

Doing Better Business...Better
Submission to House of Commons Standing Committee on Finance
August 14, 2009
Research Canada: An Alliance for Health Discovery

Research Canada's Members

- *Abilities Foundation of Nova Scotia*
- *Alberta Health Services*
- *Baycrest Centre for Geriatric Care*
- *BIOTECanada*
- *Canada's Research-Based Pharmaceutical Companies*
- *Canadian Association of Occupational Therapists*
- *Canadian Cancer Society*
- *Canadian Cystic Fibrosis Foundation*
- *Canadian Diabetes Association*
- *Canadian Foundation for Dental Hygiene Research and Education*
- *Canadian Healthcare Association*
- *Canadian Pain Society*
- *Canadian Physiotherapy Association*
- *Canadian Society of Biochemistry, Molecular & Cellular Biology*
- *Canadian Society for Immunology*
- *Capital District Health Authority*
- *Covenant Health Research Centre*
- *Council for Canadian Child Health Research*
- *Centre for Addiction and Mental Health*
- *Centre Hospitalier Affilié Universitaire de Québec Research Centre*
- *Centre Hospitalier de l'Université de Montréal – Research Centre*
- *Centre Hospitalier Universitaire de Québec – Research Centre*
- *Centre Hospitalier Universitaire de Sherbrooke – Research Centre*
- *Child & Family Research Institute*
- *Children's Hospital of Eastern Ontario (CHEO) Research Institute*
- *Clinical Research Institute of Montreal*
- *College of Family Physicians of Canada*
- *Douglas Mental Health University Institute*
- *Friends of CIHR*
- *General Electric Health Care, Canada*
- *Hôpital Sainte-Justine Research Centre*
- *Hospital for Sick Children Research Institute*
- *Infectious Diseases Research Center of Laval University*
- *IWK Health Centre*
- *Juvenile Diabetes Research Foundation*
- *Kingston General Hospital*
- *Lawson Health Research Institute*
- *Leukemia & Lymphoma Society of Canada*
- *McGill University Health Centre Research Institute*
- *McMaster University*
- *Montreal Heart Institute*
- *Newfoundland and Labrador Centre for Applied Health Research*
- *Ontario March of Dimes*
- *Ontario Neurotrauma Foundation*
- *Ottawa Centre for Research and Innovation*
- *Ottawa Hospital Research Institute*
- *Pan Provincial Vaccine Enterprise (PREVENT)*
- *Parkinson Society Canada*
- *Pfizer Canada Inc.*
- *Providence Health Care Research Institute*
- *Provincial Health Services Authority*
- *Queen's University Faculty of Health Sciences*
- *Regina Qu'Appelle Health Region*
- *Samuel Lunenfeld Research Institute*
- *Sanofi Pasteur Limited*
- *Schizophrenia Society of Canada*
- *Spina Bifida and Hydrocephalus Association of Ontario*
- *St. Joseph's Health Centre*
- *St. Michael's Hospital*
- *Sunnybrook Health Sciences Centre*
- *The Royal College of Physicians and Surgeons of Canada*
- *Thunder Bay Regional Health Sciences Centre*
- *Toronto Rehabilitation Institute*
- *University Health Network*
- *University of Manitoba Faculty of Medicine*
- *University of New Brunswick*
- *University of Ottawa Heart Institute*
- *University of Toronto Faculty of Medicine*
- *University of Western Ontario*
- *uOttawa Institute of Mental Health Research*
- *Vancouver Coastal Health Research Institute*
- *VOICE for Hearing Impaired Children*
- *York University*

Research Canada's National Partners

- *Association of Faculties of Medicine of Canada*
- *BIOTECanada*
- *Canada's Research-Based Pharmaceutical Companies*
- *MEDEC Canada's Medical Device Technology Companies*

About Research Canada

The Mission of Research Canada: An Alliance for Health Discovery is to improve the health and prosperity of Canadians by championing Canada's global leadership in health research.

Research Canada is a not-for-profit, voluntary organization that is a unifying national voice for health research advocacy in Canada. Working for all Canadians, its membership is drawn from all sectors dedicated to increasing investments in health research, including the leading health research institutes, national health charities, hospitals, regional health authorities, universities and private industry.

Reaching out to the Canadian public, the media and government, Research Canada informs and raises awareness of the critical importance of long-term, sustainable health research funding as an investment in Canada's future. As an evidence-based organization, Research Canada also seeks and values Canadians' views on the impact of health research. The organization has released two public opinion polls in 2006 and 2007 demonstrating the strong support of Canadians of Canadian health research.

Health research is critical for Canada for three reasons: it improves the health of Canadians, offers a real opportunity to contain health care costs, and contributes to the creation of knowledge-based jobs and economic growth.

