Canadian Institutes of Health Research
Instituts de recherche en santé du Canada

innovate / *v. i.* To break down silos in order to improve the health of Canadians, strengthen the health system and stimulate the economy. — *Cf. Canadian Institutes of Health Research.*

CIHR IRSC
Canadian Institutes of Health Research
Instituts de recherche en santé du Canada

Canada

For further information, please contact:
Canadian Institutes of Health Research
410 Laurier Avenue West, 9th Floor
Address Locator 4209A
Ottawa, Ontario K1A 0W9
Telephone: (613) 941-2672
Fax: (613) 954-1800
E-mail: info@cihr-irsc.gc.ca
Web site: www.cihr-irsc.gc.ca

Cat. No. MR21-39/2002
ISBN 0-662-66857-X

"Health research is not only driving the convergence of a very diverse array of disciplines, industries and sectors of society, it is also creating new businesses and careers, and leading to a fundamentally new understanding of health and disease that will save both lives and money."

Dr. Alan Bernstein, President, *Canadian Institutes of Health Research*

CIHR IRSC
Canadian Institutes of Health Research
Instituts de recherche en santé du Canada

Acetylcholine (neurotransmitter) crystals dissolving

TABLE OF CONTENTS

Introduction

By any measure, Canada is one of the world's most fortunate nations. Canadians are blessed with a resource-rich and spectacular natural environment. We are among the healthiest, safest and most affluent people, thanks to a history of hard work, creativity and ingenuity—qualities Canada must continue to call upon in response to recent, fundamental shifts in the world economy.

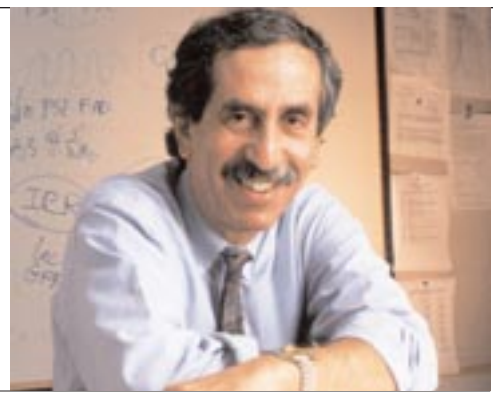
Prosperity is measured globally in this economy, and in the currency of knowledge. Countries that succeed recognize that the greatest benefits derive from a readiness to innovate—to accept change, to embrace new ideas, to take greater risks. If Canada is to secure a competitive advantage in the global, knowledge-based economy, the country must optimize its capacity to innovate.

With this in mind, the Government of Canada recently launched its Innovation Strategy, the foundation for a bold nationwide effort to enhance Canada's culture of excellence, spirit of innovation, and wealth of new ideas. The strategy proposes goals, targets and federal priorities in four key areas: knowledge performance, skills, the innovation environment, and strengthened communities.

This document, *Innovate*, explores the efforts of the Canadian Institutes of Health Research (CIHR) to help fulfill the goals of the Innovation Strategy. It examines CIHR's leadership role in determining health research directions, and in translating research knowledge into products and services that will improve the lives of Canadians and others throughout the world.

***Innovate* provides a glimpse inside the exciting revolution in health research that's currently underway in Canada—a revolution that will help propel this country's innovation efforts and ensure a healthier society and a more prosperous, dynamic, knowledge-driven economy.**

President's Message



According to an editorial in the August 2002 edition of the *Harvard Business Review*, "innovation is all about breaking down silos." If our country is to excel in today's economy, we as Canadians must bring together diverse sectors, technologies, ideas and people to drive innovative thinking and transform new knowledge into action. Arguably, health research is among the most convergent of economic sectors. Robotics, genomics, proteomics, nanotechnology, information technology and telecommunications, mathematics, managerial expertise, construction know-how, the humanities, as well as biological, clinical and social sciences are coalescing around the challenges and opportunities presented by human health and the eradication of disease.

Not only is health research driving the convergence of an array of industries—spawning new businesses and career paths—it is also leading to a new understanding of health and disease that will save both lives and money. Research sponsored by the Mary Lasker Charitable Trust in the United States has illustrated that "the development of lithium for the treatment of manic depressive illness results in health cost savings of more than $9 billion annually; that preventing hip fractures in post-menopausal women at risk for osteoporosis saves $333 million annually; and that a 17-year program, which invested only $56 million in research on testicular cancer, has led to a 91-percent cure rate and an annual savings of $166 million."

Health is the largest sector in the knowledge-based economy, making more than $100 billion in expenditures annually and employing thousands of Canadians. Many experts feel health will be the principal driver of economic growth in the 21st century. For example, according to André Marcheterre, President of Merck Frosst Canada & Co., "there is perhaps no other time in history when progress in the health research industries has been so clearly linked to economic prosperity."

The Government of Canada is equally aware of health's crucial economic role. In *Follow the Leaders, Canadian Innovation in Biotechnology, 2002*, the government observed that: "As the 21st century unfolds, the health sector is emerging as the

largest and most important driver of the global economy… the growth rate in health-related knowledge in the century ahead will exceed the growth rate that the information-technology sector experienced in the 20th century. In fact, such predictions are the logical endpoint of the recent convergence of health science and information technology, which is driving recent advances in biotechnology."

In the past, governments were innovative in the promotion of resource and technology-based sectors. Today, governments across Canada invest in research—the foundation of better health, an improved health care system, and an innovative knowledge-based economy. The number of provincial health research agencies has doubled in the past two years alone: British Columbia's Michael Smith Foundation for Health Research and the Nova Scotia Foundation for Health Research joining the Fonds de la recherche en santé du Québec and the Alberta Heritage Foundation for Medical Research. Federally, the Canadian Institutes of Health Research (CIHR) was launched in June 2000.

Coupled with other federal investments in research—including the Canadian Foundation for Innovation, the Canada Research Chairs, and Genome Canada—Canada now has a strong foundation for future growth. CIHR, partner institutions, the provinces and territories, health charities and industry have responded to recent federal and provincial investments in research with new energy and focus. Together, we have aligned our missions to deliver a rich portfolio of programs and initiatives designed to propel the health sector forward and secure Canada's international competitiveness at the vanguard of innovation.

Alan Bernstein, OC, PhD, FRSC
President, Canadian Institutes of Health Research

A Mandate to Innovate

AN INNOVATIVE HEALTH RESEARCH ENTERPRISE UNLIKE ANY OTHER IN THE WORLD

A revolution in research

In creating CIHR, the Government of Canada envisioned an innovative health research agency that would address not only the geographic challenges facing researchers distributed across the vastness of this country, but also the traditional professional boundaries that created disparate disciplinary silos. Canada needed an open and responsive health research agency that would put the country's full research capacity to the task of ensuring better health for Canadians.

In response to this challenge, CIHR is committed to revolutionizing health research in Canada. Conceived in the era of the knowledge-based economy, CIHR is well positioned to respond to the demands of the Innovation Strategy. According to its mission, CIHR excels in the creation of new knowledge and its translation into improved health for Canadians, a stronger health system, and a more robust economy. The agency's unique structure integrates all aspects of health research, breaking down traditional barriers and facilitating new levels of interdisciplinary collaboration.

An innovative structure

CIHR integrates research through an interdisciplinary structure unlike any other in the world. The agency is comprised of 13 virtual institutes that each undertake research in four critical areas: biomedical, clinical, health systems and services, and population health. These institutes are *virtual* because they are not located in fixed buildings. Rather, the institutes exist as part of a larger national research partnership—a collaborative network that links researchers, universities, hospitals, industry, governments, communities, charities, and patient groups across Canada.

