Interview: Gilles G. Patry President & CEO Canada Foundation for Innovation

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Tell us about the Canada Foundation for Innovation (CFI) â?? where does Canada fit on the world stage of innovation and how are you ensuring Canada stands out as a top destination for innovation today?

The Canada Foundation for Innovation (CFI) funds research infrastructure. The organization was created in 1997 for the purpose of enabling world class research by providing researchers access to state-of-the-art facilities in all areas of research. CFI funds 40% of the research infrastructure costs, with partners (provinces, universities, and the private sector) providing the remaining 60%. There are a number of elements to this. Firstly, CFI focuses on excellence â?? research excellence underlies all CFI funding activities. It is the starting point in the design and implementation of our programs. Secondly, CFI must ensure that the research facilities it supports are sustainable; if we invest in a research facility, we must ensure that there is a business plan to sustain the operation of the facility over the life time of the equipment. Third, CFI fosters partnerships between institutions, the private sector, and the international research community. Fourth, CFI invests in infrastructure that supports international research collaboration; in many cases, CFI funded facilities act as a magnet for the best researchers in the world. Research today is a global effort.

CFI was founded in 1997, following a period of serious cutbacks in research funding. Over the past 15 years, the consistent investments made by the Government of Canada in research and technology development have transformed the research landscape across Canadaâ??s universities, colleges and research hospitals. Canada has gone from an era of â??brain drainâ?• in the early and mid-90s to an era of â??brain gain,â?• when some of the most brilliant researchers from around the world are now being attracted to this country because of its commitment to research. With 0.5 percent of the world population Canada produces 4.1 percent of the peer review journals around the world and five percent of the most highly cited papers. As we say, Canada is really punching above its weight class.

Canadaâ??s struggle has been on the business side of research and development (R&D). Minister Goodyear has been encouraging the government to refocus its efforts on fostering business R&D in Canada in order to bring ideas to market and ensure that we create wealth from our discoveries. CFIâ??s mandate with the government of Canada is: a) to support world class research; b) attract and retain the best researchers in the world; c) foster innovation and commercialization; and d) train the next generation of highly qualified personnel. Canadaâ??s higher education research ecosystem

is exceptionally strong. In recent years, the growth in the number of full-time graduate students in Canada has been very impressive; from 100,000 in 2000 to more than 210,000 in 2012. Research funding over the same period has more than tripled.

It is also important to understand the time-scale of our investments. For example, at the CFI it is not unusual for the time period between a research infrastructure award and the translation of research results to take between four and eight years depending on the nature of the research and of the research facilities. Accordingly, we need to be patient! This is not always the case for our elected officials who want to see the impact of our investments immediately! We have been very fortunate over the last fifteen years to have benefited from a continued and sustained level of investment in higher education R&D. Just recently, the government of Canada has launched a program called the Canada Excellence Research Chair (CERC) program, which attracted to Canada 19 outstanding researchers from around the world to set up laboratories with a $10 million investment to support their research and foster breakthrough discoveries. Ten more Canada Excellence Research Chairs are currently being recruited.

Another great example is the Canada Research Chair (CRC) program. In 2000, the government of Canada committed to an on-going investment of $300 million per year to support 2,000 research chairs. With these types of investments, including the creation of the Canada Foundation for Innovation, Canada has been able to reverse the brain drain of the 1990â??s. It is important to remember that researchers today are very mobile â?? their loyalty lies with to their research. Many of them will go wherever they can get the appropriate financial resources to support their research. These days researchers are very mobile.

Where does Canada rank? It is hard to say because of the fluid and dynamic nature of the environment. While Canada has made important investments in recent years, so has the rest of the world. Europe, the BRICs and other key regions of the world are all making massive investments in R&D. Our challenge is to grow our investments in R&D, in higher education R&D (HERD) but also in business, we need to increase our share of business expenditures in R&D (BERD).

The CFI allocates funds for health, engineering, environment, sciences, humanities and society. Health has by far the largest investment. What are the key therapeutic areas or trends that have been the most attractive and innovative?