Research Canada welcomes the opportunity to work with the government as it engages all sectors and works in partnership to build support for health research nationwide.

Executive Summary

Over the last decade, due in large part to material increases in the federal government investment in Canada's health research agenda; Canada has increasingly become globally competitive. Following on this remarkable decade of growth we now have the federal government's S&T Strategy: *Mobilizing Science and Technology to Canada's Advantage*¹ designed to enhance Canada's place in the global economy. Importantly, health and related life science is named as one of four federal government priorities.

In Research Canada's 2009 submission to the House of Commons Standing Committee on Finance, we propose the creation of *a policy framework whose foundational principle is not only about spending more federal dollars but about spending them better*. At the same time, there is an immediate need to equilibrate the current system so as not to jeopardize Canada's ability to capitalize on material investments already made.

There is considerable evidence that the material federal investments in much needed renewal and growth in health research infrastructure and programs dedicated to the recruitment and retention of the best and brightest scientists has resulted in an imbalance in the system. Specifically, investments in the granting councils, which support the research operations of scientists, have not kept pace with this growth. The granting councils can document an increase in the absolute number of applications, and an ever-increasing proportion of them that score excellent or outstanding in rigorous peer review, yet fail to meet the cut-off for funding. This funding gap has reached material proportions of late, and is now jeopardizing our capacity to retain the best and the brightest scientists.

Towards capitalizing on the products of federal investments in research funding in infrastructure and scientific personnel made thus far we recommend:

RECOMMENDATION 1: That the federal government increase base funding to the three granting councils and that over the next five years the base funding to the Canadian Institutes of Health Research (CIHR) be equivalent to 1 percent of total health spending in Canada.

Canada's system of innovation is out of balance. Canada's new science and technology strategy has proposed steps to correct this imbalance, but the success of these efforts will ultimately reflect the degree to which Canada defines and adopts a systemic framework guiding strategic investments. Therefore, Research Canada is advocating the development of a *Canadian Health Research Strategy* over the next five years, developed in partnership with stakeholders at federal/provincial/territorial levels, to support excellence in research through the establishment of a clear set of priorities, the provision of balanced and adequate resources and the appropriate mechanisms to deliver both economic benefit as well as knowledge translation into the health care system. The Strategy is a precursor to the development of effective policies that will enable the country's innovation objectives and spend taxpayer dollars better.

To this end we recommend:

RECOMMENDATION 2: The establishment of a national task force including representatives from the academic, private and voluntary sectors to examine the feasibility of developing a robust health research strategy that would inform and direct future policy regarding health research and health innovation in Canada.

¹ Canada's S&T Strategy: Mobilizing Science and Technology to Canada's Advantage.
http://www.ic.gc.ca/eic/site/ic1.nsf/eng/h_00231.html

Canada's Advantage

Canada has many of the right ingredients to succeed in the knowledge based economy. In the health sector, this includes a highly skilled workforce and some of the best hospitals, universities, education and research centres in the world. It also has a health care system that has the potential be the best in the world.

Health research in Canada has an illustrious tradition. Over the last decade, due in large part to material increases in the federal government investment in Canada's health research agenda, Canada has increasingly become globally competitive. Federal investments in infrastructure, people and programs have been complemented by similar investments at the provincial level and by substantially increased support from a philanthropic public, largely through health charities and hospital related foundations. The private sector has also played a critical role over the past decade in support of Canadian health research and development.

Following on this remarkable decade of growth, we now have a high level blueprint for the next decade – the federal government's S&T Strategy: *Mobilizing Science and Technology to Canada's Advantage*² designed to enhance Canada's place in the global economy. Importantly, health and related life science is named as one of four federal government priorities; along with the environment, energy, and information technology.

Research Canada's Commitment

In Research Canada's 2007 response to the S&T Strategy, we invited the Government of Canada, in the context of its own well-conceived approach to enhancing our capacity in science and technology, to consider an innovation policy framework that Research Canada had developed to guide strategic and balanced investments in health research aimed at achieving a robust and aligned innovation system in Canada.³ A balanced investment in knowledge creation, the people who do it, and the infrastructure required to increase Canada's ability to be a global leader in science and technology requires *a policy framework whose foundational principle is not only about spending more federal dollars but about spending them better.*

While underscoring the need to develop a framework to guide balanced investments using a comprehensive innovation policy framework over the medium- to long-term; there is an immediate need to equilibrate the current system so as not to jeopardize Canada's ability to capitalize on material investments already made.

The Need for an Integrated Approach

Compelling arguments for an integrated and comprehensive approach to health and related life science research come from two imperatives:

- 1) The need to upgrade our health care system to make it more effective and more cost-effective, and
- 2) The need to elevate health related R&D to the forefront to ensure Canada's success in a global knowledge-based economy.

