Recommendations in support of the Research Enterprise

University Research Enterprise

University research is a key contributor to Canadian prosperity. At its core, it is a training ground for graduate students. These students learn by taking part in research that enhances the wellbeing of our people, society and economy. In times of crisis, the importance of the breadth and depth of expertise found at universities becomes especially clear. Our researchers and their students have rapidly mobilized to help find solutions to the virus and its impacts. Without university research, researchers and graduate students, our country's ability to weather and recover from this crisis would be severely reduced.

To help fund this training and innovation environment, Canada's PSE institutions and researchers secure funding from a number of external sources. This has two important implications:

1. **We must consider impacts on all university research – not just that supported by the federal granting councils.** Universities received about $7.6B[1] in external research funding in 2017-18. About 38% came from the federal granting councils, 19% came from non-profits (e.g. health charities), 16% came from other levels of government and 14% came from businesses.
2. **We need to protect the people paid from these grants.** With respect to externally funded research, the largest expenses[2] are supporting graduate students and post-doctoral fellows (about 21%[3]) and technicians as well as other support personnel (14%). These individuals are essential to Canada's ability to preserve our country's R&D capacity but because they are paid from grants and contracts their employment is particularly vulnerable to research stoppage or restrictions.

University Research and COVID-19

The mobilization of universities and researchers to help fight COVID-19 underscores the importance of the knowledge and expertise created by this research and training environment. Canadian university researchers isolated the virus. They are working to rapidly discover treatments and vaccines, to help our front-line workers stay safe, and to understand the impacts of this crisis on our society. Many researchers whose expertise is not directly related to the virus or public health have joined the fight by tackling whatever part of the problem they can. Universities have also joined the fight by contributing their own PPE, reagents and other supplies to the national effort.

---

[1] Statistics Canada. Table 37-10-0026-01 Revenues of universities and degree-granting colleges (x 1,000)
[2] Statistics Canada. Table 37-10-0027-01 Expenditures of universities and degree-granting colleges (x 1,000)
[3] About 13% for salaries and a further 8% for scholarships, bursaries and prizes.

At the same time that much of the university research enterprise is mobilizing, physical distancing has required large swaths of the research enterprise to be shut down or heavily restricted. There are three main types of impacts:

- **Impact on people.** The main groups of people employed from research funding are trainees (graduate students and post-docs) and research personnel (technicians, etc.). Because these people are paid from research grants, their income can be vulnerable to research shutdowns or restrictions. This vulnerability is driven by two realities: a) the researchers need to preserve the resources required to complete the research they have committed to; and b) some funders have stipulated that their funds cannot be used to pay staff that cannot work due to COVID-19 prevention measures.

- **Impact on the research capacity.** As noted above, trainees are the engine of the university research enterprise. About 18% of Masters and 35% of PhD students are international. In some disciplines the proportion of graduate students that are international is much higher. For example, about 60% of Canada's engineering PhD enrolments are international students. This represents a very significant threat to Canada's research enterprise and labour market if border restrictions remain in place and we aren't able to significantly increase our domestic graduate student enrolment.

- **Impact on research institutions.** Throughout this shutdown, institutions are absorbing significant ongoing, research-related costs. These include animal care, maintenance and service contracts. Restarting normal research operations will have additional costs including resupplying labs with the materials, reagents, PPE and equipment contributed to the national effort.

We recognize and appreciate the efforts the federal granting agencies as well as broad federal government have already taken through updates to various programs. In particular, we'd like to applaud the government's efforts to mobilize university research to address the crisis through CIHR's COVID-19 Rapid Research Funding Opportunity, NSERC's special Alliance grant call and the government's $275M COVID-19 research fund.

Emerging ready for the next challenge

Ensuring our research enterprise emerges from this crisis intact and ready to quickly face the next challenge is essential. Before Canada was faced with this immediate COVID-19 crisis, we were struggling to respond to the urgent climate crisis as well as facing a number of other social and economic challenges. We will need a robust, broad university research enterprise helping our governments, businesses and non-profits take on these challenges. This crisis has demonstrated what can happen when the research community is mobilized around specific challenges. We must ensure we preserve and capitalize on this asset to aid in the recovery and tackle subsequent challenges.

