. Nasreen Khalil

protein known as Transforming Growth Factor-beta1 (TGF-b1). This protein plays a major role in helping create scar tissue and, in the case of IPF, is able to change into a more active state and cause excess growth of scar cells. Dr. Khalil's team, however, has created a special protein that is natural to the body, called CD36, a peptide capable of preventing TGF-b1 from changing into a harmful form in the lungs.

In experiments with rats, treatment with the peptide has been shown to slow and even prevent the onset of

IPF. The focus of the partnership is to come up with the ideal form of the peptide and the optimal treatment approach. Dr. Khalil points out that the technology could be used for a number of other conditions where excessive scarring poses a serious risk, such as progressive asthma or restenosis of the arteries following angioplasty.

## FACTS AND FIGURES

Approximate number of CIHR private-sector partners contributing funds, 2007-08:	80
Approximate number of spin-off companies related to CIHR/MRC funding:	150
Proof of Principle projects for which final reports have been received:	148
Percentage that contributed to new company formation <sup>1</sup> :	14%
Percentage that have resulted in new patents <sup>1</sup> :	76%
Percentage that have resulted in licensing agreements <sup>1</sup> :	26%
Number of trainees directly supported by CIHR/industry partnerships, 2007-08:	218
Number of CIHR/industry-funded research chairs supported, 2007-08:	26

<sup>1</sup>Overlap between the 3 subcategories.





*Dr. Aled Edwards*

*International Partnerships*

**Research in the 21<sup>st</sup> century is an international undertaking** – and, in the area of health, Canada is consistently hitting above its weight. Canadian researchers are, in the words of the Government of Canada's Science and Technology Strategy, performing at world-class levels of scientific and technological excellence. In November 2006, Canadian health researchers won 18 of 39 awards given out by the Howard Hughes Medical Institute – awards that recognize the accomplishments and promise of biomedical researchers who are recognized pacesetters in their fields.

### **PROVIDING THE FOUNDATION FOR DRUG DISCOVERY: A WORLD-LEADING PARTNERSHIP**



*“The idea that there are thousands and thousands of proteins inside us that are mysteries is really exciting.”*

**Dr. Aled Edwards**

Aled Edwards is interested in virology and the innate immune system. But the University of Toronto researcher has next to no time for his own research these days. “I’m diminishing my own projects because this one commands and deserves my full attention,” he says.

The project that’s pulling him away from his own research is the Structural Genomics Consortium (SGC), of which he is the chief executive. The international group of scientists he heads is determining the three-dimensional structures of proteins that are relevant to human health. Access to these structures can cut months, even years off the lengthy drug development process.

The SGC is the leading structural biology project in the world focusing on proteins from humans and human parasites, such as the one that causes malaria. In its first phase, from 2004-2007, it was mandated to produce 386 novel structures of proteins of relevance to human health – a goal it reached ahead of schedule and under budget. In its recently approved second phase, its goal is to produce a further 660 structures.

As soon as these structures are determined, they are immediately placed in the public domain, available to researchers everywhere to speed the research process, with no restrictions on their use.

“That’s the whole point. This information, like that of the human genome, belongs to a class of information that has been proven to be of the most use when it’s publicly available,” says Dr. Edwards. “As soon as you start talking about who owns the intellectual property, it opens up a quagmire of legal problems and slows down the research both in academia and in industry.”

The SGC is a public-private partnership, with more than 180 researchers from Canada, the United Kingdom and Sweden. It receives support from CIHR, Genome Canada (through the Ontario Genomics Institute), the Canada Foundation for Innovation, the Ontario Ministry of Research and Innovation, the Ontario Innovation Trust, the Knut and Alice Wallenberg Foundation, the Vinnova Swedish Agency of Innovation, the Swedish Foundation for Strategic Research, the Karolinska Institute, Wellcome Trust, GlaxoSmithKline, Novartis and Merck.

Dr. Edwards says the international nature of the SGC is part of its strength. “Science is a cultural phenomenon. People take different approaches to problems depending on where they’ve been trained,” he says. “It’s very constructive to have three different cultural backgrounds attacking the same problem.”

Dr. Edwards’ excitement at being involved with the SGC is palpable. “The idea that there are thousands and thousands of proteins inside us that are mysteries is really exciting,” he says. “It plays to my personality type – I’m a hopping-around, attention-deficit kind of guy. And it turns out that I’m pretty good at running things.”



*“Meeting people face-to-face is much more effective to get mutual understanding.”*

Ms. Chen Huai

## **BOLSTERING THE SEARCH FOR AN HIV VACCINE**

Keith Fowke has spent 20 years engrossed in a mystery: why is it that women in Kenya who have been exposed to the HIV virus repeatedly, over many years, don't contract HIV?

Dr. Fowke, an associate professor at the University of Manitoba, believes that discovering why these women are resistant to HIV holds the key to developing an effective HIV vaccine.

“The answer is there,” he says with some frustration. “We just need to be smart enough to find it and then duplicate it in other individuals.”

Finding a vaccine is the holy grail of HIV research – but success has, to date, been elusive. Now, however, the Canadian HIV Vaccine Initiative (CHVI) is giving the search renewed vigour. The initiative, a partnership between the Government of Canada (including CIHR) and the Bill & Melinda Gates Foundation, is a new effort to accelerate the development of an HIV/AIDS vaccine. It will support Canadian researchers and institutions in working with collaborators around the world, including in developing countries, on a range of HIV vaccine research activities.

The Canadian effort will be helped, Dr. Fowke says, by the appointment of CIHR's inaugural President Alan Bernstein as Executive Director of the Global HIV Vaccine Enterprise. Dr. Bernstein's experience with CIHR will lead to greater recognition of the strength of Canadian research and the excellence of CIHR's researchers on the international scene, he says. The CHVI will be aligned with the global enterprise.

Dr. Fowke had already been affected by the generosity of the Gates Foundation, as a research partner with Dr. Francis Plummer, the 2007 CIHR Health Researcher of the Year. Their research has been transformed, Dr. Fowke says, by the funding they received from the Gates Foundation's Grand Challenges in Global Health. Now he is hoping to continue his association with the Foundation through the CHVI.



*Dr. Keith Fowke*

Dr. Fowke admits that working for 20 years without a successful vaccine to show for it can be frustrating. But he remains convinced that HIV resistance provides hope for success. And, he says, the optimism and enthusiasm of his collaborators in Kenya and the resistant women themselves give him hope.

## **SHARING WORK, SHARING LIVES**

Chen Huai loves Ottawa. She loves the museums, she loves the way people speak English and French seemingly interchangeably and she loves the enthusiasm that CIHR employees show for their work.

“I was able to stay with a family [at a bed-and-breakfast] and this made me feel at home,” she says. “I like the museums in Ottawa that made me learn more about the history and art of Canada.”

Ms. Chen is the Division Director of the Bureau of International Cooperation of the National Natural Science Foundation of China (NSFC), CIHR's partner in the Canada-China Joint Health Research Initiative. The program funded 15 projects in 2006-07 and 20 new joint research projects in 2007-08. Ms. Chen spent a month in Ottawa in the fall of 2007, learning about CIHR's structure and organization, particularly its peer review process, which is admired by funding agencies around the world.

“I have learnt a lot through this program from the experience of our CIHR colleagues, especially how they organize joint review panels and related works,” she says. “I am sharing what I learnt with my colleagues here in NSFC and Chinese scientists in the hope of further promoting China-Canada cooperation in scientific research.”

And her advice for others embarking on a similar mission?

“Try to meet people and share views with them. This is what I enjoyed the most and that made me learn a lot. Meeting people face-to-face is much more effective to get mutual understanding.”



*Ms. Chen Huai*

## FACTS AND FIGURES

Approximate number of countries involved in international linkages with CIHR researchers:

50

CIHR investment<sup>1</sup> in research related to international HIV/AIDS, 2007-08:

\$3.4 million

CIHR investment in the Structural Genomics Consortium Program between 2003-04 and 2011-12:

\$19 million

Approximate number of CIHR Training Award recipients conducting research outside Canada, 2007-08:

240

Number of projects supported under the Canada-China Joint Health Research Initiative, 2007-08:

35

<sup>1</sup>Estimate based on a keyword search.





*Ms. Shirley Dzogan*

*Partnerships with the Public*

**CIHR doesn't just strive to improve** the health of all Canadians; we want to involve them in shaping the research that impacts their lives. We want to open up lines of communication between members of the public and the researchers we fund. That is why we have initiated numerous programs that bring members of the public into the discussion of health research.

## A PUBLIC PERSPECTIVE ON HEALTH RESEARCH



*“It can be very difficult for researchers who have dedicated a good portion of their lives to a very specialized area of research to convey to the public why that research is important.”*

**Ms. Shirley Dzogan**

All of life is a learning opportunity for Shirley Dzogan.

Her passion for acquiring new knowledge propelled her through her early university studies in microbiology and virology and on to a career as a lab technologist. After graduation, she continued to take courses and study different aspects of public health, all while raising a family. She now works for Manitoba's Department of Health as a consultant with portfolio responsibility in the Provincial Laboratory and Diagnostic Services and Manitoba Renal Program.

“I'm a great believer in continuous learning, at whatever stage you happen to be in life,” says Ms. Dzogan.

Shirley Dzogan has continued her pursuit of knowledge by volunteering as a CIHR community reviewer. In doing so, she helps represent the Canadian public on CIHR's peer review committees.

The peer review process is a time-honoured tradition in which researchers from a specific field come together to judge the merit of a particular research project. Scientific journals use this process to determine which papers they will publish; CIHR and other funding agencies use it to decide which research projects will receive funding.

Deciding who to fund is a complicated task and it is ultimately determined by experienced researchers who donate their time and expertise to CIHR. But CIHR recognizes that this process should also be open to the public, the ultimate beneficiaries of health research.

“Having worked in a science environment, I knew that applying for funding was a competitive process,” explains Ms. Dzogan. “But it wasn't until I became a community reviewer that I realized just how competitive it was. There are an incredible number of extremely talented researchers working in Canada.”

As a community reviewer, Ms. Dzogan must read descriptions of applicants' projects and offer a non-researcher's perspective on their proposed research. She must consider what types of questions a member of the public might have about the project and whether the public will understand why the project is important. She then meets with CIHR's peer reviewers and shares her thoughts and comments.

“I've noticed a change in the review panel over the years I've been participating as a community reviewer. The researchers are no longer asking me what I think my role is or what I get out of participating in the review process – they know I enjoy it,” says Ms. Dzogan. “Now they really look to me and the other community reviewers to see what we will have to say about an applicant's project.”



