CAN-ACN
CANADIAN ASSOCIATION FOR NEUROSCIENCE
ASSOCIATION CANADIENNE DES NEUROSCIENCES

Written Submission for the Pre-Budget Consultations in Advance of the 2025 Federal Budget

Investing in Canadian Science as a Cornerstone of National Prosperity and Economic Resilience

By the Canadian Association for Neuroscience

Pre-budget submission from the Canadian Association for Neuroscience
Contact us at advocacy@can-acn.org

CAN-ACN
CANADIAN ASSOCIATION FOR NEUROSCIENCE
ASSOCIATION CANADIENNE DES NEUROSCIENCES

Recommendations:

Recommendation 1:
That the Government of Canada increase the core budgets of the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council (NSERC), and the Social Sciences and Humanities Research Council (SSHRC) by 25% percent in the next budget and then by 10% ongoing annually for the following five years, effectively doubling scientific research investments in Canada. The objective of this recommendation is to bring Canada's investments in research and development to a level on par with other countries in the G7 and to support the Canadian economy.

Recommendation 2:
Given the rising prevalence of neurological and mental health disorders, it is imperative that the Government of Canada prioritize brain and mental health research. To address this urgent need, a comprehensive moonshot program dedicated to understanding the brain should be launched. This initiative will drive innovation and lead to significant improvements in public health across the country.

CAN-ACN
CANADIAN ASSOCIATION FOR NEUROSCIENCE
ASSOCIATION CANADIENNE DES NEUROSCIENCES

Why is investing in research and innovation a nation-building project?

Research is key to informing Canada's response to critical challenges.

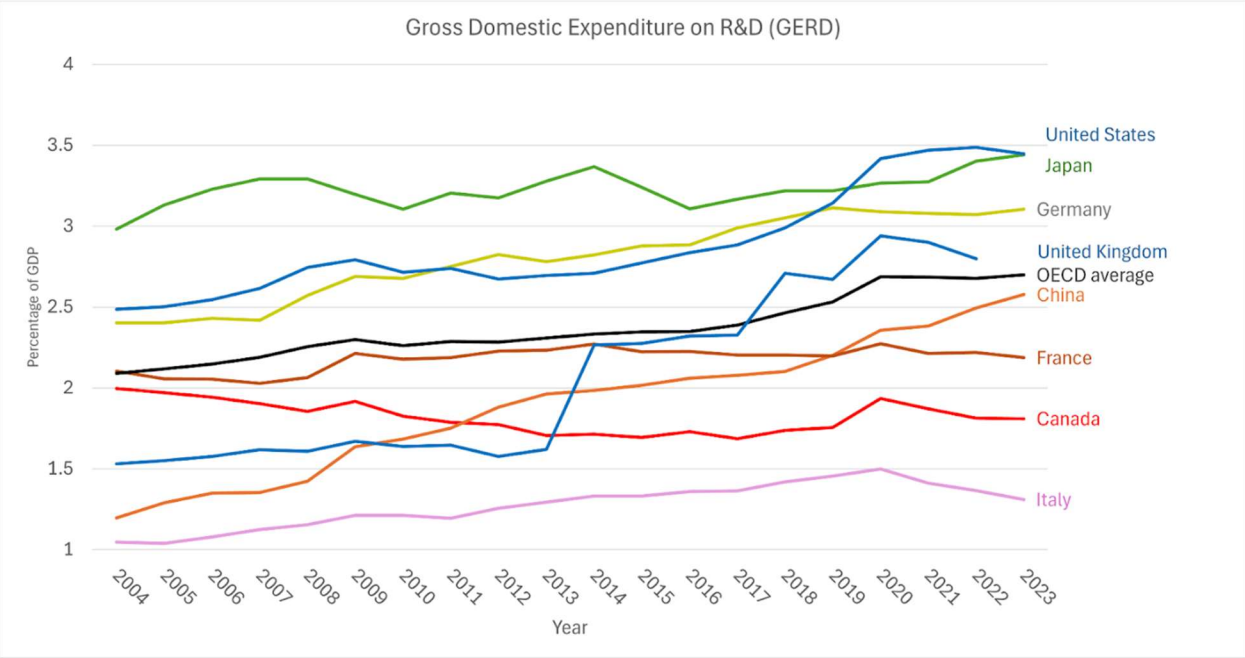
- **Strengthening Canada's Economy** – *Made-in-Canada* discoveries are the foundation for innovation that supports a stronger and more diverse Canadian economy. Investment in basic research catalyses further investments and significant return on investment for Canada.
- **Providing Good Jobs for Canadians** – Investing in scientific research leads to the creation of jobs for highly skilled workers within research laboratories, industry, government, and the public sector. Our student and intern trainees constitute important assets for medical and high-tech companies in Canada, who are looking to fill high paying and competitive job opportunities.
- **Building Canada's Competitiveness and Leadership in the World** – Canada's scientists are highly respected on the world stage and are leaders in brain research including **mental health**, **stroke**, **autism, dementia, pain, artificial intelligence, and spinal cord injury**. However, it is difficult for Canadian scientists to remain competitive and attract talent as the disparity in research support with other countries continues to widen.
- **Helping Canadians lead healthy and productive lives -** Brain and Mental Health disorders and diseases are the leading cause of disability and the second leading cause of death worldwide[1]. Through their research, Canadian neuroscientists work tirelessly to provide hope to Canadians who live with diseases and conditions for which there are currently no cures, and few treatments.