CIHR's virtual structure is enhanced by an innovative approach to guiding and informing the progress of all 13 institutes. This approach draws on the broad expertise of partners from across the country—researchers, research users and members of the general public who serve on individual Institute Advisory Boards (IABs). Over 200 IAB members support and advise each institute's scientific director, linking CIHR to the wider research community, and providing a means through which other stakeholders can inform and influence CIHR's priorities for health research.

Toward better health for all Canadians

A truly innovative health research model, CIHR has captured the attention of the international research community. Since its inception in June 2000, the agency has welcomed numerous representatives of foreign health research organizations eager to learn about CIHR's innovative approach.

More importantly, however, CIHR's inclusive and integrative approach is generating a critical mass of Canadian research expertise, accelerating not only this country's ability to respond to emerging health concerns, but also its capacity to translate discoveries into practical solutions—products and procedures that will enhance the health of Canadians.

Knowledge and Opportunity

GENERATING NEW KNOWLEDGE AND TRANSLATING RESEARCH INTO IMPROVED HEALTH FOR CANADIANS AND NEW OPPORTUNITIES FOR CANADIAN INDUSTRY

Creating new knowledge

A recent analysis of U.S. patents revealed that more than 70 percent of biotechnology citations were for research papers originating solely at public-science institutions. This analysis suggests not only that scientific progress directly propels the innovation process, but also that government-sponsored research is critical to advancing scientific knowledge.

CIHR is fully aware of the fundamental importance of discovery research and makes its largest commitments to programs engaged in this critical first step. CIHR supports the creation of new knowledge through both open and strategic grants, as well as awards programs. Approximately 75 percent of CIHR's budget funds problem-based research initiated by individual investigators; 25 percent supports strategic initiatives at CIHR's 13 institutes to address specific health priorities and research opportunities.

CIHR's Institute of Genetics and its Institute of Musculoskeletal Health and Arthritis are partnering to fund the next generation of inventions. The objectives of this program are to promote the development of research tools, techniques, devices and methodologies that potentially have a high impact on biomedical research; to improve the diagnosis or treatment of patients; and to promote the culture of invention in Canada.

Committed to the future

CIHR recognizes that research is an investment in the future—that excellence is achieved through a long-term commitment to the creation and use of new research knowledge. Nonetheless, after only two short years, the benefits of many CIHR-funded projects are clearly evident.

PREPARING TOMORROW'S RESEARCHERS

Dr. Francis Plummer of the University of Manitoba is currently Scientific-Director General of Health Canada's National Microbiology Laboratory in Winnipeg. He is perhaps best known for the CIHR-funded studies he has conducted on apparent HIV-1 immunity in prostitutes in Nairobi. Through investigations in Kenya and Canada, Dr. Plummer hopes to develop a vaccine for HIV/AIDS based on the genetic and immunologic factors derived from studies of women in Nairobi. Dr. Plummer has also received a CIHR Strategic Training grant to develop an educational program for infectious-disease researchers. The program will support trainees in Canada, India and Africa, among other locations. Through a transdisciplinary approach, Dr. Plummer and his team will cover a variety of subjects, from bioterrorism response to intellectual property issues. The goal is to help develop well-informed, well-rounded scientists who will lead the future of infectious-disease research.

WRITING RULES OF ENGAGEMENT

Foot, ankle, knee, neck and brain injuries are among the most common to appear in hospital emergency rooms. Dr. Ian Stiell, a CIHR Distinguished Investigator at the University of Ottawa, has provided emergency room physicians with guidance on when and how to order radiographs for these injuries. The Ottawa Ankle and Knee Rules, and the Canadian C-Spine and CT Head Rules have contributed to more effective treatments for the injured and more cost-effective procedures for hospitals. Dr. Stiell is also widely known for his research into both in-hospital and out-of-hospital resuscitations. This research could provide valuable evidence about the relative effectiveness of pre-hospital programs and on the mortality and morbidity rates among patients with cardiac arrest, major trauma and respiratory distress.

Engaging the health research community

At CIHR, innovation is about more than research itself; it's also about creating new mechanisms and approaches that facilitate the rapid creation and implementation of valuable research knowledge. That's why the agency has moved quickly to engage partners in the private and not-for-profit sectors, transforming how health research is defined, organized and funded in Canada:

- CIHR's 13 institutes respond rapidly to emerging public health issues. In recent months, concerns have arisen throughout Canada about the safety of food and water supplies. In response, CIHR's Institute of Infection and Immunity last year formed a partnership with more than 20 federal government departments, industry associations and health networks. This unique partnership will reduce the risk of food- and water-borne disease through the application of interdisciplinary science and research.
- CIHR has developed Canada's first national agenda on health research. The agenda identifies four strategic directions, the achievement of which will bring about new knowledge, stimulate economic growth and ensure health benefits for all Canadians:

1 Build Canada's international leadership through national excellence in health research.

2 Integrate the various disciplines of the health research spectrum.

3 Improve the health status of vulnerable populations.

4 Strengthen health research and the health system in the genomics era.

- CIHR's 13 institutes are developing strategic research agendas following broad national consultations and workshops that involved various partners in the health research community. Through these consultations, individual institutes are identifying research priorities in every field. These priorities include: brain and spinal-cord repair; environmental and genetic interactions in circulatory and respiratory diseases; obesity and healthy body weight; proteomics; bioinformatics; osteoarthritis; biological and social determinants of healthy aging; investments in population-based databases; health human resources; and health care evaluation and technology assessment.

- Working together, CIHR's institute scientific directors are also identifying priority interdisciplinary research initiatives that address national priorities and build on specific research strengths across Canada. For example, Dr. Rémi Quirion, scientific director of the Institute of Neurosciences, Mental Health and Addiction, leads an initiative on regenerative medicine. Other priorities include: rural and northern health; global health; environmental influences on health; repair and rehabilitation in cases of intentional and unintentional injury; tobacco; clinical research and scientists; reducing health disparities and improving the health of disadvantaged populations; and population platform for integrated gene-environment health research.

Turning research into action

Outstanding research is both a laudable objective in its own right, as well as the engine that drives the development of new products, practices and policies that will improve the health and quality of life of Canadians and people around the world. In the knowledge-based economy, CIHR recognizes that research must be viewed holistically, and that the opportunities to be seized through effective knowledge translation cannot be ignored. As a result, CIHR formed a Knowledge Translation unit to spearhead the agency's efforts in this field. Through the unit—and a variety of other initiatives—CIHR works closely with researchers and partners to enhance the commercial and public viability of research. These efforts ensure that research moves effectively from laboratories and offices to the marketplace and clinics for the ultimate benefit of Canadians.

The **CIHR Randomized Controlled Trials Unit** recognizes clinical trials that involve humans are critical to the development of more effective diagnostic, therapeutic and preventive strategies. This innovative program aims to trigger broader clinical research, such as the exploration of the social aspects of population health.

The **Proof of Principle (POP) Program** improves the transfer of knowledge and technology derived from peer-reviewed funded research applicable to health. POP program grants provide support for research projects aimed at establishing proof of a discovery's principle, thereby improving the likelihood of its ultimate commercialization.

