Queen's University

Written Submission to the Standing Committee on Finance's Pre-Budget Consultations in Advance of the 2022 Federal Budget

August 2021

Queen's University recommends the Government of Canada…

Invest in Canada's Research Capacity and Talent

- *Enhance Canada's research capacity through sustained funding for the federal granting agencies and new investments for new funding programs.*
    - *Create a proof-of-concept fund for academic technologies and inventions.*
- *Increase Canada's competitiveness by investing in graduate scholarships, fellowships, and commercialization programs for researchers to attract and retain talent, and realize Canada's intellectual property.*
    - *Continue to expand Mitacs programs and develop a fund to support post-doctoral students in commercializing their intellectual property through start-ups.*
- *Enhance the Canada Excellence Research Chairs Program by committing to sustained funding and reorienting program objectives to both attract and retain top talent.*

Invest in Campus Infrastructure

- *Increase infrastructure funding for post-secondary institutions to help universities address aging and inaccessible infrastructure and digital infrastructure needs.*
- *Create an Emissions Reduction Infrastructure Program to support the adoption of GHG-reduction technology in the post-secondary sector.*
- *Provide a one-time investment to the Agnes Etherington Art Centre project—leveraging a multi-million-dollar philanthropic gift—to support arts and culture in Eastern Ontario.*

Invest in Canadian Low-Carbon Leadership

- *Invest $20 million over five years to support Queen's Institute for Sustainable Finance.*
- *Engage with provinces to continue development and implementation of Canada's Small Modular Reactor (SMR) Action Plan and dedicate federal funds to support related research partnerships.*

Introduction

With the economic challenges precipitated by the COVID-19 pandemic, competing global powers, and the growing climate emergency, Canada's economy is evolving rapidly to meet these challenges. Inevitably, these technological, societal, environmental, and political shifts—introducing new risks and uncertainties—will require Canada to position itself as a global leader in technology, science, and innovation.

As countries strive to overcome the economic impacts caused by the COVID-19 pandemic, there is an urgent need for immediate and sustained investments in the post-secondary sector. Significant investments in research and innovation in the United States, United Kingdom, and European Union present direct competition for Canada in attracting world-class talent required to fulfill its research missions. Universities are vital in developing net-zero technologies, advancing research and innovation, and training the highly-qualified personnel (HQP)—while creating a diverse range of jobs—to ensure Canada meets its commitments to Net-Zero Emissions by 2050 and maintains its international competitiveness.

For nearly 180 years, Queen's has been leading the way in addressing the most pressing issues of our day, while preparing the next generation of academic, government, and private sector leaders. Through this commitment to excellence, Queen's established itself as a leading Canadian university—one which prepares its graduates to excel in their chosen careers. The tradition continues today—in our medical and nursing graduates on the front lines of healthcare; in the laboratories of our dedicated researchers; and in our students, volunteering in their communities.

Queen's recognizes the government's important investments in bio-innovation, genomics, laboratory upgrades, and artificial intelligence, and is pleased to be a partner in the government's vision of building a more prosperous, competitive, and inclusive Canada. Queen's would like to express its support for the pre-budget recommendations of Universities Canada and the U15 Group of Canadian Research Universities, specifically the recommendation to set a benchmark of achieving 2.5% of GDP invested in research within five years and the recommendation to triple the number of Canada Graduate Scholarships for Master's-level degrees and double the number for PhDs and postdocs. Queen's University appreciates the opportunity to provide input to the House of Commons Standing Committee on Finance during the pre-budget consultation process.

Investing in Canada's Research Capacity and Talent

Queen's is committed to continue working closely with the government on the economic challenges posed by the COVID-19 pandemic and climate change, and producing the research, technology, and graduates essential to Canada's restart. However, Canada's research expenditure as a percentage of GDP is only 1.57%—and has been declining since 2001—while the United States is making significant investments in research and innovation by investing 2.9% of its GDP. The United States' investments in research creates direct competition for Canada to attract and retain top research talent. Universities

require immediate investments to activate their research capacity and talent to support Canada's leadership in these global policy challenges.

While sustained investments in the federal granting agencies are integral to the ongoing research activities at universities, opportunities exist to improve research capacity with new programs. New investments into new programs could fill gaps in funding for emerging research and innovation, and support contributions in fundamental science to drive Canada's long-term prosperity and leadership. Universities and the granting agencies also require necessary resources to adopt, implement, and adhere to the National Security Guidelines for Research Partnerships to maximize federal investments while collaborating with federally approved partners. At the moment, neither universities nor the granting agencies have the information and resources necessary to determine the scope and scale of national security concerns of research partnerships. New financial support for both universities and the granting agencies would help ensure the effective and feasible implementation of the guidelines for research partnerships.

Expanded graduate scholarships and fellowship opportunities would help Canada's universities attract the world's brightest and make Canada an ideal place to conduct research. Investing in outstanding researchers and their leading-edge work will help Canada compete on the world stage and capture a larger share of the future jobs and economic growth that comes from science, research, and technology development. Queen's welcomes increased funding for more graduate scholarship and fellowship opportunities to support Canada's exceptional research teams.

Queen's sincerely appreciates the federal government's commitment to the sustainability of the Canada Excellence Research Chairs (CERC) program, which has proven to be successful in attracting world-class researchers and supporting Canada's international research reputation. The CERC program has resulted in increased research capacity at host institutions and has greatly influenced the career trajectories of team members—contributing to a range of successes that extend beyond the accomplishments of the chairholder alone. Queen's encourages further commitments to program sustainability and reorientation of the program objectives towards both attracting and retaining top talent to ensure world-renowned researchers remain in Canada and continue strengthening Canada's competitive research ecosystem.

