RESEARCH & INNOVATION INVESTMENT SUMMARY

Prepared by: Robert Merson, March 22, 2016

The new Liberal government has spoken a great deal over the past few weeks about the need to invest in Canada's economy, and every sector seems to be looking for their share of investment. Innovation has also been a word cited often since the Liberals came to power, but its clean energy that has been the most frequent context for this reference. However, recent announcements by Prime Minister Trudeau, such as the $20M FedDev investment for the Centre for Commercialization of Regenerative Medicine, and the direct reference to Canada's biotech sector at the World Economic Forum in Davos, Switzerland, has offered hope that the life sciences will become a priority sector for this government.

Overall, the budget did not disappoint. Much needed investments in basic research have been significantly improved over the previous government's commitments. A new investment of $2B was announced beginning this year for a Post-Secondary Institutions Strategic Investment Fund. The fund covers 50% of eligible infrastructure projects and presumably will be administer by, or will replace the Canada Foundation for Innovation. The tri-council funding was also increased by an additional $95M/year beginning this year, in addition to the previously committed $46M/year announced by the previous government, for a total $141M/year.

Additional investments in basic research include:

- Mitacs - $14M over 2 years
- Genome Canada - $237.2M over 4 years
- CDRD - $32M over 2 years (beginning next year)
- Stem Cell Network - $12M over 2 years
- Perimeter Institute - $50M over 5 years (beginning next year)
- Brain Canada Foundation - $20M over 3 years

For innovation derived entrepreneurs and businesses on the other hand, the budget does not provide a clear understanding on how life science companies may benefit. The budget commits up to $800M over four years (starting in 2017) for innovative networks and clusters, but it is unclear how this money will be disbursed. The government states that it is committed to helping "high-impact firms scale-up" but there is no specific funding allocated to this commitment. The NRC-IRAP program was however provided with an additional $50M investment for the 2016-17 year.

In summary, the budget is good news if you're in academia, but whether Canadian businesses will also grow and prosper from these investments is yet to be determined.

Highlights from the budget are included below.

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Excerpts on Innovation from the Canadian Federal Budget 2016

Compiled directly from budget (Source: Department of Finance, Budget 2016)
Highlights and section titles by R. Merson

Academic Infrastructure

Recognizing the value to Canada of strong post-secondary institutions, Budget 2016 proposes to provide ***up to $2 billion over three years, starting in 2016–17***, for a new Post-Secondary Institutions Strategic Investment Fund, a time-limited initiative that will ***support up to 50 per cent of the eligible costs of infrastructure projects at post-secondary institutions and affiliated research and commercialization organizations, in collaboration with provinces and territories***. This initiative is aimed at enhancing and modernizing research and commercialization facilities on Canadian campuses, as well as industry-relevant training facilities at college and polytechnic institutions, and projects that reduce greenhouse gas emissions and improve the environmental sustainability of these types of facilities.

The new Fund will support investments of the following types:

- A university could convert under-utilized space into new research labs that advance its excellence in a specialized field of strength;
- A college could modernize or create sector-specific training facilities, including capacity for advanced areas such as Red Seal trades;
- On-campus incubators and accelerators could be expanded to increase and improve support for entrepreneurs and start-ups as they develop strategies to grow their business;
- College and university facilities that support prototype development or proof-of-principle assessment could receive investments in order to better serve the needs of industry partners; and
- Post-secondary institutions could retrofit existing buildings for research and development or advanced training activities with more energy efficient heating systems and pursue Leadership in Energy and Environmental Design standards.

Discovery Research

Recognizing the fundamental role of investigator-led discovery research in an innovative society, Budget 2016 proposes to provide an ***additional $95 million per year***, starting in 2016–17, on an ongoing basis to the granting councils—the highest amount of new annual funding for discovery research in more than a decade. These funds will be allocated as follows:

- $30 million for the Canadian Institutes of Health Research;
- $30 million for the Natural Sciences and Engineering Research Council;
- $16 million for the Social Sciences and Humanities Research Council; and
- $19 million for the Research Support Fund to support the indirect costs borne by post-secondary institutions in undertaking federally sponsored research.

Together with the funding provided to the granting councils in Budget 2015 of $46 million in 2016–17 and ongoing, ***a total of $141 million in new annual resources*** will be made available to the granting councils going forward.

