



Canada Foundation for Innovation
Fondation canadienne pour l'innovation

Speaking Notes

Senate Committee on Foreign Affairs and International Trade

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Thank you for the opportunity to appear before you today, and to provide a perspective on Canada's status in the international marketplace of ideas from my vantage point as President of the Canada Foundation for Innovation — the CFI. Today's presentation marks the CFI's 24th appearance before a Parliamentary committee since its creation.

The CFI was created in 1997 by the Government of Canada as an independent organization, with a mandate to fund research equipment and infrastructure in Canadian universities, colleges, research hospitals, and research institutes. The mandate of CFI extends across the entire spectrum of research—natural sciences, engineering, health, social sciences, and humanities.

The national objectives with which CFI was charged were to increase Canada's capacity to carry out world-class scientific research and technology development; promote networks and collaboration between the academic and private sectors; support economic growth and job creation; and enhance health and environmental quality through innovation.

To date, the CFI has invested \$5.3 billion in close to 7000 projects at 130 institutions across Canada. These investments have enabled the building of world-class research facilities that have attracted numerous international partners — including, for example:

- the University of Prince Edward Island's Atlantic Centre for Comparative Biomedical Research;
- the Laval University-based Arctic research icebreaker, the Amundsen;
- the Carleton and Queen's University-led Sudbury Neutrino Laboratory, an international facility for particle astrophysics, located a mile underground in an Inco mine;
- the Canadian Light Source at the University of Saskatchewan, Canada's national synchrotron research facility, and its largest scientific project in a generation;
- and the University of Victoria-led NEPTUNE and VENUS projects, the world's first on-line cabled undersea observatories.

Facilities such as these allow researchers to respond to today's scientific challenges, and are a critical ticket for Canada into the international research community.

Because the CFI funds only 40 percent of the cost of equipment and infrastructure, its investments have leveraged a total investment of over \$12 billion as a result of partnerships with provincial governments and industry. The partnerships with industry are in turn bringing academic researchers into closer contact with industry scientists and entrepreneurs, thereby enhancing knowledge translation through both the exchange of ideas and information and the movement of highly qualified personnel from academia into industry.

The impact of CFI's investments on Canada's research enterprise has been profound. In accordance with its funding agreement with the Government of Canada, the CFI has recently undergone an extensive Overall Performance Evaluation and Value-for-Money Audit by an independent third party, together with an assessment by a blue-ribbon International Review Panel. Among its many conclusions, the Panel notes that CFI has been "instrumental in growing Canada's capacity for world-leading research," and that it has "demonstrated remarkable success in helping Canada attract, retain, and develop research talent."

As a result of massive investments in research during the past decade by the Government of Canada through the CFI, the Canada Research Chairs, the three federal research granting councils, and other agencies, Canadian science is in considerable demand in the international marketplace of ideas. An index of this demand is the frequency with which Canadian scientists collaborate with colleagues in other scientifically advanced countries, as measured by internationally co-authored scientific articles. In this index, Canada ranks second in the world, on a per capita basis, just slightly behind the United Kingdom, and ahead of the United States, Germany, France, and Japan.

This type of ranking is important because many of the challenges facing humanity today are transnational in scope — for example, global warming or disease pandemics — and therefore, they will not be solved by any one country alone. It is important for Canada's future prosperity that we be part of the solution to these challenges, and not simply importers of innovation.

Fortunately, having built a scientific enterprise that is respected around the globe, Canada is well-positioned with its international collaborators to translate its knowledge and ideas into products and services for the global marketplace. In my view, however, such collaborations in science and technology must not be left merely to chance, but should become an important objective of Canada's industrial and foreign policy — as much a part of the discourse as military, political and economic alliances. In fact, in the 21st century, Canada's scientific clout has the potential to contribute as substantially to the nation's place in the world as its military and diplomatic clout did in the 20th century.

Like other alliances, scientific partnerships are forged on the competitive advantages that each partner brings to the table. In traditional manufacturing supply chains, competitive advantage depends on access to raw materials, production capabilities, labour costs, transportation facilities, and the financial and regulatory environment. In contrast, global research and development value chains are based on a different set of links — access to highly qualified personnel, state-of-the-art research facilities and organizations, and cutting-edge information communications technology capabilities.

For example, in the case of the joint Canada-California cancer stem cell initiative, Canada's strengths are its renowned researchers in this field and the patient databases enabled by its health care system. California, on the other hand, is home to the largest concentration of biotech companies in the world. By capitalizing on these complementary advantages, the partnership will benefit both jurisdictions, and has the potential to develop new treatments for cancer that will benefit people the world over.

In recruiting to Canada the highly-qualified personnel who will be critical to competitiveness in the knowledge-based economy, we should capitalize not only on our world-class research infrastructure, but also on our societal infrastructure — our social and cultural fabric. This fabric has been, and will continue to be, a major determinant in the decision of prospective students, scientists, and entrepreneurs to choose Canada over other countries with equally prestigious educational institutions and equally advanced research facilities.

In other words, in the intense global competition for the highly educated and skilled workforce that will drive the innovation economy, we should aggressively promote our democratic values, social justice, respect for diversity, and openness to immigration. As one author has noted recently, the simplest measure of whether a culture is dominant is whether outsiders want to be part of it, and whether they want their children and grandchildren to grow up in it. By this measure, ours is a dominant culture, and we should take full advantage of it in building our innovation future.

A recent report from the UK Royal Society, entitled *The Scientific Century*, notes that “no-one can predict the 21st century counterparts of quantum theory, the double helix, and the internet. But there is little doubt that advances in science and technology will continue to transform the way we live, create new industries and jobs, and enable us to tackle seemingly intractable social and environmental problems.”

As I have outlined, whatever these 21st century counterparts turn out to be, Canada has the capability of leading in their development. Our challenge as a nation is, firstly, to recognize that we have that capability; and secondly, to develop and implement a strategy that will allow us to exploit it successfully. In my view, that strategy must include major initiatives in foreign affairs and international trade.

Thank you.