Achieving these goals of better health care and a stronger economy is not simple and requires:

² Canada's S&T Strategy: Mobilizing Science and Technology to Canada's Advantage.
http://www.ic.gc.ca/eic/site/ic1.nsf/eng/h_00231.html

³ Response to the Government of Canada's Science and Technology Strategy: Progressing Towards a Functional Innovation System for Canada, Research Canada, 2007

- i) *a compelling vision and mission for health research in Canada, agreed upon by federal and provincial levels of government and by key players in the system, and based upon a strategic framework that captures the complex environment in which the continuum of health research is carried out*
- ii) *a sustainable multi-year funding plan for academic health research, in which federal and provincial roles are agreed upon and understood and in which balance is achieved in support for infrastructure, people and projects*
- iii) *a robust system of support for translating the results of research into societal and economic benefits for Canada, including enhancement of knowledge creation into clinical applications, and acceleration of the conversion of new knowledge into innovative products and services*

Satisfying these three requirements is a long term project requiring broad-based stakeholder participation, the work product of which will be a **Canadian Health Research Strategy** that will serve Canada and Canadians well for decades to come.

Success in this endeavor is predicated by unequivocal commitment to federal support of the scientific enterprise. And the Government has made an excellent start. Federal investments over the last decade have not only reversed the “brain drain”, but have also supported the recruitment of some of the best scientific minds. Canada’s ability to retain and to capitalize on the work products of this talent requires continuity of stable long-term investment, and a strategy to ensure that investments support the continuum of activity; from discovery to product development to delivery of innovations in disease prevention, early detection of disease and treatment.

Research Canada’s submission to the Finance Committee proposes two recommendations. The first addresses the imbalance in health research funding streams. The needed and welcomed investments in infrastructure and people have eclipsed that support required for them to actually do their science. Specifically, support to federal granting agencies that fund research projects has fallen well short of that required to ensure the funding of all applications deemed excellent and outstanding through rigorous expert review. At risk, therefore, is our capacity to retain the best and the brightest, who will always gravitate towards an environment that funds their research. This imbalance costs taxpayers more not only in lost potential within the health research industry but also as we continue to play *catch up* in our efforts to achieve the necessary balance.

The second recommendation addresses the root causes of a Canadian health innovation system out of balance. We are systematically failing to capitalize on the innovation advantage afforded by federal investments in world-class research, people and facilities. It advocates the development of an over-arching health research strategy, as a precursor to the development of effective policies that will enable the country’s innovation objectives and spend taxpayer dollars better.

Research Canada’s position is that sound policy measures focused on strengthening Canada’s health research enterprise must be tethered to an over-arching strategy that is supported by a practical model of how the Canadian health research innovation system works.

Restoring Balance: Recommendation 1:

Striking a balance among investments in infrastructure, people and projects

There is considerable evidence that the material federal investments in much needed renewal and growth in health research infrastructure and programs dedicated to the recruitment and retention of the best and brightest scientists has resulted in an imbalance in the system. Specifically, investments in the granting councils, which support the research operations of scientists, have not kept pace with this growth. The evidence for this comes from the

granting councils which can document an increase in the absolute number of applications, and an ever-increasing proportion of them that score excellent or outstanding in rigorous peer review, yet fail to meet the cut-off for funding. This translates to increasing numbers of excellent scientists in universities and research hospitals who have been unable to obtain adequate operating grant support for the innovative research deemed meritorious by stringent peer-review. This is not only a waste of talent and infrastructure; it is also demoralizing for career scientists who have spent decades of their lives training in Canada and abroad, only to find that they spend far too much time in non-productive grant writing and far too little time concentrating on productive research. This funding gap has reached material proportions of late, and is now jeopardizing our capacity to retain the best and the brightest scientists. A situation exacerbated by the substantial increase in funding for research projects by many of our global partners.

The situation crystallized for the federal government, and to those who advise government, by the unexpected hostile response to the 2009 federal budget in which support for the granting councils was actually reduced – indeed in contradiction to the federal S&T Strategy that advocated an increase in granting council funding.

In recent years, CIHR has estimated that it would require an increase in funding of \$300 million annually to ensure that all the excellent and outstanding proposals are funded at adequate levels. Given this and projecting five years into the future, it suggests that an appropriate steady state budget for CIHR would be ~1% of total spending on health care.

Towards capitalizing on the products of federal investments in research funding in infrastructure and scientific personnel made thus far we recommend:

RECOMMENDATION 1: That the federal government increase base funding to the three granting councils and that over the next five years the base funding to the Canadian Institutes of Health Research (CIHR) be equivalent to 1 percent of total health spending in Canada.