Investing in Campus Infrastructure

Canada's post-pandemic recovery will require investments in future-proof physical and digital infrastructure that equip universities with the adaptability and capacity to respond to climate change. Universities are poised to help Canada meet Net-Zero Emissions by 2050 through shovel-ready projects that will have positive environmental and economic impacts for our local communities and national competitiveness. Canada would benefit from university infrastructure that is green, inclusive, and digitally enabled—modernized and accessible campus and research infrastructure are crucial for universities to meaningfully support Canada's GHG-reduction goals and local community needs. Infrastructure funds, such as the Post-Secondary Institutions Strategic Investment Fund (PSI-SIF), are highly successful in maintaining campuses and ensuring a safe and high-quality learning environment. With the PSI-SIF, Queen's and the post-secondary sector were able to deliver shovel-ready projects to completion while meeting aggressive timelines.

Canada should demonstrate its commitments to sustainability and accessibility with new investments that leverage universities as drivers of societal impact, producers of talent, technology, and intellectual property, and contributors to the federal carbon pollution pricing system. Canada's universities have identified nearly $7 billion worth of shovel-ready campus infrastructure projects—many of which focus on reducing the environmental impact of campus activities. Universities require substantial funding to address deferred maintenance projects, such as upgrades to physical power plants, modernization of power systems and digital infrastructure, and retrofits to meet accessibility needs and carbon reduction targets.

While universities remain allies in Canada's effort to reduce GHG-emissions by contributing to the federal carbon pollution pricing system, they are underrepresented in current infrastructure programming due to limited eligibility and requirements for provincial matching of funds. Institutions that must participate in the federal carbon pollution pricing system do not have any recourse in the absence of a provincial carbon pricing scheme. Action is needed to make campuses sustainable and accessible to ensure an inclusive learning environment that exemplifies Canada's values. Queen's recommends that Budget 2022 creates a targeted Emissions Reduction Infrastructure Program for the post-secondary sector to help universities reduce Canada's GHG-emissions and the carbon footprint of campus activities. In implementing this proposal, the government can achieve meaningful and rapid progress on both its climate action and COVID-19 recovery priorities.

COVID-19 has highlighted the need for a national network of research labs focused on infectious disease, vaccine testing, and preparations for future pandemics. A national investment in infrastructure renewal and enhancements to support the research missions of universities would leverage existing university infrastructure, foster collaboration between research institutions, diversify our national network, and support the CERC program in attracting world-class talent—contributing to our international competitiveness and regional growth.

Queen's also proposes to build a world-class art centre on the current site of the Agnes Etherington Art Centre (AEAC)—the only professionally-run art museum between Ottawa and Toronto. An investment from the federal government would leverage a significant philanthropic donation of $40 million (USD) from Bader Philanthropies, Inc., and allow Queen's to create one of the largest university art museums in Canada. The new facility would bring together state-of-the-art learning spaces and art conservation laboratories with an emphasis on access and programming for the community. An investment in this new facility would not only deliver direct, high-ROI infrastructure stimulus and create jobs during construction—it would also expand one of Eastern Ontario's leading arts and cultural attractions, supporting the revitalization of tourism in Eastern Ontario.

Investing in Canadian Low-Carbon Leadership

As a climate action leader in Eastern Ontario, Queen's aims to be carbon neutral by 2040 and has already reduced its GHG-emissions by 24% from 2008 to 2019. From ideation to deployment, the university sector leads the development of emerging GHG-reduction technologies, trains the HQP that respond to climate change, and engages our communities to meet carbon reduction targets. To realize Net-Zero Emissions by

2050, immediate investments in the university sector are needed now to transition to clean, prosperous communities.

In November 2019, Queen's launched the Institute for Sustainable Finance (ISF) at the Smith School of Business—a first-of-its-kind collaborative hub, bringing together academia, the private sector, and government to increase Canada's sustainable finance capacity and accelerate Canada's transition to sustainable finance. The government can commit to an economically and environmentally sustainable future and help the Sustainable Finance Action Council meet its objectives by investing in the ISF—facilitating knowledge mobilization between industry and government, and improving access to climate data and analytics. The ISF will foster Canada's leadership in the shift to a low-carbon global economy, provide domestic, leading-edge research and expertise, and establish Canada as a leader in this emerging field.

Opportunities also exist for Canada to leverage its emerging expertise, along with the research strength at Queen's, to become a global leader in development and deployment of small modular reactor (SMR) technology. Queen's welcomed the release of Canada's SMR Action Plan and is proud to have been included as a partner. As the home of the Queen's Nuclear Materials Group—Canada's largest research group in its field—Queen's is also partnering with Ontario to leverage growing domestic expertise and position Canada as a global leader in SMR design, development, and implementation. Wide-scale deployment of SMRs will provide low-emissions energy to power Canada's growth and prosperity—aiding economic recovery, while helping to meet Canada's climate targets. Queen's encourages the federal government to collaborate with the provinces to continue development and implementation of Canada's SMR Action Plan and dedicate funds to support industry-academic partnerships, whether that is through the Strategic Innovation Fund or a dedicated funding stream. Together, Canada can lead the way—creating highly-skilled domestic jobs in research, manufacturing, commercialization, and operation of SMR technology, while promoting clean, sustainable energy.

Conclusion

Queen's University extends its sincere appreciation to the House of Commons Standing Committee on Finance for the opportunity to participate in the pre-budget consultations.