*"The people who attended really enjoyed being able to connect with the researchers in an informal way through the interaction and discussion that evolved during the Café."*

Ms. Tammy Matheson

## SCIENCE CLASS NORTH OF 60

Karen Morrison recently spent three days in Rankin Inlet, Nunavut, talking to students about her experiences as a female researcher and about the connection between the environment and health, as part of a Dream Team bringing health research to communities in Canada's Territories.

"I showed the kids pictures of graduate work I'd done in the Caribbean. They wanted to talk about the different kinds of boats and animals. They really enjoyed looking at pictures of what other fishing communities look like," says Dr. Morrison.

The Dream Team program sends high school teachers and scientists to Northern towns like Inuvik, Tuktoyaktuk and Iqaluit to host week-long summer camps. Students participate in fun science experiments, such as building solar-powered ovens and extracting DNA from bananas, and they get to learn about careers in science.

For Canadian students living in the Far North, the opportunity to interact with mentors from different professions, particularly in the health sciences, can be rare. CIHR is working to connect researchers with kids in Northern communities in fun and exciting ways. The activity is part of CIHR's youth outreach initiative, Synapse. Actua, a non-profit organization that aims to cultivate an interest in science, technology and engineering in Canada's youth and one of Synapse's key partners, hosts the activity.

Dr. Morrison volunteered for the Dream Team camp while she was doing her post-doctoral studies at the Nasivvik Centre, a CIHR-funded centre dedicated to studying Inuit health and climate change based at Trent and Laval Universities. While in Rankin Inlet, she had the students, who ranged in age from 6 to 12, draw pictures about what health and environment meant to them. According to Dr. Morrison, the students were very insightful.

"One young girl asked if she could draw a sunset, because she felt it represented mental health. She just interpreted the project that way on her own," she says.



*Dream Team Camp*

The students' interest and enthusiasm have left her excited about the Dream Team program. "The kids really responded to the program," says Dr. Morrison. "I think we should be taking advantage of the wide network of researchers and graduate students who are already working in Northern areas. It would be a great way for researchers working in these communities to give something back."

## HEALTH RESEARCH FOR THE PEOPLE!

Last fall, Science World British Columbia discovered just how thirsty the public can be for a little scientific discussion.

Science World is a non-profit organization that promotes science to B.C. families through interactive exhibits at their museum in Vancouver and community outreach programs

throughout the province. The museum educates and entertains half a million visitors each year. Science World is constantly looking for new ways to promote learning in the community and found an interesting opportunity to do that through CIHR's Café Scientifique program.

"We had been informally trying to organize with our own staff and friends some small science conversations in pubs or cafes," says Tammy Matheson, Director of Business Operations at Science World British Columbia. "Then we heard about CIHR's Café Scientifique grant program and decided to apply to see if we could host a larger-scale event."

A Café Scientifique allows researchers and members of the public to meet in a relaxed atmosphere to discuss the latest research on a pressing scientific issue. In October 2007, Science World used a CIHR grant to organize a Café on nutrition entitled "Food for Thought". The event touched on a variety of nutrition issues, from how the foods we eat affect our health, to understanding nutrition buzzwords, to incorporating nutritious foods into our daily diet. The Café's panelists included two CIHR-funded researchers, a registered dietician and a cookbook writer.

"We received a lot of positive feedback from the people who attended, particularly about the format of the Café,"



*Café Scientifique*

says Ms. Matheson. “They really enjoyed being able to connect with the researchers in an informal way through the interaction and discussion that evolved during the Café.”

CIHR is trying to promote dialogue between researchers and the public through its Café Scientifique

program, partnering with museums, science centres and universities throughout Canada to host Cafés on a wide range of health research topics. As for Science World British Columbia, it’s already planning another Café for 2008, this time about understanding the criminal mind.

## FACTS AND FIGURES



Approximate number of Community Reviewers, 2007-08:	15
Number of Café Scientifique partnerships, 2007-08:	18
Number of Cafés Scientifiques, 2007-08:	24
Approximate number of people who attended a CIHR Café Scientifique, 2007-08:	1,800
Number of Synapse partnerships, 2007-08:	13
Number of researchers signed up as mentors:	4,171
Number of students reached directly by Synapse, 2007-08:	21,842



## Overview and Highlights of 2007-08

The Canadian Institutes of Health Research (CIHR) is the Government of Canada's agency for health research. Its mandate is to *“excel, according to internationally accepted standards of scientific excellence, in the creation of new knowledge and its translation into improved health for Canadians, more effective health services and products and a strengthened Canadian health-care system.”*

CIHR is composed of 13 Institutes and four central portfolios – research, knowledge translation, corporate affairs and finance. It provides leadership and support to nearly 12,000 researchers and trainees in every province of Canada. Through CIHR, the Government of Canada is supporting health research that addresses society's highest priority health issues and contributes to economic growth and prosperity.

During 2007-08, CIHR continued to implement the recommendations of the International Review Panel that assessed CIHR's first five years. In keeping with the Government of Canada's Science and Technology Strategy, CIHR also focused on building stronger ties with its fellow federal funding agencies, the Natural Sciences and Engineering Research Council (NSERC), the Social Sciences and Humanities Research Council (SSHRC) and the Canada Foundation for Innovation (CFI).



# Organizational Highlights 2007-08

## CHANGE AT THE TOP

Dr. Alan Bernstein, CIHR's inaugural President, left CIHR in November 2007 to take up a position as inaugural Executive Director of the Global HIV Vaccine Enterprise, where he will lead the development of a strategy to come up with an HIV vaccine while building partnerships among researchers, donors and advocates. The Global HIV Vaccine Enterprise is charged with setting scientific priorities, mobilizing resources and improving collaboration in the HIV vaccine field.

Dr. Alain Beaudet, currently President and Chief Executive Officer of the Fonds de la recherche en santé du Québec (FRSQ), has been appointed the new President of CIHR and will take up office on July 1, 2008. Dr. Pierre Chartrand, CIHR's Vice-President of Research, will continue as Acting President of CIHR until then.

## ENSURING ACCESS TO RESEARCH RESULTS

As of January 1, 2008, all recipients of new CIHR grants must ensure that all research papers that are generated from their CIHR-funded projects are freely accessible online within six months of publication. The Policy on Access to Research Outputs was developed in consultation with CIHR-funded researchers and stakeholders in governments, research, publishing and libraries. CIHR also looked to the experience of funding agencies in other countries that have similar policies. Greater access to research publications and data will help researchers in Canada and abroad use and build on the knowledge needed to address significant health challenges. Open access also allows authors to reach a much broader audience and will help make research users, such as policy makers, clinicians and the public, more aware of research knowledge in order to facilitate its use. Researchers with grants awarded prior to January 1, 2008 are also encouraged to comply with the policy.

## SETTING FUTURE DIRECTIONS, PART I: BLUEPRINT RENEWAL

CIHR's Strategic Plan, *Blueprint*, set five strategic directions for the organization to carry it through 2007-08. Now, CIHR has embarked on a process to set directions for the next five years – from 2008-09 to 2012-13. CIHR's Governing Council has directed CIHR's management to use the strategic directions in the initial *Blueprint* as a starting point for the *Blueprint* renewal process. Stakeholder consultations on the draft plan will take place during summer 2008 and the plan is expected to be approved by the Governing Council by late 2008-09.

## SETTING FUTURE DIRECTIONS, PART II: UPDATING INSTITUTE STRATEGIC PLANS

One of the first steps taken by CIHR's 13 Institutes was to develop strategic plans. Based on widespread consultations within their communities, these plans set the direction for Institute activities over the past five or more years.

Now, as CIHR undergoes revision of its own strategic plan, its Institutes are doing the same thing. They are revisiting their strategic plans, assessing the priorities they set and deciding on how best to build on existing research strengths and address important research questions. Institute strategic plans provide a roadmap to help CIHR Institutes respond to current and future challenges. These plans can be found on each Institute's website, which can be reached from CIHR's website at [www.cihr-irsc.gc.ca](http://www.cihr-irsc.gc.ca).



## **ETHICAL GUIDELINES FOR ABORIGINAL HEALTH RESEARCH**

Aboriginal peoples in Canada will now be more involved in planning, executing and sharing the outcomes of research conducted with and in their communities as a result of new research ethics guidelines developed by CIHR. The new *CIHR Guidelines for Health Research Involving Aboriginal Peoples* focus on conducting ethically and culturally competent research that balances the pursuit of scientific excellence with Aboriginal values and traditions. The Guidelines will be an essential tool for promoting research that will improve the health, well-being and health-care needs of Aboriginal peoples and build partnerships. They are the product of an extensive consultation process with Aboriginal communities, researchers and institutions. The Guidelines will also be an important contribution to the ongoing process to revise Section 6 of the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*, which addresses research involving Aboriginal peoples.

## **FACILITATING GENDER- AND SEX-BASED ANALYSIS**

For many years, health research was carried out on male subjects – and it was simply assumed the results would apply to women. We have come a long way since those days, but the need to implement gender- and sex-based analysis (GSBA) remains pressing. GSBA accounts for genetic, physiological, social and cultural diversity in the production of new knowledge, ensuring a more relevant and accurate evidence base upon which to develop practice, programs, policies and future research endeavours. CIHR has taken a leadership role as part of the national and international movement to apply GSBA in research. Through its Institute of Gender and Health, CIHR has produced a Resource Guide to help peer reviewers and applicants consider when and how sex and gender – and the interactions between them – influence the research they conduct and the health of women and men, girls and boys. Implementing GSBA in health research is fundamental to achieving research excellence. Now researchers have a tool to help them.

## **RESEARCH SNAPSHOT: CANCER**

Investment in cancer research in Canada in 2005 reached \$254 million according to an analysis released by the Canadian Cancer Research Alliance (CCRA). Of that, 44% came from CIHR. Nearly half the cancer research funding was invested in investigations of the biology of cancer, while 20% went to treatment research. Between 7 and 10% was invested in prevention. CCRA is an alliance of cancer research funding organizations and affiliated partners working together to enhance the overall state of cancer research funding in Canada. Dr. Philip Branton, Scientific Director of CIHR's Institute of Cancer Research, is the Co-Chair of the CCRA Board of Directors.

## **MENTAL HEALTH COMMISSION OF CANADA**

On August 31, 2007, the Government of Canada launched the new Mental Health Commission of Canada. Creation of the Commission was recommended by the Senate Standing Committee on Social Affairs, Science and Technology in its 2006 report, *Out of the Shadows at Last: Transforming Mental Health, Mental Illness and Addiction Services in Canada*. CIHR's Institute of Neurosciences, Mental Health and Addiction collaborated closely with the Senate Committee during the preparation of the report and will continue to collaborate with the Commission to ensure that the best possible mental health research evidence is available to inform its actions.