Investing in science and research is an investment in the **well-being of all Canadians.**

Canada is falling behind in science funding

Canada is the only country in the G7 whose investments in Research and Development have steadily declined over the last 20 years.

[1] Feigin et al. Lancet Neurol. 2019;18(5):459-480. doi:10.1016/S1474-4422(18)30499-X



Data from the Organisation for Economic Co-operation and Development (OECD)
https://data-viewer.oecd.org?chartId=d893ed65-6f0e-4563-9fd7-dd5bc3c16fb1

The government of Canada publishes yearly statistics on expenditures on Research and Development that also show the gap between Canada and the rest of the G7 continues to increase.

Gross domestic expenditures on research and development intensity in the G7 countries, 2020 to 2022, research and development intensity			
	2020	**2021**	**2022**
United States	3.42	3.48	3.59
Japan	3.26	3.28	3.41
Germany	3.13	3.13	3.13
United Kingdom	2.94	2.90	2.86
G7 average	2.64	2.61	2.61
France	2.27	2.22	2.18
Canada	1.93	1.87	1.81
Italy	1.51	1.43	1.32

Source(s): Tables 27-10-0273-01 and 36-10-0222-01, and the Organisation for Economic Co-Operation and Development Main Science and Technology Indicators database. https://www150.statcan.gc.ca/n1/daily-quotidien/241203/dq241203c-eng.htm

CAN-ACN
CANADIAN ASSOCIATION FOR NEUROSCIENCE
ASSOCIATION CANADIENNE DES NEUROSCIENCES

We propose that **Canada aim to quickly reach investment levels on par with the average of G7 countries** and commit to increasing investments over many years.

It is essential to accelerate the budget increase to CIHR, NSERC and SSHRC (tri-agency) and we propose a **25% increase in the next budget, followed by a 10% increase annually for the next 5 years**, which will result in a doubling of research investment over 6 years. This is an efficient way to address the need to better support trainees and research support staff paid through research grants, to support the scientific community and to boost the innovation economy.

Increasing the government's investment in health R&D will be key to a healthy Canada, both in terms of economics and the health of our citizens. Investment in Canadian brain research will not only support a knowledge-based economy prepared to face future challenges, it also provides evidence-based medical knowledge to improve and prevent brain diseases and disorders, which affect 50% of Canadians across their lifetimes.

Investing in talent - an opportunity for Canada to lead

Science is at a critical moment, as the US is considering reducing science funding for the first time in decades. Canada has the opportunity to step up its investments to retain and attract the best scientists and talent from around the world, who will contribute to building our country's leadership. Investing in science is a true Nation-building project, bringing the most innovative and diverse talent to Canada.

Significant increases in tri-agency funding will act as a driver for the innovation economy.

The International Monetary Fund published a detailed blog post explaining Why Basic Science Matters for Economic Growth

"While applied research is important to bring innovations to market, basic research expands the knowledge base needed for breakthrough scientific progress. A striking example is the development of COVID-19 vaccines, which in addition to saving millions of lives has helped bring forward the reopening of many economies, potentially injecting trillions into the global economy. Like other major innovations, scientists drew on decades of accumulated knowledge in different fields to develop the mRNA vaccines."
"Basic research is not tied to a particular product or country and can be combined in unpredictable ways and used in different fields. This means that it spreads more widely and remains relevant for a longer time than applied knowledge."