The **Intellectual Property Management (IPM) Program** strengthens the ability of universities and hospitals to manage their research knowledge, attract potential users and promote the professional development of personnel involved in IPM. The program is managed jointly by CIHR, the Natural Sciences and Engineering Research Council (NSERC), and the Social Sciences and Humanities Research Council. Recently, the University of Manitoba, Brandon University, the University of Winnipeg, the Winnipeg Health Sciences Centre, and CancerCare Manitoba received an IPM grant to develop and foster a consortium that will build on that province's evolving strengths in IP management. CIHR IPM funds will

HOPE AND DREAM

When the internationally recognized Heart Outcomes Prevention Evaluation (HOPE) concluded in 1999, McMaster University's Dr. Salim Yusuf confirmed that the drug ramipril could improve survival rates for high-risk cardiovascular patients and reduce their future risk of heart attack or stroke. While this ground-breaking research has saved countless lives and millions of dollars, it has also led to further exciting research into the use of ramipril, as the HOPE study showed that the drug reduced self-reported cases of diabetes by 34 percent. As a result, Dr. Yusuf joined with his McMaster colleague Dr. Hertzel Gerstein and partners CIHR, King Pharmaceuticals, Aventis Pharma Inc., and GlaxoSmithKline in a new project called DREAM—Diabetes REduction Approaches with Ramipril and Rosiglitazone Medications. Funded in part by CIHR, this research initiative will further examine the use of ramipril in the treatment of diabetes, an illness that affects 142 million people worldwide and costs Canada $10 billion a year.

EXTENDING LIFE, REDUCING COSTS

Dr. Yves Raymond of the Université de Montréal is applying a CIHR POP grant to determine the potential of a unique technology that could improve the life expectancy of thrombosis (stroke) victims and reduce health care costs. Dr. Raymond's research led to the discovery of a specific antibody in patients with lupus that appears to protect these people from thrombosis. Through the POP grant, Dr. Raymond will study this antibody more closely; he hopes to develop new molecules that will not only further protect lupus patients, but also safeguard many others for whom strokes are life-threatening risks.

ADVANCES IN THE FIGHT AGAINST CANCER

Turning lab discoveries into innovative treatments is both the goal of cancer research scientists and the hope of those who suffer from the disease. Thanks to a CIHR/SME grant, Dr. Michel Tremblay, Director of the McGill Cancer Centre, and his colleague Dr. Morag Park are partnering with Kinetek Pharmaceuticals Inc. in Vancouver to validate novel targets for the development of new cancer-gene inhibitors. This project has potential benefits for thousands of cancer patients in Canada alone. Through its work the team will develop screening processes to identify compounds that can eventually be used in clinical trials.

PROMOTING TRANSPLANTATION RESEARCH

Under the CIHR/Rx&D Research Program, CIHR, Wyeth-Ayerst Canada Inc. and the Universities of Alberta and Toronto contributed $3.3 million to fund three Clinical Research Chairs in Transplantation. These Chairs will enable researchers and their respective institutions to develop internationally competitive programs that will advance transplantation research in Canada. Each Chair will receive $1.1 million over the next five years. The Chairs are:

Dr. Norman N. Kneteman, University of Alberta
Studying enhanced prevention and treatment for hepatitis C.

Dr. James Shapiro, University of Alberta
Expanding on the Edmonton Protocol for diabetes treatment.

Dr. Li Zhang, University of Toronto
Investigating mechanisms involved in donor-specific transplant tolerance in the hope of developing novel approaches of antigen-specific suppression.

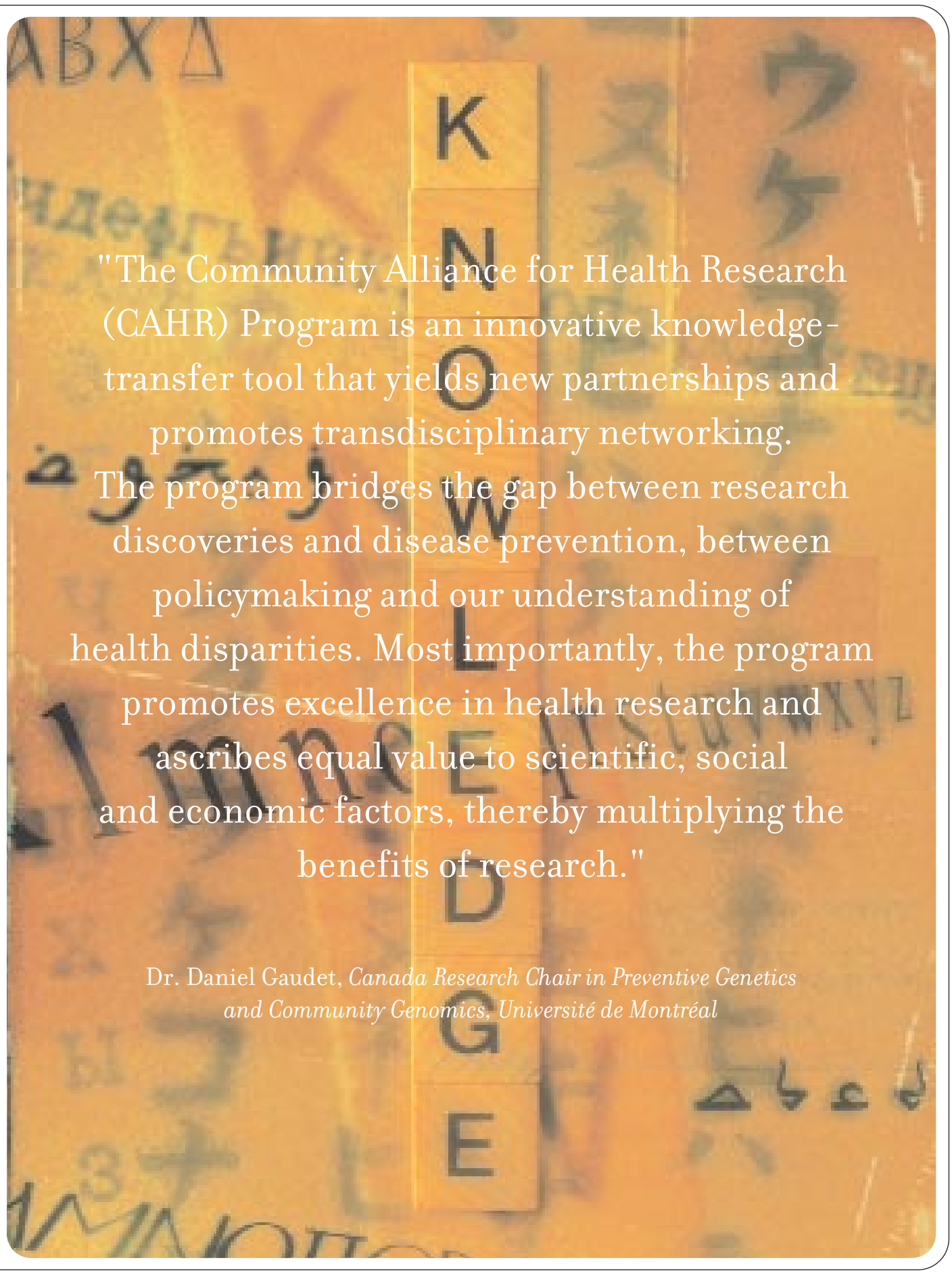
help create a comprehensive training and staff-development program for all consortium members.

To address a shortage of technology-development managers in Western Canada, CIHR, in partnership with Western Economic Diversification and NSERC, has provided funds to **WestLink Innovation Network** to train interns to understand the process of the successful commercialization of new inventions. These interns will each gain practical work experience through three eight-month work terms in the technology-commercialization community.