## **PARTNERING WITH INDUSTRY**

CIHR's Institute of Nutrition, Metabolism and Diabetes has partnered with the Rx&D Health Research Foundation to increase understanding of effective interventions to prevent and treat childhood obesity. The Rx&D Health Research Foundation is a private not-for-profit organization supported by members of Canada's Research-Based Pharmaceutical Companies (Rx&D).

## SCIENCE ON TAP: BRINGING HEALTH RESEARCH TO CANADIANS

Across the country, Canadians are gathering in cafés and pubs to talk with researchers about some of the most pressing health issues of the day. CIHR's Café Scientifique series bring together panels of health researchers for discussion in an informal setting intended to quench Canadians' interest in health. CIHR and its Institutes are holding the Cafés and CIHR is also funding non-profit organizations, universities or research centres who want to organize a Café. While at the Cafés, Canadians also have the opportunity to fill out surveys that tell CIHR how they would like to hear about progress in health research and where they think CIHR funding should be directed.



# Research Breakthroughs 2007-08

## **TIME MAGAZINE NAMES CIHR-FUNDED STUDY TOP MEDICAL BREAKTHROUGH OF 2007**

An international research study has found that male circumcision is an effective way to reduce the incidence of HIV among young men. The study, led by Dr. Stephen Moses, a CIHR-funded researcher from the University of Manitoba, was named the top medical breakthrough of 2007 by *Time Magazine*, after two clinical trials of male circumcision were halted early when analysis of available data showed their dramatic success. CIHR provided more than \$2.5 million in funding to this study.

## **IT'S MY LITTLE BLUE PILL...**

And it's good for much more than just erectile dysfunction. In a CIHR-funded study, Dr. Evangelos Michelakis and his team have shown that Viagra can improve heart function, suggesting that it can be used to treat the heart when the right ventricle is failing. There is currently no treatment available for this condition.

## **YOU SAY TOMAYTO, I SAY TOMAHTO**

No matter how you say it, tomatoes mean good things for your health, particularly if you're a postmenopausal woman. Dr. Leticia Rao, a CIHR-funded researcher at the University of Toronto, has found that postmenopausal women who consume more lycopene, a powerful antioxidant, from tomatoes and tomato products, had a lower amount of a specific bone protein associated with osteoporosis. Her findings could lead to new strategies to reduce the risk of osteoporosis.

## **A PLACE TO GROW OLD – BUILDING BETTER CITIES FOR CANADA'S SENIORS**

CIHR-funded researcher Dr. Verena Menec of the University of Manitoba is contributing to the development of cities in which seniors can live happily, healthily and independently. As part of the World Health Organization's Global Age-Friendly Cities Project, Dr. Menec conducted a series of focus groups with seniors from Portage la Prairie, Manitoba, to learn more about their experiences living in the small agricultural city. The WHO has used the information from the seniors of Portage la Prairie and 32 other cities around the world to create a guidebook to help communities include and accommodate seniors.



## **A TEST FOR AUTISM**

Scientists at the University of Toronto's Hospital for Sick Children, led by CIHR-funded researcher Dr. Steven Scherer, have identified a specific region of chromosome 16 as the culprit in 1% of autism cases. When the genetic code in this region is deleted, this seems to result in more severe cases of autism; if it is duplicated, the disorder appears to be milder. The mutation does not appear to be inherited. They plan to offer testing to patients as soon as possible – welcome news to parents who already have one child with autism and who fear a higher risk of a second child also having autism. The test, says Dr. Scherer, is relatively cheap and easy to perform. As well, it offers the option of diagnosis of newborns, or even before birth. Currently, doctors tend to rely on psychological tests that can only be used around age 3.

## **YET MORE GOOD NEWS ABOUT FOLIC ACID**

Folic acid's impact on reducing the rate of neural tube defects such as spina bifida is well known. Now, a CIHR-funded team led by Dr. Shi Wu Wen of the Ottawa Health Research Institute has found that folic acid, particularly during the second trimester, can reduce the risk of preeclampsia. Characterized by high maternal blood pressure, preeclampsia is a leading cause of maternal and infant illness and death worldwide. The researchers followed some 3,000 pregnant women and found that preeclampsia occurred in 2.2% of women who took multivitamins containing folic acid, compared to 5.1% of women who did not. Another CIHR-funded study has pointed to yet more benefits of folic acid.

Dr. Bhushan Kapur of the University of Toronto's Sunnybrook Health Sciences Centre has found that folic acid can significantly slow the neurotoxicity of formic acid, a by-product of methanol found in alcoholics. His research indicates that folic acid, an inexpensive and readily available supplement, could be used in treating alcoholism and, possibly, preventing fetal alcohol syndrome.

## **MMM... MORE FRUITS AND VEGGIES, PLEASE! THE BENEFITS – AND LIMITS – OF BREASTFEEDING**

Babies enjoy fruits and vegetables more if their moms regularly eat those foods while they're breastfeeding, according to a study carried out by Dr. Catherine Forestell, a CIHR-funded postdoctoral fellow at Philadelphia's Monell Center, and Dr. Julie Mennella, a biopsychologist at the Center. The study also found that parents shouldn't give up if a baby makes a face when first given the food – it's a natural reaction and doesn't mean that the baby doesn't like it. Also on the breastfeeding front, a study led by Dr. Michael Kramer, Scientific Director of CIHR's Institute of Human Development, Child and Youth Health, has found that, while breastfeeding is great for baby's health, it can't be counted on to protect children from becoming overweight. He also found that breastfeeding doesn't protect children against developing asthma or allergies. The findings stem from the largest randomized trial ever undertaken on breastfeeding, the Promotion of the Breastfeeding Intervention Trial (PROBIT), which followed nearly 14,000 children in 31 Belarussian maternity hospitals and their affiliated clinics.

### **WOMEN TREATED DIFFERENTLY IN EMERGENCY ROOMS**

Women over 50 visiting emergency rooms appear less likely than men to be admitted to the intensive care unit and spend less time there once they are admitted, according to CIHR-funded researcher Dr. Robert Fowler from the University of Toronto's Sunnybrook Health Sciences Centre. They are also less likely to receive selected life-supporting treatments, such as mechanical ventilation, and more likely than men to die after a critical illness. Dr. Fowler and his team suggest that the gender-related differences could be due to differences in preferences or decision making among the patients, their surrogate decision makers or the health-care team.

### **TALK TO ME, DOCTOR!**

Physicians who score low in patient-physician communications and clinical decision making during their training have higher rates of patient complaints once they start practicing, according to CIHR-funded researcher Dr. Robyn Tamblyn of McGill University. Her findings have important implications for medical educators and licensing authorities.

### **LEARNING MORE ABOUT TYPE 2 DIABETES**

Eliminating a specific type of gene in mice causes more sugar to become stored in their livers, meaning that insulin had become more effective. The finding, by CIHR-funded researchers Drs. Katrina MacAulay and Bradley Doble at the Samuel Lunenfeld Research Institute of Mount Sinai Hospital, could lead to new treatments for people with type 2 diabetes. Meanwhile, CIHR-funded researcher Dr. Ron Sigal of the University of Calgary, with colleagues at the University of Ottawa, has found that combining aerobic exercise with resistance training can double the benefits in terms of controlling blood sugar than either activity on its own. And a dietary clinical trial led by Dr. Thomas Wolever of the University of Toronto has found that people with type 2 diabetes who ate a low glycemic-index diet had reduced levels of C-reactive protein. C-reactive protein is a common indicator of the risk of cardiovascular disease. More than 2 million people in Canada suffer from diabetes, 90% of them with type 2 diabetes. More than 60,000 new cases are diagnosed each year.

### **WELL, RATTLE MY BONES!**

Lithium, a drug used most commonly to treat bipolar disorder, also plays a critical role in improving the bone healing process, according to a study by Dr. Benjamin Alman and a team of CIHR-funded researchers at the University of Toronto's Hospital for Sick Children. Delayed healing of bone fractures can cause substantial disability and often requires additional surgery. Finding a drug that can enhance bone healing has been a long-sought treatment that could improve fracture repair and substantially improve patient outcomes.

## **WALKING TO THE BEAT**

A team of neuroscientists led by Drs. Bin Hu at the University of Calgary and Ian Whishaw at the University of Lethbridge has found that music can help people with Parkinson's disease walk with greater safety and confidence. With funding from CIHR, Dr. Hu and his colleagues have developed a wireless device called NeuroExplore to monitor people's walking patterns. If a person begins to walk with an unsteady gait, the device will emit a warning sound or begin to play rhythmic music. The team has discovered that people trained to walk with familiar songs with danceable beats are less likely to lose their balance while walking than people moving without music. The researchers have also found that songs can be tailored to people's walking patterns to create personalized "walk songs" and used to facilitate daily exercise.

## **BREACHING THE BARRIERS – OR NOT**

Normally the blood-brain barrier is just that, a barrier that few cells can breach. However, in people with multiple sclerosis (MS), cells called leukocytes can travel through the barrier with ease, penetrating the central nervous system and leading to the neuroinflammation and brain lesions that are found in MS. CIHR-funded researcher Dr. Alexandre Prat of the Centre hospitalier de l'Université de Montréal (CHUM) and his team have found a molecule that plays a role in helping leukocytes move across the blood-brain barrier. Developing a drug that blocks this molecule could lead to new ways to treat MS.

## **NO DISHONOUR IN GIVING UP**

If at first you don't succeed, try, try again. That old dogma may not be so true and may actually be bad for your health. Dr. Carsten Wrosch of Concordia University has found that teenaged girls continually striving to attain a hard-to-reach goal show increased levels of C-reactive protein, an inflammatory molecule that, in adults, has been linked with diabetes, heart disease and early aging. Dr. Wrosch's work was deemed one of the world's 70 most intriguing discoveries of 2007 by the *New York Times Magazine*. Dr. Wrosch was the 2005 winner of CIHR's Institute of Aging Special Recognition Prize for New Investigators in research on aging.

## **BUILDING INTERNATIONAL SYNERGIES**

Fourteen international research teams funded through the Teasdale-Corti Global Health Partnership got together in November 2007 to share their experiences and ended up forging alliances to move their projects forward. The University of Calgary's Dr. Craig Stephen, who is leading a project to enhance the surveillance of animal health in Sri Lanka, in part to help prevent pandemics, has teamed up with Dr. Ana Sanchez of Ontario's Brock University, who is leading a project to reduce the transmission of a disease carried by pigs. As a result of their collaboration, both teams are benefitting from their shared expertise on the overlap between animal and human health. Their work is also helping to improve the role of veterinarians in public health in Canada.