Additional Investments in World Class Research

- ***Mitacs,*** a national not-for-profit organization, builds partnerships between academia, industry and the world to create a more innovative Canada. Budget 2016 proposes to provide ***$14 million over two years, starting in 2016–17***, to the Mitacs Globalink program. This funding will support 825 internships and fellowships annually, helping Canadian universities to attract top students from around the world and enabling Canadian students to take advantage of training opportunities abroad.
- ***Genome Canada,*** a not-for-profit organization established in 2000, plays a central role in helping to identify possibilities and seize opportunities for Canada in the accelerating field of genomics. To continue to support leading genomics researchers and promising scientific breakthroughs, Budget 2016 proposes to provide ***$237.2 million in 2016–17*** to support the pan-Canadian activities of Genome Canada ***to the end of 2019–20***.
- Launched in 2007, the ***Centre for Drug Research and Development*** is a not-for-profit corporation located in Vancouver on the campus of the University of British Columbia. Its mandate is to identify and translate promising health research discoveries from universities across Canada into new medicines and therapies, a process that is both challenging and costly. To date, the Centre has advanced the commercialization of promising new therapies, secured commitments from leading pharmaceutical firms, attracted foreign investments to Canada, and affirmed its leadership on the global stage by championing the creation of the Global Alliance of Leading Drug Discovery and Development Centres. Budget 2016 proposes to provide ***up to $32 million over two years, starting in 2017–18***, to fuel the growth of the Centre's promising pipeline and contribute to fully reaping the benefits of Canada's significant investments in health research.
- ***The Stem Cell Network*** was created in 2001 to act as a catalyst for enabling the translation of stem cell research into clinical applications, commercial products and public policy. To further support Canadian strengths in this highly promising field, Budget 2016 proposes to provide ***up to $12 million over two years, starting in 2016–17***, to support the Network's research, training and outreach activities.
- ***The Perimeter Institute for Theoretical Physics*** in Waterloo, Ontario, is an independent centre devoted to foundational research in theoretical physics. Since its creation in 1999, the Institute has built a global reputation for its exceptional research environment and has demonstrated outstanding scientific merit, which has helped to attract top-tier researchers to Canada. The Institute also hosts hundreds of international researchers each year, trains promising new researchers, and undertakes outreach activities with students, teachers and members of the general public. Along with the University of Waterloo's Institute for Quantum Computing, the Perimeter Institute is a key institution in the region's Quantum Valley innovation ecosystem, which fuels Canada's leadership in new quantum technologies expected to transform and create new industries. Budget 2016 proposes to provide ***$50 million over five years, beginning in 2017–18***, to the Perimeter Institute to strengthen its position as a world-leading research centre for theoretical physics. Each federal dollar will be matched by two dollars from the Institute's other partners.
- ***The Brain Canada Foundation*** is a national, charitable organization that raises funds to foster advances in neuroscience discovery research, with the aim to enhance understanding and improve health care for those affected by neurological injury and disease. To help increase understanding of the brain and brain health, Budget 2016 proposes to provide ***up to $20 million over three years, starting in 2016–17***, for the Brain Canada Foundation's Canada Brain Research Fund, which supports competitively awarded, collaborative, multidisciplinary brain health and brain disorder research projects. Federal funding for this initiative will be matched by resources raised from other non-government partners of the Brain Canada Foundation.

Strengthening Innovative Networks and Clusters

Translating Canada's science and technology strengths into successful, globally competitive companies requires the private sector, post-secondary institutions, governments and other stakeholders to work together more strategically to achieve greater impact. Connections between knowledge producers and users— including researchers and firms—and collaboration within supply chains driven by market opportunities create value through innovation and support economic growth. Information gaps and coordination challenges may prevent these linkages from being developed to their full potential, impacting the strength of innovation ecosystems. To help address these challenges, Budget 2016 proposes to make available ***up to $800 million over four years, starting in 2017–18***, to support innovation networks and clusters as part of the Government's upcoming Innovation Agenda.

Helping High-Impact Firms Scale Up

The Government recognizes the vital role that high-impact firms play in creating jobs and generating economic growth. Having more firms realize their untapped growth potential supports a growing and innovative economy. However, these fast-growing firms tend to face common challenges at predictable points along their growth paths. By coordinating federal support such as financing solutions, advisory services and export and innovation support from key federal delivery organizations, these firms are better placed to invest in innovation and secure the talent and capital that will enable their success in the global marketplace.

Consistent with the Innovation Agenda's goals to better coordinate and align support for Canadian innovators, Budget 2016 proposes to launch ***a new initiative in 2016–17 to help high-impact firms scale up and further their global competitiveness***. Under this client-centric approach, firms will be able to access coordinated services tailored to their needs at crucial transition points, from key organizations starting with Innovation, Science and Economic Development Canada, the Business Development Bank of Canada, Export Development Canada, the National Research Council's Industrial Research Assistance Program, Global Affairs Canada's Trade Commissioner Service and the Regional Development Agencies. The initiative aims to target 1,000 firms in the first few years, and expand to more firms thereafter.

Helping Small and Medium-Sized Companies to Innovate and Grow

The National Research Council's Industrial Research Assistance Program supports innovative and growth-oriented small and medium-sized companies through advisory services, research and development project funding and networking. While further work to develop the Innovation Agenda takes place, Budget 2016 proposes to provide the Program with an ***additional $50 million in 2016–17*** to increase the number of companies served by the Program's highly qualified Industrial Technology Advisors nationwide. This funding complements the additional investments being proposed to support work experience for recent graduates through the Youth Employment Strategy

Summary Investment Table (Excerpts from Table 2.2 from Budget)

Table 2.2

GROWTH FOR THE MIDDLE CLASS

millions of dollars

	2015-16	2016-17	2017-18	Total

- Excluded sections -

Strengthening Science and Research				
Strategic Infrastructure Investments at Post-Secondary Institutions		500	1,250	1,750
Strengthening Canada's World-Class Research Capacity and Excellence		95	95	190
Promoting Canada as a Destination of Choice to Study and Conduct World-Class Research		7	7	14
Advancing Canadian Leadership in Genomics		237		237
Commercializing Canada's World-Class Health Discoveries			16	16
Strengthening Canada's International Leadership in Stem Cell Research Through the Stem Cell Network		6	6	12
Advancing Canada's Global Standing Through the Perimeter Institute for Theoretical Physics			10	10
Supporting Brain Research Through the Brain Canada Foundation		4	8	12
Supporting Canada's Continued Leadership in Space			10	10
Investing in Agricultural Science		4	6	10
Subtotal—Strengthening Science and Research		**853**	**1,408**	**2,261**
Supporting Business Growth and Innovation				
Strengthening Innovation Networks and Clusters			150	150
Helping Small and Medium-Sized Companies to Innovate and Grow		50		50
Linking Canadian Technology Companies to Global Markets and Expertise		2	2	4
Supporting Business Innovation Through Optics and Photonics Solutions		10	10	20
Marketing Canada as a Premier Tourism Destination		25	25	50
Strengthening Northern Economic Development		20	20	40
Mineral Exploration Tax Credit		30	-10	20
Subtotal—Supporting Business Growth and Innovation		**137**	**197**	**334**

- Excluded sections -