The **CIHR Small- and Medium-Sized Enterprises (SME) Program** is jointly funded by CIHR and Canadian biotechnology companies. The program strengthens Canada's technology-transfer capacity by supporting research commercialization in start-up companies, university spin-offs and SMEs.

The **CIHR/Rx&D Research Program** is a partnership between CIHR and Canada's Research-Based Pharmaceutical Companies (Rx&D), which are committed to the development, through research, of new drugs for the treatment of human diseases. The program facilitates collaborative partnerships between academia, industry and government to enhance the transfer of publicly funded research to the private sector. Through this program, CIHR helps build relationships among critical sectors engaged in health research by facilitating increased interaction between Rx&D members and research communities in Canada's institutions. These partnerships respect and acknowledge academic values, the use of public funds, and the mission of CIHR. By supporting research of the highest quality, the CIHR/Rx&D partnership is helping to position Canada, Canadian investigators and companies as global leaders.

CIHR is developing new approaches to knowledge translation into health care, health policy, and the health of Canadians by funding research that addresses knowledge translation more broadly. This research is funded both through the open competition stream, as well as programs such as the **Community Alliance for Health Research (CAHR) Program**, which encourages collaboration among communities, organizations and researchers based in local universities, hospitals and other research institutions.



"The Community Alliance for Health Research (CAHR) Program is an innovative knowledge-transfer tool that yields new partnerships and promotes transdisciplinary networking. The program bridges the gap between research discoveries and disease prevention, between policymaking and our understanding of health disparities. Most importantly, the program promotes excellence in health research and ascribes equal value to scientific, social and economic factors, thereby multiplying the benefits of research."

Dr. Daniel Gaudet, *Canada Research Chair in Preventive Genetics and Community Genomics, Université de Montréal*

CREATING A SAFETYNET

Drs. Stephen Bornstein and Barbara Neis of Memorial University in Newfoundland want to understand the causes of—and provide remedies for—occupational accidents and diseases among coastal workers primarily in the fisheries and oil and gas sectors. That's why these researchers launched SafetyNet, a CIHR-funded CAHR that brings together more than 60 researchers and nearly 40 partner organizations from academia, health care, labour and all levels of government. SafetyNet will conduct the most extensive research ever conducted into occupational health and safety in Atlantic Canada. This five-year multidisciplinary, multi-sectoral research project is a pivotal first step in establishing an east-coast centre of excellence in this field.

SafetyNet's first project, currently underway, is examining cases of chronic asthma among 700 workers in crab-processing plants across Newfoundland. In the project's first stage, researchers are surveying health professionals, plant managers and workers to gauge knowledge of associated health risks.

REDUCING HEALTH CARE COSTS

Of the more than 10,000 pacemakers implanted annually in Canada, over 40 percent are dual-chamber types which cost $2,500 more than single-chamber devices. Research led by Dr. Stuart Connolly of McMaster University showed that the more expensive version had few advantages over the single chamber. The savings promise to be substantial: up to $10M per year. CIHR's continued support for Dr. Connolly's research will enable Canada's health care system to profit from this new knowledge.

The future of knowledge translation

CIHR is committed to effective knowledge translation, and is actively exploring innovative approaches to the practical application of research discoveries:

- Currently, CIHR and the National Research Council (NRC) are developing an innovative program that transfers academic research to SMEs through the NRC's Industrial Research Assistance Program (IRAP). Under this new initiative, CIHR-funded research will be screened for commercialization potential and submitted to NRC's IRAP program for further research and development by industry.
- Researchers must now describe their plans for knowledge translation when applying for certain CIHR grants. The agency evaluates the quality of these strategies as part of the proposal-assessment process.
- CIHR is funding research to examine the broader implications of knowledge translation. For instance, studies will explore how knowledge-transfer principles and practices can be integrated into training and continuing education to ensure health professionals will be effective users of research findings throughout their careers.
- Canadians often look to the media for information about health research. To encourage young people to pursue careers as science writers and journalists, CIHR this year established **Graduate Science Writer Scholarships.** The scholarships are open to outstanding individuals who have been accepted into recognized journalism or communications degree programs, or who have human-health related degrees.

Skills and Expertise

ENSURING THAT CANADA HAS THE HIGHLY QUALIFIED PEOPLE REQUIRED TO COMPETE IN A KNOWLEDGE-BASED WORLD

Retaining and attracting the world's best and brightest

If Canada is to remain globally competitive, the country must act to retain and attract the talent that will fuel its innovation performance. Currently, international competition for research expertise is intense; estimates suggest 100,000 new researchers and scientists will be needed in Canada by 2010, so the competition for talent will undoubtedly become more aggressive.

CIHR's commitment to the careers and training of Canadian researchers is substantial. With a current annual investment of more than $80 million, CIHR provides more than 2,400 career and training awards each year. In addition, research grants support more than 2,000 trainees.

Competing on the world stage

Health research is an international endeavour and the best researchers will only be attracted to Canada if we provide them opportunities to realize their dreams. These researchers will, in turn, attract colleagues—as well as additional resources—enhancing Canada's capacity for and quality of research. For this reason, CIHR post-doctoral fellowships are open to foreign applicants, providing their research is done in Canada; CIHR also places no restrictions on the nationality of students supported through grants and training programs. Conversely, CIHR supports Canadian trainees who train in other countries, and recognizes the value of international relationships and insights to Canada's own research perspective.

CIHR is also addressing critical gaps in the research community by providing transition programs and research-personnel awards that enable professionals to increase their knowledge and explore new areas of health research.

A new model for health research training in the 21st century

Health research is becoming increasingly multidisciplinary and multi-sectoral, involving researchers, caregivers, industry, policymakers, and governments. CIHR and its 13 institutes recognize the importance of developing new training models for young people in the 21st century. As a result, CIHR launched the **Strategic Training Initiative in Health Research (STIHR)**—the most ambitious and innovative training program of its kind in North America. Propelled by CIHR's 13 institutes and their partners—health charities, provincial governments and industry—STIHR recognizes that Canada's success as an innovative nation depends on researchers who address increasingly complex health challenges. STIHR will contribute to this next generation of researchers by developing multidisciplinary experts who thrive in collaborative work environments.

To secure STIHR support, training programs must:

- embrace diverse research disciplines and methodological approaches to resolve major health issues and scientific challenges;

- integrate training and discussion on ethical issues related to research;
- develop communication, teamwork and leadership skills; and
- incorporate effective research strategies that turn research into action.

STIHR funding is provided in the form of block grants, and enables project leaders to recruit both nationally and internationally. In the first funding round, CIHR received 250 applications from every area of health research and every part of Canada. Following a rigorous peer-review process, CIHR's institutes and partners funded 51 training centres—a commitment of nearly $100 million over six years, and a major investment in the future of health research. Applications are now being accepted for the next round of STIHR funding, which will target areas identified by CIHR's institutes as critical to building Canada's research capacity. These areas of focus include the delivery of health services, led by the Institute of Health Services and Policy Research; the creation of policies relating to Canada's aging population, led by the Institute of Aging; obesity and healthy body weight, led by the Institute of Nutrition, Metabolism and Diabetes; and the burgeoning fields of bioinformatics and genomics.