- *https://www.imf.org/en/Blogs/Articles/2021/10/06/blog-ch3-weo-why-basic-science-matters-for-economic-growth*

The World Economic Forum reached a similar conclusion

Discoveries being made today in labs and universities, and the work of the skilled and talented people who are trained in doing rigorous research, may well lead tomorrow or in a decade or two to new types of diagnostic tools for chronic diseases; or cheaper and greener energy technologies; or new insights into the interaction of animal and plant populations that will allow us to find ways of adapting to climate change. […]
Modern economies cannot afford to invest exclusively in applied research. We need to raise the overall level of the world's fundamental research and push the frontier of knowledge, if we want to be able to turn innovative ideas into products and services that will increase productivity and raise living standards across the globe.

- https://www.weforum.org/stories/2023/01/here-s-why-fund-fundamental-scientific-research-davos2023/

Canadians have much to gain from increased investments in science. The Royal Society (London) recently published a report on "Science and the Economy" to articulate the value of science to society, and support a long-term vision for science in the UK. The observations and conclusions of this report also apply to Canada:

https://royalsociety.org/-/media/policy/publications/2024/science-2040-economic-value-of-science.pdf

Supporting critically important brain research

"*Neurological diseases are major causes of death and disability globally, represent a quarter of all visits to family physicians, and have been challenging to treat and prevent. In the last three decades, major new developments in science have led* ***to treatments for stroke, multiple sclerosis, migraine, Alzheimer's disease, acute and chronic inflammatory neuropathies and multiple rare genetic muscle and nerve conditions.*** *Yet, the need remains vast. We need investment in foundational and clinical science, in highly qualified personnel to improve outcomes for Canadians*."

- **Michael D. Hill**, MD MSc FRCPC
President of the Canadian Neurological Sciences Federation

CAN-ACN
CANADIAN ASSOCIATION FOR NEUROSCIENCE
ASSOCIATION CANADIENNE DES NEUROSCIENCES

Canada must address Brain and Mental Health issues, which are among the most complex to understand, but also the most important we face – the burden of brain disorders and diseases, including stroke, has substantially increased over the last 25 years with an aging population.

Neurodegenerative and brain diseases are the leading cause of disability and the second leading cause of death worldwide (Feigin et al. Lancet Neurol. 2019;18(5):459-480. doi:10.1016/S1474-4422(18)30499-X), and mental health disorders are the leading cause of days off work. Canadian neuroscientists work tirelessly to identify cures and therapies for Canadians who live with these diseases and conditions.
In the report from the House of Commons standing committee on Science and Research study on "Pursuing a Canadian Moonshot Program", the Honourable **François-Philippe Champagne** testified that, *"it is vital that we focus our attention not only on the immediate matters we are facing as a nation but also on the long-term challenges and opportunities we face as a society, and I would say, indeed, globally*."

Understanding the brain is indeed one of the greatest challenges we face, and Canada is in a great position to launch a Brain moonshot program. Examples of projects that could be undertaken with such a moonshot program include "How to protect brains from stroke", "Eradicating common brain disorders like Alzheimer's and Parkinson's by 2050" or "Developing effective personalized treatments for mental health disorders". By providing dedicated support for such programs, Canada can provide leadership and hope for Canadians struggling with neurological and mental health issues.

Knowing that brain disorders will afflict 50% of the population, it is imperative that we invest massively in brain research. It is an investment in our health, our economy, and a better future for all Canadians.

Canada has a chance to lead

Diversity breeds scientific discoveries which fuel the economy. Current threats to academic freedom, barriers to open scientific inquiry, and the rise of **misinformation** coming from our neighbours to the south weaken public trust in science at a time when impartial **evidence-based solutions** and scientific knowledge are more important than ever. Canada can have an important role to play as a leader in science and research at this crucial period. Canadian researchers are ready to take on this challenge and contribute to Canada's positive leadership in a changing world.

We urge you to champion ambitious, sustained funding increases to Canada's research ecosystem. The stakes are high, but the opportunity is greater: to make Canadian science a global beacon, and ensure prosperity, innovation, and well-being for generations to come.

CAN-ACN
CANADIAN ASSOCIATION FOR NEUROSCIENCE
ASSOCIATION CANADIENNE DES NEUROSCIENCES

About the Canadian Association for Neuroscience

We are the largest association of neuroscientists in Canada, with over 1000 members dedicated to advancing research towards understanding the brain, associated disorders, and developing diagnostics and cures.

Contact:

Julie Poupart, PhD
Chief Operating and Advocacy Officer, Canadian Association for Neuroscience
Julie.Poupart@can-acn.org