## *Providing Stewardship and Accountability*

CIHR reports to Parliament through the Minister of Health. Its Governing Council comprises 20 Canadians who have been appointed by Order in Council to renewable three-year terms. Council members represent a wide range of backgrounds and disciplines, reflecting CIHR's broad mandate and vision.

# CIHR's Governing Council, 2007-08

**DR. ALAN BERNSTEIN**

(until November 2007)  
(Chair)

President

Canadian Institutes  
of Health Research

**MR. KEITH G. ANDERSON**

Senior Policy Advisor

British Columbia Ministry of Health

Adjunct Professor

Department of Gerontology

Simon Fraser University

**DR. JAMES BRIEN**

Professor of Pharmacology  
and Toxicology

Director of Research

Faculty of Health Sciences

Queen's University

**DR. MICHEL BUREAU**

Professor

Faculty of Medicine

University of Sherbrooke

Director General

Ministère de la Santé et des Services  
sociaux du Québec

**DR. HARVEY MAX CHOCHINOV**

Canada Research Chair

in Palliative Care

Professor of Psychiatry

University of Manitoba and

CancerCare Manitoba

**DR. NANCY EDWARDS**

(Vice-Chair)

Professor

School of Nursing

Department of Epidemiology

and Community Medicine

Director

Community Health Research Unit

University of Ottawa

**DR. BRETT B. FINLAY**

Professor

Michael Smith Laboratories

Department of Biochemistry

and Molecular Biology

University of British Columbia

**DR. NICOLE LETOURNEAU**

Associate Professor and Research Fellow

University of New Brunswick

**DR. CHRISTOPHER W. LOOMIS**

Vice-President (Research)

Memorial University of Newfoundland

**DR. PATRICK JOHN McGRATH**

Vice-President Research

IWK Health Centre

Professor of Psychology, Pediatrics

and Psychiatry

Dalhousie University

**DR. RODNEY OUELLETTE**

(until November 2007)

Director

Molecular Pathology Laboratory

CEO and Scientific Director

Beausejour Medical Research Unit

Head of Research

Dr. Georges-L.-Dumont Hospital

**DR. ARTHUR PORTER**

Director-General and CEO

McGill University Health Centre

**DR. RAY RAJOTTE**

Professor of Surgery and Medicine

Director

Surgical-Medical Research Institute

Director

Islet Transplantation Group

University of Alberta

**DR. CAROL RICHARDS**

Director

Centre for Interdisciplinary Research

in Rehabilitation and Social

Integration

Quebec Rehabilitation Institute

Professor

Department of Rehabilitation

Faculty of Medicine

Laval University

**MR. MORRIS ROSENBERG**

(ex officio)

Deputy Minister

Health Canada

**DR. JANET ROSSANT**

Chief of Research

Hospital for Sick Children

Professor

Department of Medical Genetics

and Microbiology

University of Toronto

**DR. JEAN L. ROULEAU**

Dean of Medicine

University of Montreal

**DR. ROBERT S. SHELDON**

Professor of Cardiac Sciences,

Medicine and Medical Genetics

Associate Dean of Clinical Research

University of Calgary

Vice-President Research

Calgary Health Region

**MR. H. ARNOLD STEINBERG**

(Deputy Vice-Chair, Honourary and

Acting Chair as of November 2007)

Principal

Cleman Ludmer Steinberg, Inc.

Director

McGill University Health

Centre Foundation

MUHC Research Institute and

Canadian Patient Safety Institute

**DR. BILL THOMLINSON**

Executive Director

Canadian Light Source Inc.

University of Saskatchewan

**DR. CORNELIA WEIMAN**

Co-Director

Indigenous Health Research

Development Program

Assistant Professor

Department of Public Health Sciences

Faculty of Medicine

University of Toronto



## *Institutes of Excellence*

**CIHR is composed of 13 innovative Institutes.** These Institutes bring together all partners in the research process – those who fund research, those who carry it out and those who use its results – to share ideas and focus on what Canadians need – good health and the means to prevent and fight diseases when they happen.

Each Institute is headed by a Scientific Director who is a leader in his or her field. Scientific Directors receive guidance from their Institute Advisory Boards, made up of volunteers from all areas of the health research community.

The following are CIHR's 13 Institutes and their Scientific Directors.





- 1 **CIHR Institute of Aboriginal Peoples' Health**  
**DR. JEFF READING**  
*University of Victoria*
- 2 **CIHR Institute of Aging**  
**DR. ANNE MARTIN-MATTHEWS**  
*University of British Columbia*
- 3 **CIHR Institute of Cancer Research**  
**DR. PHILIP BRANTON**  
*McGill University*
- 4 **CIHR Institute of Circulatory and Respiratory Health**  
**DR. PETER LIU**  
*University Health Network  
University of Toronto*
- 5 **CIHR Institute of Gender and Health**  
a) **DR. MIRIAM STEWART**  
(until December 31, 2007)  
*University of Alberta*

- b) **DR. JOY JOHNSON**  
(as of January 1, 2008)  
*University of British Columbia*
- 6 **CIHR Institute of Genetics**  
**DR. RODERICK MCINNES**  
*Hospital for Sick Children  
University of Toronto*
- 7 **CIHR Institute of Health Services and Policy Research**  
**DR. COLLEEN M. FLOOD**  
*University of Toronto*
- 8 **CIHR Institute of Human Development, Child and Youth Health**  
**DR. MICHAEL KRAMER**  
*Montreal Children's Hospital  
McGill University*
- 9 **CIHR Institute of Infection and Immunity**  
**DR. BHAGIRATH SINGH**  
*University of Western Ontario*

- 10 **CIHR Institute of Musculoskeletal Health and Arthritis**  
**DR. JANE AUBIN**  
*University of Toronto*
- 11 **CIHR Institute of Neurosciences, Mental Health and Addiction**  
**DR. RÉMI QUIRION**  
*Douglas Hospital Research Centre  
McGill University*
- 12 **CIHR Institute of Nutrition, Metabolism and Diabetes**  
**DR. DIANE FINEGOOD**  
*Simon Fraser University*
- 13 **CIHR Institute of Population and Public Health**  
**DR. JOHN FRANK**  
*University of Toronto*



Volunteers are the backbone of CIHR's reputation for excellence. They help to set research priorities and strategic directions, ensure that CIHR funding is allocated to the very best research proposals, and provide accountability to the people of Canada – the source of CIHR funding – and to the research community.

*Photos (Clockwise  
from top right):*  
*Dr. Jack Tu*  
*Dr. Rosanna Weksberg*  
*Dr. Penny Hawe*  
*Dr. Philippe Gros*

In particular, each year, more than 2,000 expert reviewers volunteer their time to one of CIHR's peer review committees, assessing the strengths and weaknesses of each of the many thousands of funding applications CIHR receives. Their work is supplemented by that of thousands of external reviewers who submit written reports for consideration by peer review committees. CIHR's peer review system ensures that CIHR's funding process is fair and open, that taxpayers' money is spent wisely and that the best and the brightest researchers are funded.

CIHR recognizes the dedication of its volunteers and thanks them for their continuing commitment to improving the lives of Canadians. A full listing of all CIHR volunteers can be found in the companion volume to this report, entitled *The Power of Volunteers 2007-2008*.

# Financial Statement Discussion and Analysis

## FINANCIAL HIGHLIGHTS

- The total CIHR budget for 2007-08, as appropriated by Parliament, reached \$993.7 million, an increase of \$130.2 million (or 15.1%) over 2006-07.
- The total net cost of operations reached \$999.0 million, an increase of 17.9% as compared to 2006-07.
- The number of CIHR-funded Grants and Awards increased to over 9,200 for total Grants and Awards expenses of \$956.1 million in the period (an increase of 18.0% over 2006-07).
- CIHR's operations and administration expenses totaled \$55.3 million, an increase of 11.7% over 2006-07. Operations and administration expenses were comprised of \$36.5 million in salaries and employee benefits (66%) and \$18.8 million in non-salary expenses (34%). Operations and administration expenses continue to comprise less than the target maximum value of 6% of total CIHR expenses.
- CIHR did not spend all available and planned funding in 2007-08. A surplus of \$17.3 million arose in the Grants and Awards budget, almost entirely from delays in establishing new Canada Research Chairs. A surplus of \$2.3 million occurred in the Operating budget due to projects being cancelled or not starting as quickly as planned along with improvements in operational efficiencies.
- Revenues (\$9.4 million) remain relatively modest and generally consistent with the previous fiscal year.
- Total Assets (\$40.5 million) and Total Liabilities (\$44.3 million) are both significantly higher than in 2006-07. The increases are mainly due to the \$20 million Gairdner Foundation grant payable at year end, which resulted in a corresponding \$20 million increase in the "Due from the Consolidated Revenue Fund" balance.
- The acquisition and amortization of tangible capital assets (\$1.1 million and \$1.9 million respectively) are relatively consistent with the prior year.

## ANALYSIS

CIHR's growth is almost entirely dependent on increases to its appropriations approved by Parliament. The 15.1% increase in the 2007-08 CIHR budget resulted in commensurate increases to its net cost of operations which in turn is dominated by Grants and Awards expenditures. Grants and Award expenses in 2007-08 totaled \$956.1 million, an increase of \$145.9 million or 18.0% as compared to 2006-07.

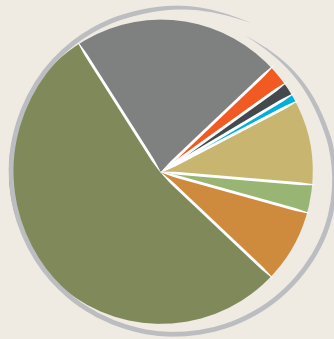
The most significant component of this increase is the \$73.5 million in funding for the Centres of Excellence for Commercialization and Research (CECR) program. The CECR program supports, on an open and competitive basis, the operation of research and commercialization centres that bring people together to translate knowledge into significant commercial advantage, to position Canada at the forefront of breakthrough innovations.

In addition, as part of the 2007 Federal Budget, CIHR was granted a \$37 million base budget increase. CIHR management allocated the full \$37 million base budget increase to its suite of grant and award programs in 2007-08. More specifically, \$33.5 million was allocated to the Open Operating Grants program, and \$3.5 million was allocated to fund knowledge translation and commercialization activities. In addition, CIHR received net increased funding of \$5.9 million for the Canada Graduate Scholarships, a program that provides scholarships to the most outstanding eligible students pursuing masters or doctoral studies in Canadian universities.