TRAINING TO SUPPORT CANADA'S YOUTH

The Canadian Child Health Clinician Scientist Program (CCHCSP) is a prime example of STIHR's trans-disciplinary focus. Led by Dr. Norman Rosenblum from the Hospital for Sick Children, the program engages a number of CIHR institutes: the Institute of Human Development, Child and Youth Health; the Institute of Aboriginal Peoples' Health; the Institute of Circulatory and Respiratory Health; the Institute of Genetics; and the Institute of Gender and Health. CCHCSP establishes the first national network of 13 Canadian Child and Youth Health Research Centres across the country in partnership with the Hospital for Sick Children Foundation and the B.C. Research Institute for Children's and Women's Health. The program recruits, trains and supports researchers and clinician scientists who have an interest in child and youth health—a field that is severely under-represented and prone to regional differences in Canada. The program takes a novel approach to educating trainees: a core curriculum delivers a common multidisciplinary language of research, while imparting professional skills and values. In the final phase of the program, ongoing mentoring as well as co-funding of new faculty positions in partner institutions will provide an effective, supportive nationwide environment—one that encourages these trained professionals to conduct their research in Canada.

Developing better and broader research skills

CIHR's active and innovative approach to building Canadian research skills and expertise extends to other initiatives and grant programs:

- **New Emerging Team Grants** provide five years of support to develop teams of independent investigators who undertake collaborative multi-disciplinary research. The program is intended to promote both the creation of new teams and the growth of small existing teams, and has been used extensively by CIHR's 13 institutes to build research teams in areas identified as priorities.
- The **Aboriginal Capacity and Developmental Research Environments (ACADRE) Program** is the flagship strategic initiative of CIHR's Institute of Aboriginal Peoples' Health. The program will build research capacity in aboriginal health, and increase the participation of aboriginal people in all fields of health research. ACADRE has already established research centres in Alberta, Saskatchewan, Manitoba, and Ontario—each with strong links to the aboriginal community. Other centres are in the planning stage.

To help universities and teaching hospitals recruit star expatriate and foreign researchers, CIHR provides:

- **Establishment Grants**, which contribute to a brain-gain in Canada by helping host institutions to develop competitive recruitment packages and

to attract established, internationally recognized health researchers to this country.

- **Development Grants,** which help increase the health research capacity of smaller Canadian institutions through seed grants for investigators, start-up funds for new recruits and funds for strategic planning exercises that identify institutional strengths and priorities. CIHR has awarded $3.3 million in development funding to 35 Canadian post-secondary institutions, including Okanagan University College, the University of Northern British Columbia, Université du Québec en Abitibi-Témiscamingue, Université de Moncton and Lakehead University.

Championing Canada's top innovators

One of the ways CIHR nurtures a climate conducive to innovation is by highlighting the work of Canada's top researchers through a number of prestigious awards:

- The **Distinguished Investigator Award** acknowledges the outstanding work of Canada's best health researchers. These experts are international leaders in their fields, with more than ten years experience as independent investigators. There are currently 34 CIHR Distinguished Investigators across Canada working in such diverse areas as proteomics, pain in children and emergency-room procedures. Awardees include:

2000

Brett Finlay, University of British Columbia
Philippe Gros, McGill University
Nahum Sonenberg, McGill University
Peter St. George-Hyslop, University of Toronto
Ian Stiell, Loeb Research Institute (Ottawa)

2001

Samy Suissa, McGill University
Janet Rossant, Samuel Lunenfeld Research Institute and University of Toronto

- CIHR's most prestigious award, the **Michael Smith Prize in Health Research,** honours the memory of Dr. Michael Smith, who shared the Nobel Prize in Chemistry in 1993. This prize recognizes innovation, creativity, leadership and dedication to health research, providing world-class researchers with $1 million over five years to pursue critical research, and to support trainees.
- The **Canada Research Chairs Program** was launched in 2000 by the Government of Canada to enhance levels of innovation in universities, affiliated research institutes and hospitals across the country. The program is governed by the presidents of the Natural Sciences and Engineering Research Council, the Social Sciences and Humanities Research Council, the Canada Foundation for Innovation, and CIHR—as well as the Deputy Minister of Industry Canada. This $900 million fund will support 2,000 Canada Research Chairs in Canadian institutions by 2005.

IMPROVING DRUG TREATMENTS AND POLICIES

Both an epidemiologist at McGill University and a CIHR Distinguished Investigator, Dr. Samy Suissa is conducting studies into the risks and benefits of the most common treatment in clinical practice—prescription drugs. Dr. Suissa is evaluating both the life-saving potential and the debilitating and potentially deadly side effects of medications used in the treatment of asthma, chronic obstructive pulmonary disease, heart disease, diabetes, depression and anxiety. Dr. Suissa's research findings can be expected to have a significant impact on the treatments many Canadians require—and on the public policy that governs the administration of prescription medication.

Leadership and Responsibility

BALANCING THE STEWARDSHIP RESPONSIBILITY OF GOVERNMENT WITH THE PROMISE OF NEW TECHNOLOGIES AND RESEARCH

International partnerships and collaborations

While Canadian researchers are respected throughout the world for their commitment to excellence, Canada produces only about five percent of the world's literature in health research. If Canada is to enhance its innovation performance, the research community must not only increase its knowledge output, it must also improve access to foreign research. To this end, CIHR ensures Canada's world-class researchers gain access to new mechanisms whereby they can collaborate on leading-edge research projects with colleagues around the world.

CIHR supports Canadian researchers working in collaboration with their international colleagues in large-scale clinical trials that address global health issues. The scale of these trials often leads to more accurate and detailed findings, as the studies involve larger numbers of subjects and a broader base of research expertise.

Many of CIHR's 13 institutes are also leading Canada's participation in international health initiatives and partnerships:

- CIHR's Institute of Genetics and the Canadian Genetic Diseases Network signed a collaborative agreement with Germany's Max Planck Institute for Molecular Genetics. The five-year program, called **Elucidation of Human Genetic Disease Using Genomic Technologies**, will help meet the growing international need for scientists trained in genetics and genomics.
- Health disparities between Aboriginal peoples are strikingly similar in many countries. Recognizing this, Canada, Australia and New Zealand entered into the **International Cooperation Agreement on Indigenous Health**; Canadian participation is led by the CIHR Institute of Aboriginal Peoples' Health. The partners have agreed to exchange graduate students,

NEW HOPE IN THE FIGHT AGAINST AIDS

While drug therapies have dramatically improved survival rates among persons with HIV and AIDS, many of those treated experience only transient benefits. In response, CIHR is supporting a $25 million tri-national clinical trial to investigate clinical management alternatives for best use of anti-HIV drug combination treatments for AIDS patients who have not responded well to anti-HIV therapy. The OPTIMA study (OPTions In Management with Anti-retrovirals) involves 77 clinics—22 with the Canadian HIV Trials Network, 25 with the Medical Research Council in the United Kingdom and 30 Veterans Administration institutions in the United States. Dr. William Cameron of the University of Ottawa is leading the Canadian team.

"This is an unprecedented collaboration that will strengthen international HIV research and should enable us to create better tailored health care for those living with HIV and AIDS. OPTIMA is the first trial funded under this important initiative to make the best possible use of resources across the globe, to tackle health problems as quickly and efficiently as possible, and to set new global standards in health care."

Sir George Radda, *Chief Executive, Medical Research Council, UK*

develop international research priorities, and share scientific expertise.

- The **Global Health Research Initiative (GHRI)** is spearheaded by CIHR's Institute of Population and Public Health in collaboration with the International Development Research Centre, the Canadian International Development Agency, and Health Canada. Along with a broader stakeholder community, GHRI partners have begun to investigate new research strategies to address health crises in the world's poorer nations and improve the cost-effectiveness of development assistance.