The Standing Senate Committee on Social Affairs, Science and Technology originally proposed the 1% solution which Research Canada endorses.⁴ Based on current total health spending, this would increase CIHR's base funding to \$1.7 Billion over a five-year period.

Endorsement and implementation of this recommendation would not only restore confidence within the scientific community; it would also result in the immediate restoration of projects and the re-hiring of research assistants and technical support staff who are currently jobless as a result of previous unfunded grants.

The Root of the Problem: Recommendation 2:

Building towards a Canadian Health Research Strategy

Canada's system of innovation is out of balance. Canada's new science and technology strategy has proposed steps to correct this imbalance, but the success of these efforts will ultimately reflect the degree to which Canada defines and adopts a systemic framework guiding strategic investments; one that with broad-based consultation arrives at consensus on roles and responsibilities for each of the sectors; and guides balanced investments across the spectrum of the health research innovation cycle.

⁴ Standing Senate Committee on Social Affairs, Science and Technology. 2002. The Health of Canadians – The Federal Role. Final Report of the State of the Health Care System in Canada. Page 53.

Research Canada is advocating the development of a *Canadian Health Research Strategy* over the next five years, developed in partnership with stakeholders at federal/provincial/territorial levels, to support excellence in research through the establishment of a clear set of priorities, the provision of balanced and adequate resources and the appropriate mechanisms to deliver both economic benefit as well as knowledge translation into the health care system. *The Strategy will be the key enabler of improved health and prosperity for Canadians through global leadership in health research.*

It should be noted that the idea of a national strategy for health research was articulated in 2004 at the Leader's Forum for Health Research in Canada⁵ organized by Research Canada's forerunner, the Council for Health Research in Canada (CHRC). The idea has been gaining traction amongst national health organizations.

To achieve the goal of a robust *Canadian Health Research Strategy* requires the development of a practical health innovation model system on which the plan will be based. In health and the life sciences, as in all innovation-based fields, the creation of knowledge and its translation into practical impact is a complex, resource-intensive process. Notwithstanding this complexity, the approach to characterize the underpinnings of an innovation system can be simplified by parsing the whole into its component parts. This facilitates both the detailed characterization of activities within each segment of the innovation cycle, and also facilitates our ability to understand how each segment impacts on the other segments of the cycle. This is a critical exercise, as it provides the basis of ensuring balanced investment throughout the cycle, and is fundamental to the government's efforts to correct persistent structural imbalances that have impeded the social and economic impact of Canadian research excellence.

The work product of modeling a Canadian Health Research Strategy is therefore the precursor to the development of effective policies to govern investments towards achieving Canada's health innovation objectives.⁶

Key elements of such a Strategy need to include:

- A formula for balanced investments in support of research infrastructure, people and projects;
- Salary support systems that provide salaries for scientists that address the on-again, off-again nature of the current systems in place;
- Tax policy that will accelerate private sector investment in the life sciences and health research sector;
- Vehicles to enhance commercialization of scientific discoveries;
- Mechanisms to enhance translation of discovery and its adoption into clinical practice

Government could greatly facilitate the development of such a Strategy by taking a lead role in consultation with the broader community in creating a vehicle through which key stakeholders can explore the opportunity and feasibility of developing such an over-arching framework for health research investments which builds upon the government's S&T Strategy, namely its identification of health and life sciences as a key area of priority for research and development activity. To this end we recommend:

⁵Leaders' Forum for Health Research in Canada, Strengthening the Foundation of Canada's Health Research Enterprise: A Backgrounder, Research Canada, 2004

⁶ Research Canada and others have developed model systems depicting the health innovation system in Canada. Research Canada does not advocate any specific model but does believe it is necessary to develop a consensual model that will form the basis of a Canadian Health Research Strategy.

RECOMMENDATION 2: The establishment of a national task force including representatives from the academic, private and voluntary sectors to examine the feasibility of developing a robust health research strategy that would inform and direct future policy regarding health research and health innovation in Canada.

In Conclusion...

Canada is a nation which has all of the right ingredients to play a leadership role in science and technology on the global stage. The federal government, by increasing material investments in health R&D over the past decade, has played a leadership role in putting this country on a course to build a high-performing innovation engine which will deliver both social and economic benefit to Canadians. Setting a further example with its S&T Strategy, the Government of Canada has brought the country to a new threshold, one that will allow us to develop a systemic framework guiding strategic investments; one that with broad-based consultation will arrive at consensus on roles and responsibilities for each of the sectors; and will guide balanced investments across the spectrum of research.

In Research Canada's submission to the Finance Committee, we follow the Government's lead building upon the S&T Strategy which invites the health research sector to look for immediate opportunities for investment which promise growth and to plan for Canada's future on the global stage. It is in the spirit of this example, set by the federal government, that Research Canada proposes in this submission how we can do better business better.