The following graphic indicates how 2007-08 Grants and Awards expenses were allocated by program area. Priority is given to funding health research and researchers through open competitions, strategic initiatives and knowledge translation. CIHR also participates with other federal granting agencies (NSERC, SSHRC) in a number of programs, including the Canada Research Chairs, the Networks of Centres of Excellence, and the new Centres of Excellence for Commercialization and Research.



## FINANCIAL STATEMENT DISCUSSION AND ANALYSIS



### 2007-08 GRANTS AND AWARDS EXPENSES\*

*\$956.1 million*

- Open Competitions (54.0%)
- Strategic Initiatives (22.0%)
- Endowments (2.1%)
- Institute Support Grants (1.4%)
- Knowledge Translation (0.9%)
- Canada Research Chairs (9.0%)
- Networks of Centres of Excellence (2.9%)
- Centres of Excellence for Commercialization and Research (7.7%)

*\*Figures do not include refunds of previous years' expenses and may vary due to rounding.*

As the graphic indicates, CIHR invests the largest share of its budget on research grants and personnel support awards through Open Competitions, enabling individual researchers, or groups of investigators, to pursue their own research priorities. Applications for assistance undergo rigorous peer review by committees of experts in the field. This process helps ensure that only those proposals that meet internationally accepted standards of excellence are funded.

Strategic Initiatives comprise the second largest area of investment and it targets high priority research areas identified by CIHR's Institutes after broad consultations with stakeholders and partners. These strategic initiatives address emerging health threats and other important health issues of concern to Canadians, for example obesity, cancer, vulnerable populations such as youth and Aboriginals, or measures to improve the effectiveness of the health care system itself.

Knowledge Translation (KT) is a critical and growing part of CIHR's mandate focused on the synthesis, exchange and ethically-sound application of knowledge to accelerate the capture of the benefits of research for Canadians through improved health, more effective services and products and a strengthened health care system.

## FINANCIAL STATEMENT DISCUSSION AND ANALYSIS

As noted earlier, the key business driver for CIHR is being provided by Parliamentary Appropriations by the Federal Government. The table below summarizes the Parliamentary Appropriations received by CIHR in fiscal year 2007-08:

### SUMMARY OF PARLIAMENTARY APPROPRIATIONS

(in millions of dollars)

	2007-08 MAIN ESTIMATES	2007-08 SUPPLEMENTARY ESTIMATES	2007-08 TOTAL APPROPRIATIONS
Operating Expenditures (including Salaries & Employee Benefits)	47.0	-	47.0
2006-07 Operating Budget Carryforward	-	2.1	2.1
Net Transfer of Funds from Other Departments	-	0.9	0.9
Collective Agreement Adjustments	-	0.5	0.5
Funding for Increase Evaluation Capacity	-	0.3	0.3
Internal Audit Funding	-	0.2	0.2
Anti-Drug Strategy Funding	-	0.1	0.1
Canada Graduate Scholarships Program	-	0.1	0.1
Transfer to Grants and Awards	-	(1.5)	(1.5)
<b>Total Operating Expenditures</b>	<b>47.0</b>	<b>2.7</b>	<b>49.7</b>
Grants & Awards	822.5	-	822.5
Funding for Centres of Excellence for Commercialization and Research Program	-	73.5	73.5
2007 Federal Budget Increase	-	37.0	37.0
Canada Graduate Scholarships Program	-	5.9	5.9
International Polar Year Funding	-	3.8	3.8
Net Transfer of Funds from Other Departments	-	1.8	1.8
Transfer from Operating Expenditures	-	1.5	1.5
Re-profiling of Canada Graduate Scholarships	-	(2.0)	(2.0)
<b>Total Grants &amp; Awards</b>	<b>822.5</b>	<b>121.5</b>	<b>944.0</b>
<b>Total 2007-08 CIHR Parliamentary Appropriations</b>	<b>869.5</b>	<b>124.2</b>	<b>993.7</b>
<b>Total 2007-08 Authorities Spent</b>			<b>974.1</b>
<b>Total Lapsed Appropriations for 2007-08</b>			<b>19.6</b>

*Note: The total CIHR budget for 2007-08, as appropriated by Parliament, increased by \$130.2 million over 2006-07 to \$993.7 million. CIHR received an additional \$124.2 million in Parliamentary Appropriations for 2007-08 through the Supplementary Estimates (see table above for details). In addition, CIHR received an additional \$6.0 million for 2007-08 through the Annual Reference Level Update (reflected in the Main Estimates column in the table above) including additional funding for programs such as HIV/AIDS research (\$2.3 million), Public Health Masters and Doctoral Research Awards (\$1.3 million) and Fabry's Disease research (\$1.1 million).*

## FINANCIAL STATEMENT DISCUSSION AND ANALYSIS

### CIHR LAPSED PARLIAMENTARY APPROPRIATIONS IN 2007-08 AS FOLLOWS:

(in millions of dollars)

VOTE	LAPSED APPROPRIATIONS
15 Operating Expenses	2.3
20 Grants	17.3
<b>Total Lapsed Parliamentary Appropriations</b>	<b>19.6</b>

- The majority of funds lapsed in 2007-08 are from Vote 20 (Grants). The large Vote 20 lapse is almost entirely the result of the Canada Research Chairs Program being underspent by \$17.1 million. This variance is due to difficulties encountered by universities in filling the Chairs.
- The lapsed funds in operating expenses are mainly due to projects being cancelled or not starting as quickly as planned, as well as improvements in operational efficiencies. Please note that CIHR is able to carry forward up to 5% of its operating budget from one period into the next fiscal year. This means that CIHR will be able to carry forward approximately \$1.9 million of the lapse in the operating budget and thus increase the 2008-09 fiscal year operating budget.

### RISKS AND UNCERTAINTIES

- Research takes time and a sustained investment. A large portion of CIHR's budget is committed to grants and awards that extend over three to five years. CIHR is continually challenged by the need to provide this longer term funding while maintaining its capacity to fund new projects. To mitigate this risk, CIHR has introduced investment modeling to better forecast the future impacts of funding decisions and the concept of "steady-state" dynamics to ensure relative stability in the number of applications funded and success rates over time.
- Evaluating the results and outcomes of CIHR's funded research is challenging as linkages between health research inputs, outputs and impacts are difficult to trace when knowledge develops incrementally over time and through multiple channels. Attribution of credit for research impacts can also be complex, as impacts often result from a number of research projects carried out or funded either collaboratively or independently in the same and/or different countries. In addition, the application of research findings is influenced by a variety of contextual factors. CIHR's approach focuses on measurement of impact with the recognition that certain impacts will not easily be attributable to specific organizations or activities.
- One critical consequence of this challenge of measuring impacts is that CIHR does not have all the information and evidence it requires to optimize its programming and allocate its resources. To mitigate this risk CIHR has invested heavily in its evaluation and analysis capacity and this is starting to yield tangible returns. For example, in 2008-09 CIHR will be implementing its End-of-Grant



Reporting policy that will require researchers to document the impacts that their research has had in terms of science and influence on health care providers and health policy makers. Moreover, CIHR is working on a five-year strategic plan (Blueprint II) that will refine the organization's objectives and provide a framework to guide future programming choices and resource allocation.

- CIHR is also challenged by increasing application pressure and the increasingly high quality of individual grant applications. To maintain excellence, CIHR will continue to rely on peer review to assess applications – the internationally-recognized gold standard methodology. This growth in demand for CIHR resources is more than a reflection of the strength Canada enjoys in health research excellence. From 1998 to 2004, the size of Canada's university faculty grew by over 18%. At the same time, federal programs, such as the Canada Research Chairs (CRC) program and the Canada Foundation for Innovation (CFI), have significantly invested in health research infrastructure and in attracting leading researchers to Canada. CIHR (in collaboration with the other two granting councils and CFI), recently commissioned a study on this "balance of funding" issue. The study examined how investments in research, infrastructure and operations are inter-related and how these should be coordinated in order to maximize benefits. Getting this balance correct will certainly help CIHR meet the needs of Canada's health research community and realize its mandate for excellence.

### **RIISING DEMAND FOR RESEARCH FUNDING**

- CIHR is confronted with increased application pressure from the health research community caused in part by a robust and growing community of practitioners, by CIHR's broadened mandate to serve all health research disciplines and by the significant investments in health-related infrastructure being made by federal and provincial governments and other funders.
- Notwithstanding the more than doubling of CIHR's budget, success rates in major competitions have fallen at a time when the number of applications that are assessed by peer review committees as deserving funding has tripled over that same time frame.
- Going forward, it will be very important for CIHR to rigorously prioritize its activities and to seek additional funding to ensure that Canada does not lose many of its outstanding investigators and fully reap the contribution they can make to improving the health of Canadians, increasing the effectiveness of health services and products and strengthening the Canadian health care system.
- The 2008 Federal Budget included an additional \$34 million of base funding to invest in health research that addresses the health priorities of all Canadians. These priorities include the health needs of northern communities, health problems associated with environmental conditions and food and drug safety. The Budget also contained new funding of \$21 million over two years to establish up to 20 Canada Global Excellence Research Chairs, and new funding of \$25 million over two years to establish a prestigious new Vanier Canada Graduate Scholarship program that will support 500 top Canadian and international doctoral students each year.

## FINANCIAL STATEMENT DISCUSSION AND ANALYSIS

### VARIANCE ANALYSIS

#### CHANGE IN KEY FINANCIAL INDICATORS

As evidenced by the table below, CIHR expenses and other key financial indicators have increased in relative proportion to the increased Parliamentary Appropriations received by CIHR in 2007-08.

(in millions of dollars)

	2007-08	2006-07	INCREASE	% INCREASE
Parliamentary Appropriations	993.7	863.5	130.2	15.1%
Net Cost of Operations	999.0	847.2	151.8	17.9%
Grants & Awards Expenses	956.1	810.2	145.9	18.0%
Operations and Administration Expenses	55.3	49.5	5.8	11.7%
Salaries and Employee Benefits	36.5	31.7	4.8	15.1%

- In 2007-08, the ratio of operations and administration expenses to total expenses was 5.5%, a decrease of 0.3% from 2006-07.