Advancing an innovative research environment

Some of the most exciting advances in health research—such as those resulting from the study of stem cells—are also the most ethically challenging. New technologies and advances in health research are often accompanied by social and ethical concerns.

New regulatory tools must be developed to advance promising research while at the same time respecting Canadian values and beliefs. These tools must respond to shifts in public opinion and accommodate rapid and often unpredictable advances in research and technology.

CIHR plays a pivotal role in the development of regulatory frameworks and policies. These frameworks support a culture of innovation while safeguarding societal values and ensuring that government policies and decisions are grounded in the best available scientific evidence.

In areas such as stem cell research and the development of placebo strategies and privacy initiatives CIHR has made a number of significant contributions to national debates and policy formulations:

- CIHR recognizes both the tremendous potential of stem cells for the treatment of numerous diseases, including Alzheimer's and Parkinson's, and the significant ethical concerns arising from the richest source of these cells—human embryos. In the absence of regulations governing research in this field, CIHR took the lead to establish guidelines on the use of human embryonic stem cells. In October 2000, CIHR convened an *ad hoc* **Working Group on Stem Cell Research**. The group included scientists, clinicians, philosophers, and lawyers with expertise in assisted human reproduction and stem cell research. Together, the group was asked to examine the issue and make recommendations concerning the conditions under which CIHR should fund stem cell research. Interested individuals and organizations made more than 100 submissions to the working group. In March 2002, CIHR's governing council adopted guidelines based on the working group's recommendations. Council is committed to ensuring adherence to the guidelines, and to revisiting them on an ongoing basis.

- Placebos are critical for determining the effectiveness of medications. Ethical concerns have arisen, however, as those people who take placebos are, in fact, receiving no active treatment. CIHR is collaborating with Health Canada to examine the use of placebos in clinical trials. In March 2002, a **National Stakeholders Conference on Appropriate Use of Placebos in Clinical Trials** was held. A draft report is being prepared, and public consultations will follow. Recommendations will be presented later this year on a common placebo policy for Canada—a first not only in this country, but also the world.

- As Canada's leading health research agency—and an instrument of government funded by the people of Canada—CIHR maintains a deep respect for the privacy of Canadians. CIHR is also aware that access to personal information is sometimes in the best interest of Canadians, critical to advancing research and improving public health and health care. These rights and interests are not diametrically opposed; the challenge is to promote constructive and informed dialogue to achieve a delicate balance in which both rights and interests are secure. CIHR leads various initiatives concerning information privacy, and is excited not only by the promise of creative and innovative solutions, but also by the increased dialogue and engagement among key stakeholders who will advance this crucial public policy.

Communities and Clusters

Supporting innovation locally, regionally and nationally so Canadian communities continue to be magnets for investment and opportunity

Creating virtual communities of innovation

In the past, Canada's success often resulted from overcoming challenges associated with a vast, rugged geography, and an extreme climate. In the 20th century, the transportation and communication sectors met many of these challenges, and vaulted Canada to the pinnacle of knowledge in their fields.

In the 21st century, CIHR guides health research toward the same peaks of innovation performance. CIHR's 13 institutes conquer Canada's geographic challenges by embracing the latest communication technologies to create strategic virtual communities—powerful knowledge networks that accelerate Canada's capacity to innovate by linking numerous centres of research excellence in every region of the country.

CIHR's unique structure also helps break down the barriers that separate research disciplines, fostering new multidisciplinary communities that advance knowledge through new levels of interaction.

Building on the past

Traditional industrial communities often comprise local business clusters that stimulate innovation and heighten productivity by:

- facilitating the exchange of best-practices;
- jointly sourcing services and supplies;
- increasing knowledge transfer and collaboration between organizations with complementary skills and goals; and
- attracting other businesses, suppliers, investors and skilled workers to the community.

Today, these same stimuli can be found in CIHR's virtual health research communities, which dramatically increase the benefits of knowledge clusters by connecting them nationally and internationally. Through **Interdisciplinary Health Research Teams (IHRT)**, for instance, researchers join forces and

TEAMING UP AGAINST AUTISM

Growing up, Dr. Jeanette Holden became familiar with the strange behaviours associated with autism—her brother Jim, is autistic. Today, Dr. Holden applies her professional skills in the struggle to understand autism and promote optimal development in individuals with the disorder. With her CIHR-funded IHRT, Dr. Holden works to identify genes that lead to Autism Spectrum Disorder (ASD). Her work brings together more than 60 partners, including researchers, clinicians and parents of autistic children. Dr. Holden's team is training parents to recognize early signs of ASD and to work with their infants to understand and manage the behaviours associated with autism.

STEMMING A TIDE OF VIOLENCE

In 1997, 20 percent of Canadian homicide victims were under the age of 19; further, the federal Centre for Justice Statistics reports that most child victims of physical and sexual assault are between the ages of 12 and 17. Appalled at the increase in teenage assaults and injuries in recent years, Dr. Bonnie Leadbeater of the University of Victoria is acting to address the issue. Her CAHR—Healthy Youth in a Healthy Society—takes a proactive, prevention-based approach to improve the well being of British Columbia's youth. The initiative focuses on the development of a survey that can be used to assess health resources and health risks for youth in Victoria. Data from the survey will be compared with results from other areas of the province to identify the risks for youth living under different circumstances. The CAHR will also address intimate-partner violence, cultural displacement of Aboriginal youth, and negative health outcomes that result from social and economic restructuring.

PROMOTING THE BENEFITS OF ACTIVE LIFESYLES

Recognizing that physical inactivity is one of the leading contributors to preventable death in Canada, Dr. Karen Chad of the University of Saskatchewan wants to get people moving. Thanks to a CAHR grant, Saskatoon in Motion, Dr. Chad and a host of community partners are developing programs that will examine physical activity among disadvantaged youth and older adults. Dr. Chad and her team will study the benefits of exercise, as well as the factors that determine whether or not people are physically active, and why people often abandon active lifestyles. Through their research, the team will work to influence policymakers and propose long-term solutions that will promote physical activity at the community level.

focus on health issues of common concern. CIHR currently funds 11 IHRTs involving more than 500 investigators and community partners in more than 100 institutions.

Empowering communities

CIHR strives to address regional health problems across Canada, applying its national and international resources to empower communities and provide them with the means to resolve health issues locally. This community-empowerment approach brings researchers and citizens together to identify health challenges, determine effective strategies, participate in the research, and ultimately translate findings into improved health for all.

The **Community Alliance for Health Research (CAHR) Program** is one example of how CIHR tackles regional health issues. The program encourages collaboration among communities, organizations and researchers based in local universities, hospitals and other research institutions. Grass-roots initiatives such as CAHR help communities take ownership of local health challenges and develop the confidence to embrace innovative approaches in tackling other societal and economic problems. Additionally, these programs help foster a new generation of community leaders who will undertake projects and initiatives and generate a groundswell of innovation at local levels.

Clustering for impact

In recent decades, the clustering of research activities has proven critically important to the success of the information technology, communications and biotechnology sectors. These clusters attract research expertise and create a nucleus of discovery around which innovation, commercialization and economic development coalesce.

While CIHR's 13 institutes form virtual national and international communities of health research, CIHR also plays a key role in the creation of local clusters in Canada. Centred around well-established health research institutions, such communities stimulate businesses and technologies that benefit not only from improved access to new scientific knowledge, but also from well-trained, highly educated workers. Businesses,

jobs and technologies will continue to spring up around Canada's universities, hospitals and other publicly funded research institutions as long as there is a sustained government investment in health research.

