

Intelligence MEMOS



This week, we present the three top finishers in the C.D. Howe Institute Intelligence Memo competition, which was open to graduate students across the country. Today, our first co-winner.

From: Joe McKinnon

To: Canadian Innovation Policy Leaders

Date: October 23, 2023

Re: **IT'S TIME TO REPRIORITIZE FUNDAMENTAL RESEARCH**

Significant investments in fundamental research are needed to meet key public policy objectives such as a climate change adaptation and preparing for the next global health crisis.

To tackle these challenges, a proactive approach to supporting Canada's innovation ecosystem is required. Publicly funded fundamental research is essential to the innovative process as it expands our knowledge base and primes our economy to reap the benefits of momentous technological advances.

But well over a decade of [stagnant funding](#) in health research and underinvestment in the natural sciences, has hampered our innovative potential and leaves us underprepared to handle major threats to our national prosperity and to take advantage of opportunities to raise Canadians' standards of living.

Canada has historically [underinvested](#) in research and development (R&D) relative to our peers. Programs like the [Strategic Innovation Fund \(SIF\)](#) and the new [Canadian Innovation Corporation \(CIC\)](#) have been developed to address this issue, but they are primarily targeted at business R&D and exclude publicly supported organizations, like universities, as primary applicants.

Meanwhile, although there has been a steady increase in R&D expenditure globally, productivity growth in advanced economies is declining. A likely reason for this divergence is the [composition of research](#). Not all R&D investments are made equal: Essential but more opaque aspects of the innovative process have been underfunded, resulting in more money for business investments that have potential immediate rewards, at the expense of basic scientific research. For example, the percentage of funding directed towards basic health research in Canada has [fallen](#) by a third over the last two decades. This leaves Canada with a compounding domestic and international innovation problem, as innovation is hampered by both a lack of general funding and an under-emphasis on fundamental research.

Fundamental research, which is highly explorative, tends to suffer from the greatest funding challenges. Though it has generally proved to yield [significant returns](#) on investment and has been shown to have a long-lasting impact on productivity growth, returns from individual research projects are less predictable and more difficult to capture. Fundamental public science research has historically resulted in some of our greatest technological advances, and though the federal government has [recognized](#) that Canada's natural strengths in this area are underutilized, we have recently been moving further away from ensuring that science research is prioritized in our national innovation strategy.

Research funding in Canada is distributed by a variety of organizations, but they face critical limitations. The [Tri-agency's](#) responsibility is to provide grant funding for universities in the areas of health, science, and engineering, and yet, it had no new allocation in Budget 2023, five years after the last notable infusion – \$1.7 billion – in 2018. This despite recommendations from the recent federal research panel, [stating](#) a minimum 10-percent increase in funding to the granting councils is required to avoid further erosion of our research support system. This lack of investment has halted any increase in postdoctoral fellow funding limiting the number of graduate positions in cutting-edge sectors. For example, there are only half as many semiconductors available for student research at the University of Waterloo, as prices for these chips rise and funding stagnates. As a result, major Canadian universities fall behind, contributing to the [persistent challenge](#) of Canadian intellect gravitating to better-funded research ecosystems, most notably in the [United States](#).

The neglect of research in Budget 2023 entrenches the reality that since the early 1990s, research funding in Canada has languished, failing to even keep up with inflation.

At the Canadian Institutes of Health Research, only a [fraction](#) of research proposals are funded, even though many more meet eligibility criteria. Overall, this means Canada misses much innovation potential.

Funding for the tools and facilities that support Canada's research infrastructure is primarily distributed by the [Canadian Foundation for Innovation \(CFI\)](#). It supports more than 100 projects each year at universities, hospitals, and labs, with a newly increased annual allotment of [\\$462 million](#). While this may appear substantial, its distribution is tied to [government priorities](#), which under-prioritize fundamental research, reinforcing rigidity within our innovation ecosystem.

When compared to innovation-oriented business subsidies, there is a clear disparity in government priorities. It seems that the spigots are open for certain industrial investments – for example, Ottawa recently earmarked more than \$1 billion for building EV battery plants in [Ontario](#) and [Quebec](#). When one adds the Ontario Stellantis plant, well over [\\$30 billion](#) in subsidies will be distributed over next 10 years – while scientific research is not making the cut.

It's time to reset our research priorities.

Joe McKinnon, now a consultant with Hill and Knowlton in Ottawa, graduated from the Carleton University's master program in public policy and administration last spring.

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