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Industry Canada
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Re: Consultation on Science, Technology and Innovation Strategy

Thank you for the opportunity to provide comments and feedback on the Science, Technology and Innovation Strategy consultation, and reiterate our strong support for the government’s focus on fostering a vibrant, innovative and world-class research system.

For the purposes of the consultation we have considered each question and described our recommendations following.

1. Business Innovation: Building on the advice provided by the Expert Panel on Federal Support for Research and Development, what more can be done to improve business investment in R&D and innovation?

York University is supportive of the initiatives taken by the Government of Canada to enhance business innovation and particularly applauds the demand-driven policies that incentivize innovative activity between public and private sectors, and help to focus research capacity on commercializing research breakthroughs and increasing private sector R&D. However, York would encourage the government to consider more post-secondary directed technology development funding in partnership with the private sector. Currently, there is a funding gap experienced in emerging early stage technology development at the university level. Often university technology at a prototype or technology validation stage has limited government supported development funding, which can be a hindrance to progressing research breakthroughs and ultimately moving forward to later stage development and commercialization.

York considers the 2013 the Venture Capital Action Plan as an essential component to the innovation ecosystem and vital to the commercialization of innovation and productivity growth in Canada. This Plan recognizes the need to demonstrate that Canada’s innovative firms represent superior return opportunities, supporting high-growth-potential technology ventures.

We commend the government on this worthy initiative and would encourage consideration of further expanding the available capital, or establishing a new source, for start-up and early-stage companies across all technology sectors. This will help to further meet the growth challenge and ensure more technology businesses get the human and financial capital at the early stage, accelerating their successful execution.

2. Business Innovation: What actions could be taken, by the government or others, to enhance the mobilization of knowledge and technology from government laboratories and universities, colleges and polytechnics to the private sector?
Universities are the primary generators of talent and new knowledge relevant to Canadians. Research generated across the university yields results with the potential to be translated in order to drive both technological and social innovation. In particular Knowledge Mobilization connects public and private sector organizations to maximize the social, environmental, and economic impacts of University research through social innovation.

Canada has a largely social and service driven economy. The service sectors generate 70% of all economic activity in Canada producing $819 billion of GDP compared with $375 billion for products and manufacturing. York feels strongly that Canada has a tremendous opportunity to expand supports for knowledge mobilization to maximize the economic, social and environmental impacts of investments in research through the growth of a strong pan-Canadian Post-Secondary Education enterprise for knowledge mobilization in support of social innovation. Innovation in these social and service sectors is Social Innovation which has positive social, economic and environmental (triple bottom line) impacts. Led by companies such as Unilever, IBM, Hewlett Packard, and other manufacturing and technology firms, the private sector is embracing Social Innovation as a core business driver. They are creating shared value by addressing growing markets for Social Innovation in such areas as poverty, mental health issues, autism, immigration, veterans’ affairs and literacy, among others; benefitting Canada’s economy by creating jobs, reducing demands on the public purse for health and social services and enhancing productivity through broader concepts of innovation.

Canada lags internationally in the promotion of knowledge mobilization and social innovation, with government strategies just beginning to be developed and implemented. York encourages the government to accelerate the development of a multi-sectoral, coordinated approach to promoting the mobilization of knowledge from post-secondary institutions in support of social innovation. York University currently has a proposal for consideration by the federal government for strategic support that would lead to improved return on investment for federal expenditures on research.

York University is the leader among Canadian universities in knowledge mobilization and along with University of Victoria, is a founding member of ResearchImpact a national web-based infrastructure to support knowledge mobilization and connect research outputs with users across Canada (other university partners are Memorial University, UQAM, University of Guelph, University of Saskatchewan, Université de Montreal, Carleton University, Wilfrid Laurier University and Kwantlen Polytechnic). York recommends supporting the development of capacity in the Canadian post-secondary university community for Social Innovation and Knowledge Mobilization- a pan-Canadian PSE enterprise for knowledge mobilization in support of social innovation (a global first). This investment would support the development of tools and services to facilitate the engagement of university research and its outcomes into business and society. It would also support development of means and measures to evaluate and articulate the various impacts of university research. Strategies include: building a base of local knowledge brokers that form the core of any institutional capacity for knowledge mobilization; supporting student internships and coop opportunities; promoting national networking for the sharing of knowledge mobilization tools and practices as well as development of a common evaluation framework.
Funding in this area will provide important means to maximize the return on government investments in university research and across broad sectors of the economy and society. Investments will ensure that Canada has a globally leading infrastructure for academic knowledge mobilization and social innovation. Canada will have a strong pipeline from the academic sector into the social economy fully unlocking the benefits of social intellectual property and will do this with a knowledgeable and engaged social economy work force.

3. Developing Innovative and Entrepreneurial People: How can Canada continue to develop, attract and retain the world’s top research talent at our businesses, research institutions, colleges and polytechnics, and universities?

Through the Government of Canada’s significant investments in programs aimed at attracting talent – including Canada Research Chairs, Canada Excellence Research Chairs, Vanier and Banting scholarships – Canada has considerably improved its ability to attract top students and researchers from around the world. York welcomes the federal government’s commitment to international education. We note with particular pleasure the government’s launch of a renewed foreign policy and trade plan which highlights education and the promotion of Canada’s research and innovation advantage abroad among its top priorities.