Propelling economic growth

Spin-off firms from universities and other public research institutions are vital innovation components that increase economic prosperity in many countries. According to preliminary data from the Organization for Economic Cooperation and Development (OECD, *Science, Technology and Innovation in the New Economy*), spin-off formation in North America is three to four times higher than in other OECD regions, with many of these new companies concentrated in the field of biotechnology.

Innovative, publicly funded research underway at McGill University and the Université de Montréal—as well as world-class graduates from these institutions—are contributing to Montreal's growth as a global biotechnology centre. Progressive provincial tax-relief programs lure large pharmaceutical and small biotechnology companies to the area. Companies can receive refunds for R&D investments, as well as five-year tax breaks for recruiting professionals from outside Canada. The provincial government also matches investments obtained outside Canada. These innovative incentives enable Quebec to foster thriving and productive health science clusters.

Future excellence and innovation in Canada's health system

The benefits of sectoral clustering demonstrate that a culture of innovation will develop in Canada's health system when researchers, caregivers, policymakers and the public work together in strong, supportive and multidisciplinary environments. With this in mind, CIHR is examining new ways to extend clustering's value to the country's health system as a whole.

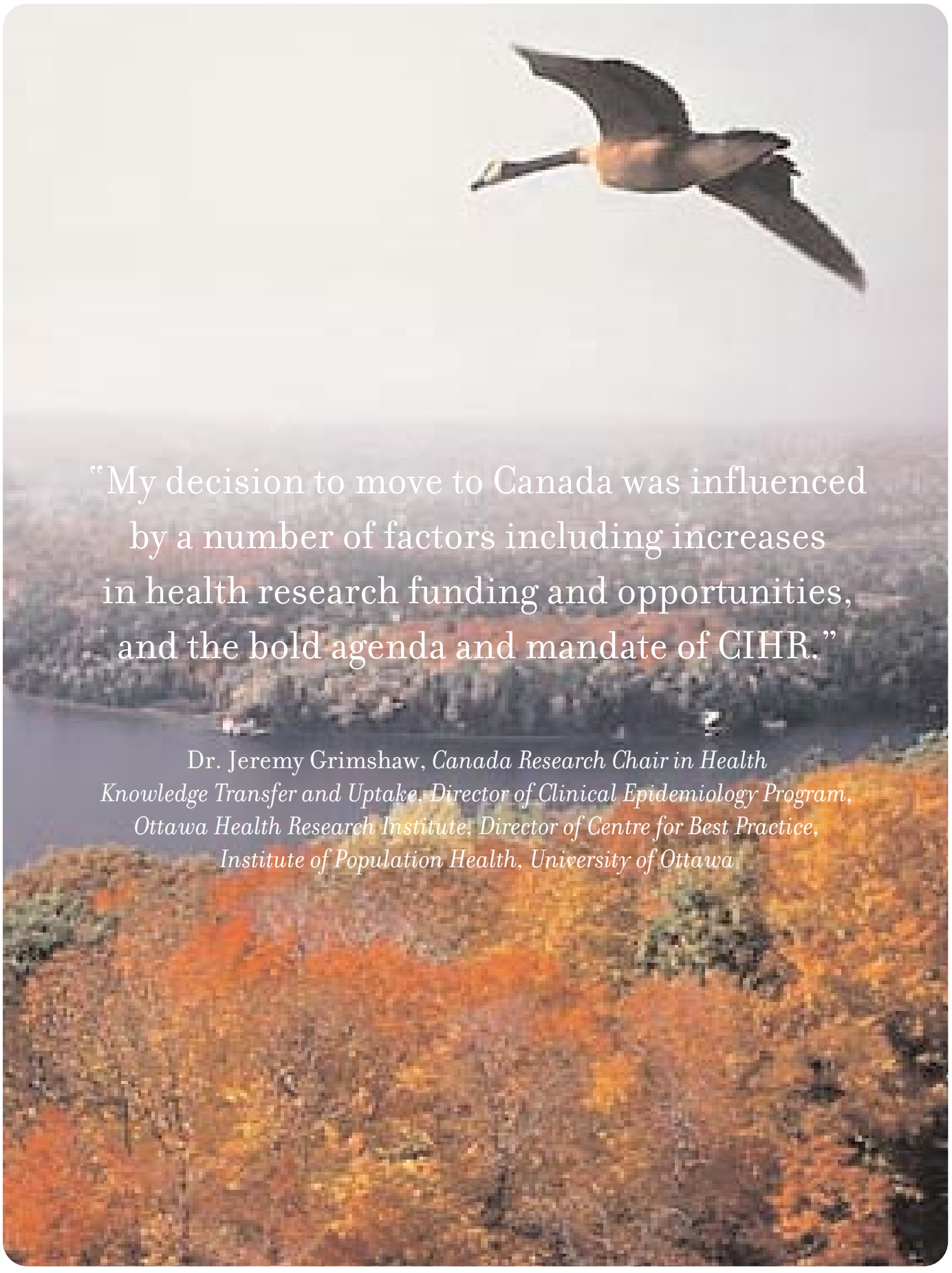
For example, CIHR envisions creating a national consortium-**Centres in Health Innovation**-for translating research into action. The Centres will engage various partners to strengthen and expand the pipeline linking high quality research into improved practice.

These Centres will spearhead value-added, community-oriented activities critical to the Innovation Strategy, involving local educational institutions and industry, and supporting community-based research. Provincial governments and their health policymakers will participate as partners, helping set the priorities for the Centres—and benefiting from research outcomes. Linked provincial and federal funding will encourage innovative and collaborative approaches that more closely coordinate health research and health services.

The objectives of the Centres will be to undertake outstanding research and ensure the translation of knowledge into improved health service and prosperity regionally and nationally. By supporting excellence at the grass-roots level, these Centres in Health Innovation will contribute critical community leadership to ensure a flourishing culture of innovation nationwide.

THRIVING THROUGH COLLABORATION

Nurtured by CIHR funding and the thriving environment of a Montreal cluster, GeminX is a company working to combat cancer. The company was co-founded in 1997 by Dr. Philip Branton—now Scientific Director of CIHR's Institute of Cancer Research, and a consultant to GeminX—and Dr. Gordon Shore, currently GeminX's Chief Scientific Officer. GeminX capitalizes fully on synergies in Montreal. Initially, the company maximized its resources by sharing facilities with three other local SMEs. GeminX went on to collaborate with the Montreal-based Biotechnology Research Institute. Today, the company's work is linked to two CIHR-funded projects conducted at McGill University. One project led to the discovery of a human adenovirus protein involved in killing cancer cells; developing a therapy based on the protein is currently a key project at GeminX. The second project developed a drug that inhibits the BCL-2 protein, which suppresses apoptosis (the normal process of cell death). The drug is set to go into clinical trials in 2003.



The Faces of the New Knowledge-based Economy

With the launch of CIHR in June 2000, Canada introduced a health research model for the 21st century. CIHR has energized Canada's health research enterprise, stimulating new levels of investigation and presenting exciting new multidisciplinary opportunities.

Attracted by this flourishing culture of innovation, expatriate researchers are coming home to Canada. Their colleagues around the world are equally enthusiastic about Canada's commitment to research excellence, and are taking up new posts across the country. As a result, new talent and fresh ideas are re-invigorating Canada's health research community.

Here are just a few of the health research professionals who are rapidly expanding the nation's capacity to innovate.

Jeremy Grimshaw
Ottawa Hospital Research Institute

Date moved to Canada: Jan. 2002

Last Research Institution: Health Services Research Unit, University of Aberdeen, UK

Studies: Ways to improve the uptake of research findings by health care professionals.

