



McGill

Investing in the Knowledge Economy

*Submission made by McGill University to the
House of Commons Standing Committee on
Finance*

August 6, 2014

Overview

McGill University welcomes the opportunity to provide input to the House of Commons Standing Committee on Finance during the pre-budget consultation process.

As hubs of inquiry, drivers of innovation, and incubators of talent, universities are important contributors to the economic, health and social well-being of Canadians. Universities are educating and training the leaders of tomorrow, preparing millions of Canadians for high-quality, high-impact jobs. Working with colleagues from academic and research institutions as well as from industry, at home and throughout the world, university researchers and students are making amazing discoveries across all sectors of knowledge. These scientific discoveries and technological innovations are quietly but steadily improving the lives of Canadians each and every day.

The Government of Canada understands that the knowledge economy is our future. Support for university research and training is not a simple expenditure, but an investment for a more prosperous Canada. Even in years of constrained budgets, the Government has continued to invest in research and innovation. In particular, McGill would like to thank the Government for the recent creation of the Canada First Research Excellence Fund, an exciting opportunity to reinforce the nation's global excellence.

Recommendations:

- ✓ **Maintain a Predictable Framework for Investments in Research**
 - Sustain investment in the foundation of research and development in Canada: the federal research granting agencies (SSHRC, NSERC, CIHR), Genome Canada, and the Canada Foundation for Innovation.
 - Support programs, such as the Networks of Centres of Excellence, that have demonstrated added-value in developing Canada's research and innovation ecosystem.
 - Expand the Indirect Costs Program to cover the full costs of research by raising the federal formula to a minimum of 40 percent of the direct costs for all institutions.

- ✓ **Leverage Investments in Innovation**
 - Continue to fund highly successful excellence-based recruitment programs, such as CRC, CERC, Banting and Vanier, for students and faculty members.
 - Invest in successful research training initiatives, such as NSERC CREATE and Mitacs.
 - Expand funding for entrepreneurship and university-community partnerships, through new micro-funding programs for student ventures and support for zones of interaction.

- ✓ **Strengthen the knowledge infrastructure**
 - Create an additional and specific knowledge infrastructure envelope within the Provincial-Territorial Infrastructure Component (PTIC) of the New Building Canada Plan.
 - Develop a long term plan and provide support for digital infrastructure for university research and training.

Increasing the competitiveness of Canadian businesses through research, development, innovation and commercialization

While the Government of Canada must remain fiscally prudent and address the national deficit, it must also ensure that our country is well positioned to respond competitively to international challenges. To this end, we must continue to support the many elements of the knowledge economy – such as competitively allocated research funding – that are the foundations of Canada’s innovation ecosystem.

Canada’s three federal granting agencies – the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC) – as well as funding organizations such as Genome Canada and Network of Centres of Excellence (NCE), provide the funding crucial to supporting Canadian research. The importance of discovery research cannot be overestimated – it is the cornerstone of innovation.

The Canada Foundation for Innovation (CFI) has been crucial in building and supporting the infrastructure necessary for innovative research and development, and for training the next generation of researchers and innovators. The CFI model has been a success because of the structure of the program, which requires that each dollar from the CFI be matched by other institutions (e.g. provincial governments, universities, private sector). The funds provided by the Government of Canada have been leveraged effectively to support world-class research infrastructure across the country. However, as with all infrastructure and technologies, and to maintain the competitive edge of our campuses, the investment must be constant and sustained.

Institutional costs associated with operating a research-intensive university like McGill are estimated at between 40% and 65% of direct costs, depending on the type and scale of research conducted. Currently the Government pays indirect costs averaging roughly 25%, but as low as 17% for the most research intensive institutions, of direct costs on Tri-Councils research grants. In spite of the positive impacts of the program, the federal indirect costs grant continues to fall short of appropriate levels of reimbursement. As a result, the universities that conduct the most research have the biggest funding shortfalls.