Over the past 15 years, 50 percent of our investments have gone to the health sector â?? not by design but because of the nature and quality of the applications submitted to our various programs. CFI investments are driven by the strategic research plans of the institutions (universities, research hospitals and colleges) â?? in general, we run â??open competitionsâ?• with no thematic focus. In fact, the CFI will soon be launching a $330 million open competition where institutions will be invited to submit their high priority projects; the CFI will fund the best projects based on a rigorous peer/merit review process. For example, in 2006 the CFI invested $8 million in the Center for Drug Research & Development (CDRD), which is a Centre of Excellence for Commercialization and Research at the University of British Columbia. CDRD is a fully-integrated national drug development and commercialization centre, providing expertise and infrastructure to enable researchers from leading health research institutions to advance promising early-stage drug candidates. Over the years, the CFI has also invested in many genomics platforms across the country, including the Science and Technology Innovation Centres (Genome Canada). There is also a big emphasis on healthcare data analysis and personalized medicine. CFI works closely with the Canadian Institutes for Health Research (CIHR) in support of their Strategy for Patient Oriented Research (SPOR), which is about ensuring that the right patient receives the right intervention at the right time.

To date, the CFI has committed $5.7 billion in support of 7,685 projects at 131 research institutions in 65 municipalities across Canada. CFI contributions, along with those from funding partners, have resulted in a more than $12 billion investment in research infrastructure in Canadian institutions over 15 years. Who are those funding partners?

Funding partners generally include the provinces, the private sector and/or the institutions. As you know, the CFI provides 40 percent of the funding, with the remaining 60 percent coming from the partners. I would argue that this is part of the success of CFI. If a research institutes wants to build or modernize a research facility, it is much easier for them to secure the funding if the CFI has already committed to investing 40 percent of the costs of the facility.

Provinces have been key partners of the Canada Foundation for Innovation â?? contributing, in most cases, 40 percent of the required funding. The rest of the funding comes from the institution (i.e. universities, hospitals, or colleges) and/or from the private sector. The private sector can contribute to a project in a number of ways. Equipment manufacturers can contribute to a project by providing equipment at very low cost. In addition, private sector partners can contribute to a project by investing directly in the project and/or collaborating actively with the researchers. Increasingly, the CFI is trying to foster â??true partnershipsâ?• between institutions and their private sector partners.

$1.2 billion from the private sector has been given to CFI-funded projects to test products, build brand recognition and attract new customers. In terms of fostering those partnerships on an international level, how do you branch out?

The CFI funds research facilities that support world-class research and attract the best researchers in the world. Simultaneously, the added economic benefit for Canada is that many of these facilities are of interest not only to Canadian companies but also to foreign companies interested in the type of research that is being conducted in these facilities. For example, theWind Engineering, Energy and Environment Research Instituteat Western University is at the heart of the new Advanced Manufacturing Park in London, Ontario and will serve as the core of long-term partnerships with regional, national and international institutions. Already, the Advanced Manufacturing Park has attracted the interest of Germanyâ??s Fraunhofer-Gesellschaft, Europeâ??s largest applied research organization. If Canada has unique facilities, companies will come here.

Where do you see really the map of innovation across Canada over the next five years, in terms of infrastructure specifically?

CFIâ??s approach is very selective. Excellence drives our investments, and 80 percent of CFIâ??s investments have gone to the top 15 research universities in the country. This does not mean that smaller universities are not active or that they do not benefit from CFI investments, on the contrary. Many smaller universities have done exceptionally well at the CFI by focusing on their strengths; many are key partners of global research hubs or networks of centres of excellence. Canadaâ??s geographical distribution can be made to work for us. Because of our geographical distribution, 25 years ago Canada created thematic networks of centres of excellence (NCE); each hub has a number of spokes which reach out to the best researchers across the country, all working together on one theme. This concept has worked extremely well. In fact, I would argue that partnerships â?? national and international partnerships â?? are key to our success; that is the nature of research!

What would be you final message?

I think Canada has a lot to offer in so many different ways; a highly educated workforce, a stable and supportive political environment, a strong higher education system and a world-class research environment. It is a great place to do business and to conduct world class research.

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