Further, we are encouraged with the report’s identification of international education as a priority sector that will strengthen Canada’s trade, investment and people-to-people ties in priority markets, as well as the value of Canadian universities in fostering research linkages. Canadian universities are recognized as world-class institutions. We feel strongly that they provide excellent education and research opportunities to Canadian and international students and are a key resource in attracting the world’s best and brightest to Canada. However, we need to be more aggressive in retaining the global race for talent. In particular, York feels that universities hold tremendous research opportunities for international graduate students and postdoctoral fellows, and their recruitment and subsequent retention in Canada should remain a key focus for the government. Specifically, an emphasis on recruitment through a dedicated scholarship/fellowship at that level, we feel could attract considerable foreign research talent. Further, when supplemented and subsidized by an additional interactive component with industry where applicable, as part of an international graduate degree/training program, we feel would not only be appealing but would help to retain more internationally recognized highly trained personnel within Canada to meet the needs of the economy and society.

We look forward to the government’s forthcoming launch of an international education strategy to build Canada’s brand of excellence in education and research. We echo many of the recommendations of the advisory panel, including doubling the number of international students coming to Canada (including international graduate students), establishing a new mechanism for supporting international research collaboration at scale, and creating a new program to send 50,000 Canadian students abroad annually by 2022.
Through the government’s continued support, Canada’s universities will make essential contributions to maintain Canada’s position on the world stage and to the recruitment, training and retention of a globally competitive workforce.

4. Excellence in Public and Post-Secondary Research and Development: How might Canada build upon its success as a world leader in discovery-driven research?

Pure discovery-oriented research and the development of creative works contribute to new scientific and technological discovery, to our knowledge base, and to enhancements in quality of life for Canadian citizens. At York, scholars are investigating the world around us. From the study of moral, political and legal philosophy to pure mathematics; from the study of molecular and subatomic interactions to understanding the human brain; from poetic representations of data and generative systems in light and sound installations to the novel use of artificial agents in interactive environments; from the study of the formations of cultures and languages and the origins of government to historical analysis of the development of political institutions and social formations; from the study of chromosomes to the understanding of the cosmos. The basic discovery of our world provides valuable insights into our potential as human beings.

York recognizes the important investments the Government of Canada has made in discovery research. Canada’s research exists and competes in an aggressive global environment; stable progressive investments in discovery-driven research will ensure and enhance the global competitiveness of Canada’s research, optimizing our ability to be competitive. To remain successful as a leader, Canada must resolve to make growth in research funding a fundamental principle within our universities and colleges. This is particularly true in light of Canada’s new foreign policy and trade plan that commits to growing Canada’s international postsecondary student population, where cutting edge training depends on a vibrant foundation of fundamental discovery, and attracting the best and brightest graduate and postdoctoral trainees depends on the supports available for discovery driven and applied research.

To leverage our success in discovery-driven research, Canada should commit to the principle of multi-year, sustainable and predictable research funding for the federal research granting agencies, coupled with increase to the Indirect Costs Program over time to ensure that universities have the resources they need to run the laboratories, knowledge mobilization and technology transfer offices, libraries and data systems that underpin research excellence. Investments in research excellence, including fundamental discovery-driven research, will allow Canada to build on the best of our research talent, scholarship, innovation and graduate programs, and on existing competitive programs. Specifically, York would welcome an increase in long-term discovery-driven research support by the Government of Canada, but would encourage a balanced funding approach, such that any investment does not erode areas of critical applied research support. Fundamental discovery research is the foundation upon which the research enterprise is built, and it is only with this solid foundation that we can work to expand our applied research- translating discovery into action, providing tangible benefits to society and the world around us.
5. Excellence in Public and Post-Secondary Research and Development: Is the Government of Canada’s suite of programs appropriately designed to best support research excellence?

The establishment of research excellence programs including Canada Research Chairs (CRC), Canada Excellence Research Chairs (CERC), Canada Foundation for Innovation (CFI) infrastructure funding, as well as Banting Postdoctoral Fellowships, Vanier Canada Graduate Scholarships, and other government sponsored programs, have truly transformed the research landscape in Canada. These critical investments support leading-edge research projects, build research capacity through the recruitment of outstanding new researchers and help to attract top graduate students and postdoctoral fellows. The Government of Canada’s suite of programs are of critical importance to York University. They have further contributed to an increased capacity for innovation, promoted inter-institutional collaborative and multidisciplinary research, facilitated private and public sector partnerships, and have generated social and economic benefits to Canada through technology and knowledge transfer.

Further, research excellence has been enhanced with the addition of funding agency focused salary award programs for researchers, protecting their time for engaging in critical research. However, in recent years there has been a steady decay in these types of alternative funding programs supporting research excellence at the faculty level. This has worked to dilute the impact of the suite of programs supporting research excellence. With an overarching goal of increasing the research capacity, and attracting and retaining outstanding scholars and scientists, York would recommend further expansion of the Canada Research Chairs program in particular, to rebalance this level of support. Such an investment would allow for a return to the program’s original ambition of driving research and development excellence by providing for a world-class research system.

York is supportive and encouraged by the government’s commitment to sustain and build on Canada’s strong capacity for knowledge generation and attracting talent. However, the current suite of programs is regarded as an extensive landscape to navigate. York feels this could be improved by considering a design simplification, and consolidating the program suite within the tri-council granting agency canopy. We feel this would strategically maximize the impact of the funding and contribute to increased program maneuverability for institutions and researchers.

Thank you for the opportunity to share our thoughts on the Science, Technology and Innovation consultation. We appreciate your continued consultation efforts to sharpen the focus and the impact of the ST&I investments, responsive to changing innovation landscape. Thank you for your consideration of our recommendations. We look forward to learning about the renewed ST&I Strategy.

Yours sincerely,

Robert Haché, Ph.D.
Vice-President Research & Innovation