Prabhat Jha
University of Toronto

Date left Canada: Sept. 1994

Date returned to Canada: Sept. 2002

Last Research Institution: World Health Organization, Geneva, Switzerland

Studies: HIV and tobacco use with the aim of advancing global health.

Jeremy Jass
McGill University

Date moved to Canada: June 2002

Last Research Institution: University of Queensland, Brisbane, Australia

Studies: The causes of cancer of the large intestine.

Jean-François Gauchat
Université de Montréal

Date moved to Canada: July 2002

Last Research Institution: Centre d'Immunologie Pierre-Fabre, Saint-Julien en Genevois, France

Studies: The role of CLC/CLF in multiple sclerosis, neurodegeneration and immune response.

Timothy Hughes
University of Toronto

Date moved to Canada: May 2001

Last Research Institution: Rosetta Inpharmatics, Kirkland, WA, USA

Studies: Gene and protein functions focusing on integration of scalable technologies with directed research.

Hue Sun Chan
University of Toronto

Date moved to Canada: Nov. 1998

Last Research Institution: University of California at San Francisco, CA, USA

Studies: How amino acid sequences encode a protein's functional structure.

Eric Fombonne
Montreal Children's Hospital, McGill University

Date moved to Canada: Sept. 2001

Last Research Institution: Institute of Psychiatry, Maudsley Hospital, King's College London, UK

Studies: The epidemiology of child and adolescent psychiatric disorders, especially autism.

Gerardo Febeyre
Université de Montréal

Date left Canada: Mar. 1998

Date returned to Canada: Oct. 2001

Last Research Institution: Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA

Studies: Cellular senescence in aging and tumour suppression.

Victor Rafuse
Dalhousie University

Date left Canada: Jan. 1993

Date returned to Canada: Oct. 1999

Last Research Institution: Case Western Reserve University, Cleveland, OH, USA

Studies: The molecular mechanisms regulating the differentiation and growth of spinal neurons.

Marc Poulin
University of Calgary

Date left Canada: July 1993

Date returned to Canada: July 2000

Last Research Institution: University of Oxford, UK

Studies: The mechanisms regulating diseases such as stroke and sleep-related breathing disorders.

Jorge Armony
Douglas Hospital Research Centre, McGill University

Date moved to Canada: Nov. 2002

Last Research Institution: University College London, UK

Studies: Fear processing in healthy humans and in those with anxiety disorders.

Brian Christie
University of British Columbia

Date left Canada: Sept. 1989

Date returned to Canada: July 2001

Last Research Institution: The Salk Institute for Biological Studies, La Jolla, CA, USA

Studies: How the brain produces new neurons and how neurons can enhance learning and memory.

Jens Coorssen
University of Calgary

Date left Canada: Feb. 1993

Date returned to Canada: Dec. 2000

Last Research Institution: National Institutes of Health, Bethesda, MD, USA

Studies: Cellular secretion; a fundamental process essential for wound healing, nervous system function and the release of hormones and insulin.

Sarah Childs
University of Calgary

Date left Canada: Aug. 1997

Date returned to Canada: Aug. 2001

Last Research Institution: Cardiovascular Research Center, Massachussetts General Hospital, Boston, MA, USA

Studies: Genes that control the growth of blood vessels.

Patrick Whelan
University of Calgary

Date left Canada: Sept. 1996

Date returned to Canada: July 2000

Last Research Institution: National Institutes of Health, Bethesda, MD, USA

Studies: The development of neural circuits responsible for locomotion.

Boris Steipe
University of Toronto

Date moved to Canada: July 2001

Last Research Institution: Gene Center, The University of Munich, Germany

Studies: Protein engineering and bioinformatics.

Janice Braun
University of Calgary

Date left Canada: Jan. 1992

Date returned to Canada: July 1997

Last Research Institution: Stanford University, CA, USA

Studies: The molecular mechanisms of chaperones in synaptic transmission; a process fundamental to signaling in the central nervous system.

Elaine Davis
McGill University

Date left Canada: Mar. 1992

Date returned to Canada: Sept. 2002

Last Research Institution: University of Texas Southwestern Medical Center at Dallas, TX, USA

Studies: The role of proteins in the control of smooth muscle cell growth in the wall of the aorta.

Robert Gendron
Memorial University

Date left Canada: Aug. 1991

Date returned to Canada: Nov. 2001

Last Research Institution: Children's Hospital Medical Center, Cincinnati, OH, USA

Studies: Mechanisms controlling blood vessel health and disease.

Helene Paradis
Memorial University

Date left Canada: May 1991

Date returned to Canada: Nov. 2001

Last Research Institution: Children's Hospital Medical Center, Cincinnati, OH, USA

Studies: The role of regulatory factors in the growth and development of childhood cancers.

Paige Lacy
University of Alberta

Date moved to Canada: Mar. 1997

Last Research Institution: Malaghan Institute of Medical Research, Wellington, New Zealand

Studies: The signaling mechanisms controlling toxic mediator release from inflammatory cells.

Bruce Rannala
Department of Medical Genetics, University of Alberta

Date left Canada: Aug. 1991

Date returned to Canada: July 2000

Last Research Institution: State University of New York at Stony Brook, NY, USA

Develops: Computer programs for mapping the locations of gene mutations.

Nathalie Vergnolle
Faculty of Medicine, University of Calgary

Date moved to Canada: Apr. 1997

Last Research Institution: Institute National de la Recherche Agronomique, Toulouse, France

Studies: The mechanisms that govern inflammation and pain.

Carol Schuurmans
Genes and Development Research Group, University of Calgary

Date left Canada: Oct. 1995

Date returned to Canada: Sept. 2001

Last Research Institution: Institut de Genetique et de Biologie Moleculaire et Cellulaire, Strasbourg, France

Studies: The molecular mechanisms of neurons in the brain.

Walid Houry
Department of Biochemistry, University of Toronto

Date moved to Canada: Apr. 2000

Last Research Institution: Max-Planck Institute for Biochemistry, Munich, Germany

Studies: The use of biochemistry, biophysics, proteomics and bioinformatics to understand protein folding inside the cell.

Tim Roberts
University of Toronto

Date moved to Canada: Jan. 2002

Last Research Institution: University of California, San Francisco, CA, USA

Studies: The physiological function of healthy and diseased brains through non-invasive imaging.

Conclusion

CONTRIBUTING TO INNOVATION THROUGH A HEALTHIER CANADA

For Canada's health research community, the goals of the Innovation Strategy are both ambitious and attainable. CIHR is proud to contribute to this national effort by leveraging research strengths and aligning expertise among its partners across the country.

Launched just two years ago, CIHR is itself a model of innovation. In creating CIHR, the government was keenly aware of the health sector's tremendous economic potential. As a result, CIHR is uniquely equipped to help guide this country to the forefront of global innovation. For CIHR, the achievement of new levels of innovation is not solely about enhancing Canada's competitiveness. CIHR is also driven by a profound purpose—to improve the health of Canadians and to foster the development of health practices and products that contribute to improved health for people around the world.

CIHR considers health and health research the keystone of innovation—the fundamental building block of a healthy society and a robust economy. Canadians' quality of life and standard of living depend on their capacity to innovate. For Canada to excel as a global innovation powerhouse, it must rely on a human resource base that accepts change, embraces new ideas and takes greater risks—and that enjoys the benefits of a healthy Canadian population and strengthened health care system.