Other university impacts of the COVID-19 pandemic

Ensuring our research enterprise emerges from this crisis intact is but one of several areas where universities and governments need to work together to address the impacts of the COVID-19 crisis. In addition to the recommendations contained in this document, we have developed a proposal to support students and are developing specific proposals related to international students, broader institutional impacts, and ways we can help Canada emerge from the crisis. These proposals will follow in the days ahead.

Recommendations

1. Support for research personnel whose work is impacted by the COVID-19 pandemic - $285 million per month

On March 23rd, Canada's granting councils called on researchers continue paying trainees and research personnel because "it is not only fair, but will help ensure a state of readiness within the research ecosystem". This same principle applies to research sponsored by non-profits, businesses or other sources. However, for those projects that have been put on hold or are severely limited by physical distancing measures, the costs associated with implementing this request is depleting either the grants or institutional resources.

To address this, we recommend the government invest $285 million per month in new funding to support of research personnel paid from any grant or contract whose research has been disrupted by COVID-19. This investment would offset costs associated with positions that could not effectively perform their research due to the crisis (e.g. could not perform research remotely, loss of funding from a partner, family obligations like caring for a child or sick family member).

This investment is intended for trainees and research personnel paid from grants and contracts. The recommended amount is comprised of $120M/month in salary and benefits for trainees, $55M in other research-related supports for trainees and $110M/month in salary and benefits for other research personnel[4]. Funding would be made retroactive to March 15, 2020.

2. Support graduate studies - $300 million per year

a) To support the increase in the number of students that will undertake graduate studies during this period of crisis, we recommend that an additional $210 million per year be invested in the Canada Graduate Scholarships to support 6,000 additional master's students and 3000 additional PhD students.

[4] Recommended estimate based on Statistics Canada's Financial Information of Colleges and Universities 2017-18 sponsored research expenses and includes both universities and affiliated hospitals. The data has been adjusted to account for revenue/cost growth since 2017-18 and divided into monthly costs.

b) In support of the research enterprise, we recommend an additional investment of $40 million per year to support more post-doctoral fellows (500 additional PDFs funded for 2 years).

c) In recognition of the importance of international students to Canada's research enterprise and labour force and to continue to attract exceptional international students and post-doctoral fellows, we recommend that $50 million per year be invested to attract top international master's and PhD students and post-doctoral fellows.

3. Support institutions - $100 million per month

In recognition of the ongoing operating costs and loss of revenues incurred by institutions as a result of the shutdown of the research enterprise (including animal care facilities, maintenance and service contracts, lack of charge backs on research grants and contracts, etc.), we recommend that up to $100 million per month[5] be made available to institutions on the basis of their demonstrated needs, for as long as the research enterprise remains shut down.

This fund would also be used to support the start-up costs of lab experiments that had to be terminated as a result of lab closure, such as the costs and burden on researchers and institutions to re-populate animal colonies and the costs associated with replacing the materials and supplies contributed to the fight against COVID-19.

4. Research in support of COVID-19 - $200 million

In support the COVID-19 research efforts, we recommend that an additional $200 million be invested in university and hospital research to augment the COVID-19 research efforts in Canada and in collaboration with our international partners. These investments should be focused on government identified strategic priorities associated with weathering and recovering from this crisis.

Conclusion

Canada's university research enterprise is a training ground for our next generation of researchers. They are at the core of Canada's ability to be a leading knowledge economy and will be essential to our country's ability to recover stronger. We must ensure that our research enterprise is positioned to restart quickly so that we can successfully tackle the next challenges that await. The measures outlined above will not mitigate all of the negative impacts of this crisis on our research enterprise, but it will keep the system sufficiently intact to allow it to restart quickly.

[5] Based on $50 M/month of maintenance and service contracts and $50 M/month of loss overhead.

For more information, contact Wendy Therrien, director, external relations and research, Universities Canada at wtherrien@univcan.ca or Mike Matheson, director, data analysis and policy, U15 at mike.matheson@u15.ca.