#### CHANGE IN EXPENDITURES BY STRATEGIC OUTCOME

(in millions of dollars)

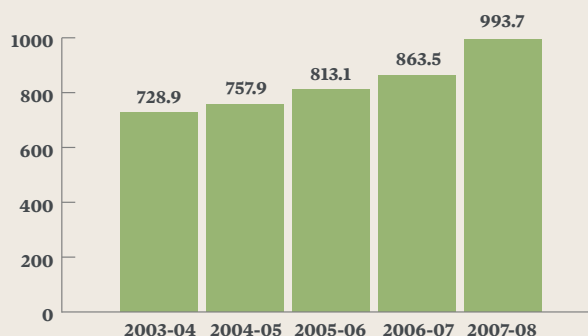
STRATEGIC OUTCOME	2007-08	2006-07	INCREASE	% INCREASE
Health Research	547.8	511.0	36.8	7.2%
Health Researchers in Innovative Environments	317.4	284.3	33.1	11.6%
Transforming Health Research into Action	143.1	62.5	80.6	129.0%
<b>Total Expenses</b>	<b>1,008.3</b>	<b>857.8</b>	<b>150.5</b>	<b>17.5%</b>

- Expenses increased significantly in 2007-08 as compared to 2006-07 due to increased Parliamentary Appropriations.
- The increase to the Health Research Strategic Outcome resulted from CIHR management allocating a significant portion of the 2007 Federal Budget increase to the Open Operating Grants Program.
- The Health Researchers in Innovative Environments Strategic Outcome funding increase is due to increased funding for Institute Strategic Initiatives as well as \$20 million in funding for an endowment to the Gairdner Foundation to support the Canada Gairdner International Awards.
- The increase to the Transforming Health Research into Action Strategic Outcome is mainly due to funding for the new Centres of Excellence for Commercialization and Research (CECR) program, which amounted to \$73.5 million for 2007-08.

## TREND ANALYSIS

### CIHR Parliamentary Appropriations

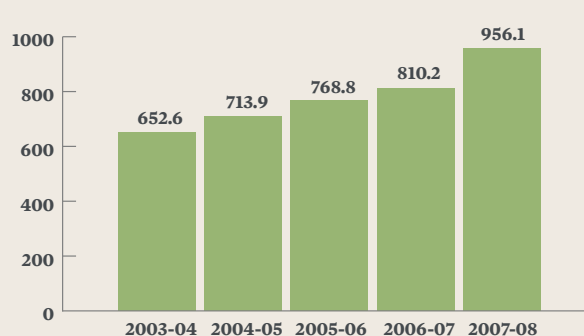
(in millions of dollars)



- CIHR Parliamentary Appropriations have risen steadily over the past five fiscal years, from \$728.9 million in 2003-04 to \$993.7 million in 2007-08.
- CIHR Parliamentary Appropriations have increased by \$264.8 million or 36% since 2003-04, an average yearly increase of 8.1%.

### CIHR Grants and Awards Expenses

(in millions of dollars)



- CIHR Grants and Awards Expenses have increased steadily over the past five fiscal years, from \$652.6 million in 2003-04 to \$956.1 million in 2007-08.
- CIHR Grants and Awards Expenses have increased by \$303.5 million or 47% since 2003-04, an average yearly increase of 10.1%.

### CIHR Net Cost of Operations

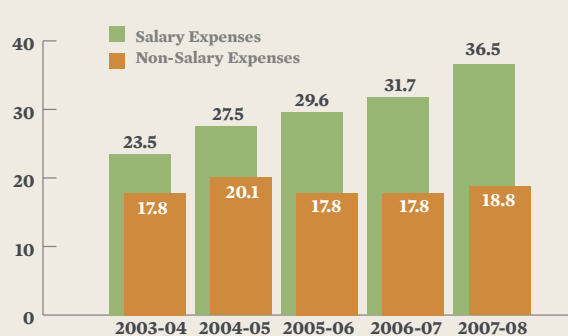
(in millions of dollars)



- CIHR Net Cost of Operations has increased steadily over the past five fiscal years, from \$685.3 million in 2003-04 to \$999.0 million in 2007-08.
- CIHR Net Cost of Operations has increased by \$313.7 million or 46% since 2003-04, an average yearly increase of 10.0%.

### CIHR Operations and Administration Expenses

(in millions of dollars)



- CIHR Operations and Administration Expenses have increased significantly over the past five fiscal years, from \$41.3 million in 2003-04 to \$55.3 million in 2007-08.
- CIHR Operations and Administration Expenses have increased by \$14.0 million or 33.9% since 2003-04.
- In 2007-08, salaries and employee benefits made up 66.2% of total operations and administration expenses, compared to 56.9% in 2003-04.
- As shown in the chart above, the proportion of the operating budget allocated to salaries and employee benefits has increased each year over the past five fiscal years. CIHR management will continue to monitor this trend closely in future fiscal years.



# Auditor's Report and Financial Statements

## Canadian Institutes of Health Research

### MANAGEMENT RESPONSIBILITY FOR FINANCIAL STATEMENTS

Responsibility for the integrity and objectivity of the accompanying financial statements of the Canadian Institutes of Health Research (CIHR) for the year ended March 31, 2008 and all information contained in these statements rests with CIHR's management. These financial statements have been prepared by management in accordance with Treasury Board accounting policies and year-end instructions issued by the Office of the Comptroller General, which are consistent with Canadian generally accepted accounting principles for the public sector.

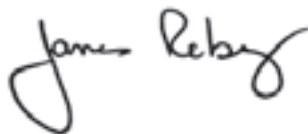
Management is responsible for the integrity and objectivity of the information in these financial statements. Some of the information in the financial statements is based on management's best estimates and judgement and gives due consideration to materiality. To fulfil its accounting and reporting responsibilities, management maintains a set of accounts that provides a centralized record of CIHR's financial transactions. Financial information submitted to the *Public Accounts of Canada* and included in CIHR's *Departmental Performance Report* and *Annual Report* is consistent with these financial statements.

Management maintains a system of financial management and internal control designed to provide reasonable assurance that financial information is reliable, that assets are safeguarded and that transactions are in accordance with the *Financial Administration Act*, are executed in accordance with prescribed regulations, within Parliamentary authorities, and are properly recorded to maintain accountability of Government funds and endowments. Management also seeks to ensure the objectivity and integrity of data in its financial statements by careful selection, training and development of qualified staff, by organizational arrangements that provide appropriate divisions of responsibility and by communications programs aimed at ensuring that regulations, policies, standards and managerial authorities are understood throughout the organization.

The Standing Committee on Performance Measurement, Evaluation and Audit, appointed by the Governing Council of CIHR, has reviewed these statements with management and the auditors, and has reported to the Governing Council. The Governing Council has approved the financial statements.

The financial statements of CIHR have been audited by the Auditor General of Canada, the independent auditor for the Government of Canada.

Approved by:



James Roberge, CMA  
Chief Financial Officer



Pierre Chartrand, PhD  
Acting President

May 30, 2008



Auditor General of Canada  
Vérificatrice générale du Canada

## AUDITOR'S REPORT

To the Canadian Institutes of Health Research  
and the Minister of Health

I have audited the statement of financial position of the Canadian Institutes of Health Research (CIHR) as at March 31, 2008 and the statements of operations, equity and cash flow for the year then ended. These financial statements are the responsibility of CIHR's management. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In my opinion, these financial statements present fairly, in all material respects, the financial position of CIHR as at March 31, 2008 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

Nancy Y. Cheng, FCA  
Assistant Auditor General  
for the Auditor General of Canada

Ottawa, Canada  
May 30, 2008

## AUDITOR'S REPORT AND FINANCIAL STATEMENTS

### STATEMENT OF OPERATIONS FOR THE YEAR ENDED MARCH 31

(in thousands of dollars)

	<u>2008</u>	<u>2007</u>
<b>EXPENSES (NOTE 4)</b>		
Health research	547,858	511,042
Health researchers in innovative environments	317,424	284,348
Transforming health research into action	<u>143,060</u>	<u>62,421</u>
<b>TOTAL EXPENSES</b>	<b><u>1,008,342</u></b>	<b><u>857,811</u></b>
<b>REVENUES (NOTE 5)</b>		
Health research	5,099	6,319
Health researchers in innovative environments	2,954	3,516
Transforming health research into action	<u>1,332</u>	<u>772</u>
<b>TOTAL REVENUES</b>	<b><u>9,385</u></b>	<b><u>10,607</u></b>
<b>NET COST OF OPERATIONS</b>	<b><u><u>998,957</u></u></b>	<b><u><u>847,204</u></u></b>

The accompanying notes are an integral part of these financial statements.



**STATEMENT OF FINANCIAL POSITION  
AS AT MARCH 31**

*(in thousands of dollars)*

	<b>2008</b>	<b>2007</b>
<b>ASSETS</b>		
<b>Financial assets</b>		
Due from the Consolidated Revenue Fund	36,371	15,751
Accounts receivable:		
Other Federal Government departments	296	678
External parties	465	395
Advances	196	196
<b>Total financial assets</b>	<b>37,328</b>	<b>17,020</b>
<b>Non-financial assets</b>		
Prepaid expenses	82	445
Tangible capital assets (Note 6)	3,134	3,904
<b>Total non-financial assets</b>	<b>3,216</b>	<b>4,349</b>
<b>TOTAL ASSETS</b>	<b>40,544</b>	<b>21,369</b>
<b>LIABILITIES</b>		
Accounts payable and accrued liabilities:		
Other Federal Government departments	465	444
External parties	3,894	2,577
Gairdner Foundation grant (Note 7)	20,000	-
Vacation pay and compensatory leave	1,316	1,110
Deferred revenue (Note 8)	12,011	12,730
Employee severance benefits (Note 9)	6,573	5,248
<b>TOTAL LIABILITIES</b>	<b>44,259</b>	<b>22,109</b>
<b>EQUITY OF CANADA</b>	<b>(3,715)</b>	<b>(740)</b>
<b>TOTAL LIABILITIES AND EQUITY OF CANADA</b>	<b>40,544</b>	<b>21,369</b>

Contingent liabilities (Note 10)

Contractual obligations (Note 11)

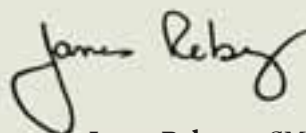
The accompanying notes are an integral part of these financial statements.