Recommendations:

- ✓ **Maintain a Predictable Framework for Investments in Research**
 - Sustain investment in the foundation of research and development in Canada: the federal research granting agencies (SSHRC, NSERC, CIHR), Genome Canada, and the Canada Foundation for Innovation.
 - Support programs, such as the Networks of Centres of Excellence, that have demonstrated added-value in developing Canada’s research and innovation ecosystem.
 - Expand the Indirect Costs Program to cover the full costs of research by raising the federal formula to a minimum of 40 percent of the direct costs for all institutions.

Maximizing the number and types of jobs for Canadians.

In recent years, the Government of Canada has invested in uniquely Canadian and complementary programs, which have transformed support for cutting-edge research. These extraordinary programs include the Canada Foundation for Innovation, Canada Research Chairs, Vanier Graduate Scholarships, Canada Excellence Research Chairs, Banting Postdoctoral Fellowships, and more recently, the new Canada First Research Excellence Fund (CFREF).

Training and education are central to the mission of universities and our contributions to society. Canada needs leaders, entrepreneurs, and workers with a mix of technical skills to address short-term market needs and the “soft” skills that provide adaptability to changing workforce needs over the long term. Student training programs like the highly successful NSERC Collaborative Research and Training Experience (CREATE) program, prepare highly qualified personnel (HQP) for the full spectrum of jobs in Canada’s key economic sectors. Students of “the innovation generation” (the Millennials) are thirsty for hands-on experience and opportunities to develop their entrepreneurial skills. One cost-efficient mechanism to support budding entrepreneurs would be to fund university-based seed programs that dispense micro-grants for student entrepreneurship projects.

Universities also have an important role in spurring entrepreneurship and the creation of small and medium enterprises (SMEs). Incubators and research parks linked to university campuses are recognized components of the innovation ecosystem. More and more, community-based initiatives, or “zones of interaction” such as the *Quartier de l’innovation* (QI) in Montreal and the Digital Media Zone in Toronto, are becoming important drivers of knowledge exchange with the community, including with SMEs. These spaces enable the exchange of ideas, methodologies and objectives across sectors bringing together different partners from business, academia, government, art and culture and community groups.

Recommendations:

✓ Leverage Investments in Innovation

- Continue to fund highly successful excellence-based recruitment programs, such as CRC, CERC, Banting and Vanier, for students and faculty members.
- Invest in successful research training initiatives, such as NSERC CREATE and Mitacs.
- Expand funding for entrepreneurship and university-community partnerships, through new micro-funding programs for student ventures and support for zones of interaction.

Ensuring prosperous and secure communities, including through support for infrastructure

Infrastructure is a necessary component of innovative research and development, and for training the next generation of scientists and researchers. In addition, investment in infrastructure provides broad economic stimulus to Canada's communities.

As the Federal Granting Councils noted in the white paper "Capitalizing on Big Data" (2013), Canada stands "at a potential tipping point of a tremendous wave of exploration, innovation, productivity and growth (...)". The Government of Canada's "Digital Canada 150" strategy ensures that the nation can take full advantage of the opportunities of the digital economy. Today's research is data-intensive and highly collaborative. Research-intensive institutions need an infrastructure network in Canada to allow researchers to more easily store, share and analyse digital research data, thus ensuring public investments are fully leveraged to support knowledge creation. Investment in integrated digital infrastructure is crucial in positioning Canada as a leader in the global knowledge economy.

With a \$2 billion investment over two years, the Government of Canada's Knowledge Infrastructure Program (KIP) dramatically enhanced research capacity, supported the attraction of new talent and provided a better educational experience for the highly skilled workers of tomorrow. It also generated significant economic benefits and supported job creation in more than 190 communities across Canada. McGill thanks the Government for having opened the Provincial-Territorial Infrastructure Component (PTIC) of the New Building Canada Plan to knowledge infrastructure, through its innovation category. Recognizing the significant short- and long-term benefits of KIP, McGill encourages the federal government to create an additional and specific knowledge infrastructure envelope within the Provincial-Territorial Infrastructure Component (PTIC) of the New Building Canada Plan.

Recommendations:

- ✓ **Strengthen the knowledge infrastructure**
 - Create an additional and specific knowledge infrastructure envelope within the Provincial-Territorial Infrastructure Component (PTIC) of the New Building Canada Plan.
 - Develop a long term plan and provide support for digital infrastructure for university research and training.