Approved by Governing Council:

Approved by Management:



**Pierre Chartrand, PhD**  
Acting President



**James Roberge, CMA**  
Chief Financial Officer

## AUDITOR'S REPORT AND FINANCIAL STATEMENTS

### STATEMENT OF EQUITY AS AT MARCH 31

(in thousands of dollars)

	<u>2008</u>	<u>2007</u>
<b>EQUITY OF CANADA, BEGINNING OF YEAR</b>	<b>(740)</b>	<b>(41)</b>
Net cost of operations	(998,957)	(847,204)
Net cash provided by Government	969,803	844,170
Change in Due from the Consolidated Revenue Fund	20,620	(2,889)
Services provided without charge by other Government departments (Note 12)	<u>5,559</u>	<u>5,224</u>
<b>EQUITY OF CANADA, END OF YEAR</b>	<b><u>(3,715)</u></b>	<b><u>(740)</u></b>

The accompanying notes are an integral part of these financial statements.

**STATEMENT OF CASH FLOW  
FOR THE YEAR ENDED MARCH 31**

*(in thousands of dollars)*

	<b>2008</b>	<b>2007</b>
<b>OPERATING ACTIVITIES</b>		
Net cost of operations	998,957	847,204
Non-cash items:		
Amortization of tangible capital assets	(1,868)	(1,498)
Services provided without charge by other Government departments	(5,559)	(5,224)
Gain on disposal of capital assets	-	4
	(7,427)	(6,718)
Variations in Statement of Financial Position:		
(Decrease) increase in accounts receivable and advances	(312)	358
(Decrease) increase in prepaid expenses	(363)	(97)
(Increase) decrease in liabilities	(22,150)	2,074
	(22,825)	2,335
<b>Cash Used by Operating Activities</b>	<b>968,705</b>	<b>842,821</b>
<b>CAPITAL INVESTMENT ACTIVITIES</b>		
Acquisitions of tangible capital assets	1,098	1,358
Proceeds on disposal of capital assets	-	(9)
<b>Cash Used by Capital Investment Activities</b>	<b>1,098</b>	<b>1,349</b>
<b>FINANCING ACTIVITIES</b>		
<b>NET CASH PROVIDED BY GOVERNMENT OF CANADA</b>	<b>969,803</b>	<b>844,170</b>

The accompanying notes are an integral part of these financial statements.

### NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED MARCH 31, 2008

#### 1. AUTHORITY AND OBJECTIVES

The Canadian Institutes of Health Research (CIHR) was established in June 2000 under the *Canadian Institutes of Health Research Act*, replacing the former Medical Research Council of Canada. It is listed in Schedule II to the *Financial Administration Act* as a departmental corporation.

CIHR's objective is to excel, according to international standards of scientific excellence, in the creation of new knowledge, and its translation into improved health, more effective health services and products, and a strengthened Canadian health care system. CIHR achieves these objectives through three strategic outcomes. The first strategic outcome is outstanding research, achieved by funding excellent and ethical health research across all disciplines that are relevant to health. The second strategic outcome is outstanding researchers in innovative environments, achieved by providing funding to develop and sustain health researchers in vibrant, innovative and stable research environments. The third strategic outcome is transforming health research into action, achieved by CIHR's knowledge translation activities and funding aimed to accelerate the transformation of research results into health benefits for Canadians and an improved health care system as well as helping to move new research breakthroughs toward potential commercial applications.

CIHR is led by a President who is the Chairperson of a Governing Council of not more than nineteen other members appointed by the Governor in Council. The Governing Council sets overall strategic direction, goals and policies and oversees programming, resource allocation, ethics, finances, planning and accountability.

CIHR has thirteen Institutes that focus on identifying the research needs and priorities for specific health areas, or for specific populations, then developing strategic initiatives to address those needs. Each Institute is led by a Scientific Director who is guided by an Institute Advisory Board, which strives to include representation of the public, researcher communities, research funders, health professionals, health policy specialists and other users of research results.

CIHR's grants, awards, and operating expenditures are funded by budgetary authorities. Employee benefits are funded by statutory authorities.

#### 2. SIGNIFICANT ACCOUNTING POLICIES

These financial statements have been prepared in accordance with Treasury Board accounting policies and year-end instructions issued by the Office of the Comptroller General, which are consistent with Canadian generally accepted accounting principles for the public sector. The most significant accounting policies are as follows:

- (a) **Parliamentary appropriations** – CIHR is financed by the Government of Canada through Parliamentary appropriations. Appropriations provided to CIHR do not parallel financial reporting according to generally accepted accounting principles since appropriations are primarily based on cash flow requirements. Consequently, items recognized in the statement of operations and the statement of financial position are not necessarily the same as those provided through appropriations from Parliament. Note 3 provides a high-level reconciliation between the bases of reporting.



- (b) Net cash provided by government** – CIHR operates within the Consolidated Revenue Fund (CRF), which is administered by the Receiver General for Canada. All cash received by CIHR is deposited to the CRF and all cash disbursements made by CIHR are paid from the CRF. The net cash provided by Government is the difference between all cash receipts and all cash disbursements including transactions between departments of the Federal Government.
- (c) Due from the Consolidated Revenue Fund** represents the amount of cash that CIHR is entitled to draw from the Consolidated Revenue Fund without further appropriations, in order to discharge its liabilities.
- (d) Revenues**
- Funds received from external parties for specified purposes are recorded upon receipt as deferred revenues. These revenues are recognized in the period in which the related expenses are incurred.
  - Other revenues are accounted for in the period in which the underlying transaction or event occurred that gave rise to the revenues.
- (e) Expenses** – Expenses are recorded on the accrual basis:
- Grants and awards are recognized when the entitlement has been established, the recipient has met the eligibility criteria, and program authority exists.
  - Vacation pay and compensatory leave are expensed as the benefits accrue to employees under their respective terms of employment.
  - Services provided without charge by other government departments are recorded as operating expenses at their estimated cost.
- (f) Refunds of previous years' expenses** – These amounts include the return of grants and awards funds to CIHR in the current fiscal year for expenses incurred in previous fiscal years due to cancellations; refunds of previous years' expenses related to goods or services; and adjustments of previous years' accounts payable. These refunds and adjustments are recorded as expenses in the financial statements but are recorded as revenue on an appropriation basis and therefore are excluded when determining current year appropriations used.
- (g) Employee future benefits**
- i. Pension benefits: Eligible employees participate in the Public Service Pension Plan, a multiemployer defined benefit plan administered by the Government of Canada. CIHR's contributions to the Plan are charged to expenses in the year incurred and represent the total obligation of CIHR to the Plan. Current legislation does not require CIHR to make contributions for any actuarial deficiencies of the Plan.
  - ii. Severance benefits: Employees are entitled to severance benefits under labour contracts or conditions of employment. These benefits are accrued as employees render the services necessary to earn them. The obligation relating to the benefits earned by employees is calculated using information derived from the results of the actuarially determined liability for employee severance benefits for the Government as a whole.
- (h) Accounts receivable** – These are stated at amounts expected to be ultimately realized. A provision for doubtful accounts is made for any amounts where recovery is considered uncertain.

## AUDITOR'S REPORT AND FINANCIAL STATEMENTS

- (i) **Contingent liabilities** – Contingent liabilities are potential liabilities which may become actual liabilities when one or more future events occur or fail to occur. To the extent that the future event is likely to occur or fail to occur, and a reasonable estimate of the loss can be made, an estimated liability is accrued and an expense is recorded. If the likelihood is not determinable or an amount cannot be reasonably estimated, the contingency is disclosed in the notes to the financial statements.
- (j) **Tangible capital assets** – All tangible capital assets having an individual initial cost of \$5,000 or more are recorded at their acquisition cost. Amortization of tangible capital assets is done on a straight-line basis over the estimated useful life of the capital asset as follows:

ASSET CLASS	AMORTIZATION PERIOD
Informatics hardware	3-5 years
Informatics software	3 years
Office equipment	10 years
Motor vehicles	5 years

Amounts included in work-in-progress are uncompleted capital projects which are transferred to the appropriate asset class upon completion, and are then amortized according to CIHR's policy.

- (k) **Measurement uncertainty** – The preparation of these financial statements in accordance with Treasury Board accounting policies and year-end instructions issued by the Office of the Comptroller General, which are consistent with Canadian generally accepted accounting principles for the public sector, requires management to make estimates and assumptions that affect the amounts of assets, liabilities, revenues and expenses reported in the financial statements. At the time of preparation of these statements, management believes the estimates and assumptions to be reasonable. The most significant items where estimates are used are contingent liabilities, the liability for vacation pay and compensatory leave, employee severance benefits, the useful life of tangible capital assets, and services provided without charge. Actual results could differ significantly from those estimated. Management's estimates are reviewed periodically and, as adjustments become necessary, they are recorded in the financial statements in the year they become known.

**3. PARLIAMENTARY APPROPRIATIONS**

CIHR receives most of its funding through annual parliamentary appropriations. Items recognized in the statement of operations and the statement of financial position in one year may be funded through parliamentary appropriations in prior, current or future years. Accordingly, CIHR has different net results of operations for the year on a government funding basis than on an accrual accounting basis. The differences are reconciled in the following tables:

**(a) Reconciliation of net cost of operations to current year appropriations used**

*(in thousands of dollars)*

	<b>2008</b>	<b>2007</b>
<b>NET COST OF OPERATIONS</b>	<b>998,957</b>	<b>847,204</b>
Adjustments for items affecting net cost of operations but not affecting appropriations:		
Add (Less):		
Services provided without charge	(5,559)	(5,224)
Gairdner Foundation grant (Note 7)	(20,000)	-
Gain on disposal of capital assets	-	4
Refunds of previous years' expenses	3,087	2,432
Employee severance benefits	(1,325)	(615)
Amortization of tangible capital assets	(1,868)	(1,498)
Vacation pay and compensatory leave	(206)	(200)
Other adjustments	249	(94)
	(25,622)	(5,195)
Adjustments for items not affecting net cost of operations but affecting appropriations:		
Add (Less):		
Acquisitions of tangible capital assets	1,098	1,358
Prepaid expenses	(363)	(97)
<b>CURRENT YEAR APPROPRIATIONS USED</b>	<b>974,070</b>	<b>843,270</b>

## AUDITOR'S REPORT AND FINANCIAL STATEMENTS

### (b) Appropriations provided and used

(in thousands of dollars)

	<u>2008</u>	<u>2007</u>
<b>PARLIAMENTARY APPROPRIATIONS PROVIDED</b>		
Vote 15 – Operating expenditures	45,060	43,021
Less:		
Lapsed appropriation	(2,333)	(3,657)
	<u>42,727</u>	<u>39,364</u>
Vote 20 – Grants	943,967	816,183
Less:		
Lapsed appropriation	(17,251)	(16,536)
	<u>926,716</u>	<u>799,647</u>
Statutory contributions to employee benefit plans	<u>4,627</u>	<u>4,259</u>
<b>CURRENT YEAR APPROPRIATIONS USED</b>	<u><b>974,070</b></u>	<u><b>843,270</b></u>

### (c) Reconciliation of net cash provided by Government to Parliamentary appropriations used

(in thousands of dollars)

	<u>2008</u>	<u>2007</u>
Net cash provided by Government	969,803	844,170
Refunds of previous years' expenses	3,087	2,432
Cash proceeds on disposal of capital assets	-	9
	<u>972,890</u>	<u>846,611</u>
Change in net position in the Consolidated Revenue Fund		
Variation in accounts receivable and advances	312	(358)
Variation in accounts payable and accrued liabilities	1,338	(1,273)
Variation in deferred revenue	(719)	(1,616)
Other adjustments	249	(94)
	<u>1,180</u>	<u>(3,341)</u>
<b>CURRENT YEAR APPROPRIATIONS USED</b>	<u><b>974,070</b></u>	<u><b>843,270</b></u>



**4. EXPENSES**

*(in thousands of dollars)*

	<b>2008</b>	<b>2007</b>
<b>GRANTS AND AWARDS</b>		
Open competitions	516,541	487,917
Strategic initiatives	210,842	195,762
Gairdner Foundation grant (Note 7)	20,000	-
Institute support grants	13,000	13,000
Knowledge translation	8,224	3,864
Canada Research Chairs	86,482	82,205
Networks of Centres of Excellence	27,500	27,500
Centres of Excellence in Commercialization and Research	73,512	-
Total grants and awards	956,101	810,248
Less: Refunds of previous years' grants and awards	(3,087)	(1,972)
	953,014	808,276
<b>OPERATIONS AND ADMINISTRATION</b>		
Salaries and employee benefits	36,551	31,683
Professional and special services	5,300	4,845
Travel	3,696	3,425
Accommodation	3,399	3,314
Amortization of tangible capital assets	1,868	1,498
Furniture, equipment and software	1,813	1,998
Communication	1,439	1,450
Other	1,262	1,322
Total operations and administration	55,328	49,535
<b>TOTAL EXPENSES</b>	<b>1,008,342</b>	<b>857,811</b>

## AUDITOR'S REPORT AND FINANCIAL STATEMENTS

### 5. REVENUES

(in thousands of dollars)

The following are the revenues recognized for the year:

	<u>2008</u>	<u>2007</u>
Donations for health research	9,235	9,362
Cost sharing agreements with other Government departments	150	1,240
Gain on disposal of capital assets	-	4
Endowments for health research	-	1
<b>TOTAL REVENUES</b>	<u><b>9,385</b></u>	<u><b>10,607</b></u>

### 6. TANGIBLE CAPITAL ASSETS

(in thousands of dollars)

Capital asset class	Cost				Accumulated amortization				2008 Net Book Value	2007 Net Book Value
	Opening balance	Acquisitions	Transfers, disposals and write-offs	Closing balance	Opening balance	Amortization	Transfers, disposals and write-offs	Closing balance		
Informatics hardware	1,928	142	-	2,070	1,546	169	-	1,715	355	382
Informatics software	7,780	953	-	8,733	4,531	1,659	-	6,190	2,543	3,249
Office equipment	345	-	-	345	123	35	-	158	187	222
Vehicles	32	-	-	32	4	5	-	9	23	28
Work-in-progress	23	3	-	26	-	-	-	-	26	23
<b>Total</b>	<b>10,108</b>	<b>1,098</b>	<b>-</b>	<b>11,206</b>	<b>6,204</b>	<b>1,868</b>	<b>-</b>	<b>8,072</b>	<b>3,134</b>	<b>3,904</b>

Amortization expense (in thousands of dollars) for the year ended March 31, 2008 is \$1,868 (2007 - \$1,498).

**7. GAIRDNER FOUNDATION GRANT**

On March 31, 2008, CIHR entered into a funding agreement with the Gairdner Foundation, a not-for-profit, independent organization devoted to the recognition of outstanding achievement in health research worldwide. CIHR agreed to provide the Gairdner Foundation with a grant at the requisition of the Minister of Health in the amount of \$20,000,000. The purpose of the endowment is to support and enhance the Gairdner International Awards, which are among the world's most respected health prizes. The Gairdner Foundation has proposed to use the investment proceeds from the endowment to increase the value of each Gairdner International Award to \$100,000 in keeping with their stature. The endowment will also be used to establish a new individual award for global health to be named the "Canada Gairdner Global Health Award". After the endowment is disbursed, the Gairdner International Awards will be renamed the "Canada Gairdner International Awards".

**8. DEFERRED REVENUE**

Monies received as donations from various organizations and individuals for health research as well as interest on endowments are recorded as deferred revenue until such time as they are disbursed in accordance with agreements between the contributor and CIHR or in accordance with the terms of the endowments.

The transactions relating to these accounts are as follows:

*(in thousands of dollars)*

	<b>2008</b>	<b>2007</b>
<b>DONATIONS FOR HEALTH RESEARCH</b>		
Balance, beginning of the year	12,726	14,344
<i>Add:</i>		
Donations received	8,049	7,191
Interest earned	465	553
<i>Less:</i>		
Grants expensed	9,235	9,362
<b>BALANCE, END OF THE YEAR</b>	<b>12,005</b>	<b>12,726</b>
<b>INTEREST ON ENDOWMENTS FOR HEALTH RESEARCH</b>		
Balance, beginning of the year	4	2
<i>Add:</i>		
Interest earned	3	3
<i>Less:</i>		
Miscellaneous expenses	1	1
<b>BALANCE, END OF THE YEAR</b>	<b>6</b>	<b>4</b>
<b>TOTAL DEFERRED REVENUE</b>	<b>12,011</b>	<b>12,730</b>

**9. EMPLOYEE BENEFITS**

Employees of CIHR are entitled to specific benefits on or after termination or retirement, as provided for under various collective agreements or conditions of employment.

**(a) Pension benefits:** CIHR's employees participate in the Public Service Pension Plan, which is sponsored and administered by the Government of Canada. Pension benefits accrue up to a maximum period of 35 years at a rate of 2% per year of pensionable service, multiplied by the average of the best five consecutive years of earnings. The benefits are integrated with the Canada/Quebec Pension Plans benefits and they are indexed to inflation. Both the employees and CIHR contribute to the cost of the Plan. CIHR's responsibility with regard to the Plan is limited to its contributions. Actuarial surpluses or deficiencies are recognized in the financial statements of the Government of Canada, as the Plan's sponsor.

The 2007-08 expense represents approximately 2.1 times (2.3 in 2006-07) the contributions by employees.

CIHR's and employees' contributions to the Public Service Pension Plan for the year were as follows:

*(in thousands of dollars)*

	<u>2008</u>	<u>2007</u>
CIHR's contributions	3,373	3,139
Employees' contributions	1,584	1,378

**(b) Severance benefits:** CIHR provides severance benefits to its employees based on eligibility, years of service and final salary. These severance benefits are not pre-funded. Benefits will be paid from future appropriations. Information about the severance benefits, measured as at March 31, is as follows:

*(in thousands of dollars)*

	<u>2008</u>	<u>2007</u>
Accrued benefit obligation, beginning of year	5,248	4,633
Expense for the year	1,624	898
Benefits paid during the year	(299)	(283)
<b>ACCRUED BENEFIT OBLIGATION, END OF YEAR</b>	<u><u>6,573</u></u>	<u><u>5,248</u></u>



**10. CONTINGENT LIABILITIES**

A legal suit for employment equity was initiated by the Public Service Alliance of Canada against Her Majesty the Queen naming certain separate employer organizations of the Government of Canada, including the Canadian Institutes of Health Research (CIHR), as defendants. The amount of this claim, as it relates to CIHR, is estimated to be \$747,000. In management's opinion, the outcome of this litigation is not presently determinable and no estimated liability has been accrued or expense recorded in the financial statements.

CIHR may be subject to other claims in the normal course of business. In management's view, these claims do not have any material impact on the financial statements and consequently, no provision has been made for these claims.

**11. CONTRACTUAL OBLIGATIONS**

CIHR is committed to disburse grants and awards in future years subject to the appropriation of funds by Parliament. In addition, the nature of CIHR's operating activities result in some multi-year contracts whereby CIHR will be committed to make some future payments when the goods or services are rendered. Future year contractual obligations are as follows:

<i>(in thousands of dollars)</i>	2009	2010	2011	2012	2013 AND THEREAFTER	TOTAL
Grants and awards	739,175	537,309	363,679	197,477	119,781	1,957,421
Operating	2,091	418	2	-	-	2,511
<b>Total</b>	<b>741,266</b>	<b>537,727</b>	<b>363,681</b>	<b>197,477</b>	<b>119,781</b>	<b>1,959,932</b>

**12. RELATED PARTY TRANSACTIONS**

CIHR is related in terms of common ownership to all Government of Canada departments, agencies, and Crown Corporations. CIHR enters into transactions with these entities in the normal course of business and on normal trade terms.

## AUDITOR'S REPORT AND FINANCIAL STATEMENTS

### (a) Services provided without charge by other Government departments

During the year, CIHR received services which were obtained without charge from other Government departments. The estimated costs of these services have been included as an expense in the department's Statement of Operations in the following amounts:

*(in thousands of dollars)*

	<u>2008</u>	<u>2007</u>
Accommodation provided by Public Works and Government Services Canada	3,399	3,314
Employer's contribution to the health and dental insurance plans provided by Treasury Board Secretariat	2,027	1,772
Audit services provided by the Office of the Auditor General of Canada	<u>133</u>	<u>138</u>
<b>TOTAL SERVICES PROVIDED WITHOUT CHARGE BY OTHER GOVERNMENT DEPARTMENTS</b>	<u><u>5,559</u></u>	<u><u>5,224</u></u>

### (b) Administration of programs on behalf of other Government departments

CIHR administers funds received from other federal departments and agencies to issue grants, awards and related payments on their behalf. During the year, CIHR administered \$150,000 (\$1,239,838 in 2007) in funds for grants and awards. These amounts are reflected in CIHR's Statement of Operations as both revenues and expenses.

### (c) Administration of CIHR funds by other Government departments

Other federal departments and agencies administer funds on behalf of CIHR to issue grants, awards and related payments. During the year, other federal departments and agencies administered \$91,061,335 (\$87,331,623 in 2007) in funds for grants and awards, primarily pertaining to the Canada Research Chairs program. These amounts are reflected in CIHR's Statement of Operations as expenses.

## 13. FINANCIAL INSTRUMENTS

The fair values of financial assets and liabilities approximate the carrying amounts of these instruments due to the short period to maturity.