

# The Future of Canadian Research and Science

## Submission to the Standing Committee on Science and Research's study on the New Capstone Research Funding Organization

October 2024

The Canadian Association of University Teachers (CAUT) represents seventy-two thousand researchers, teachers, librarians, and professional staff at over 125 universities, colleges, and polytechnics across the country. We commend the Science and Research Committee for its work studying proposed changes to the federal research support system and the creation of a new capstone research funding organization. Federal science and research funding is crucial to Canada's scientists and researchers in their pursuit of knowledge and understanding of current and future challenges facing Canadians and the world. Research supports in Canada have evolved over recent decades: we have seen changes to what gets funded, who gets funded, and how that's decided. Through the changes, fundamental principles for success have emerged; Canada's federal research funding system works best when it supports and emphasizes:

- Investigator-led research, including basic curiosity driven science;
- Inclusive programs encompassing the full breadth of all disciplines and researchers; and,
- Integrity and independence of research and funding decisions using peer review, free of government interference.

The proposed changes to the granting councils, as outlined in the [Annex to the letter](#) to the Presidents, are not consistent with recent expert panel recommendations for how to improve Canada's research funding system. In 2023, the Advisory Panel on the Federal Research Support System, chaired by Frédéric Bouchard, proposed the creation of a fourth funding agency to help close perceived gaps around mission-driven, interdisciplinary, and international research. Instead of following the advice of these experts, the government is now proposing an amalgamation of the current granting councils into a mega-agency, not unlike what happened in the United Kingdom (UK) with the creation of UK Research and Innovation in 2018.

CAUT is skeptical of the need to amalgamate the granting councils. Should the government proceed, it must take care to enshrine the principles of investigator-led, inclusive, and independent research funding into the new mega-agency.

Our submission elaborates on the fundamental principles of research funding, identifies risks of the proposed approach of moving forward with a capstone agency, and closes with key recommendations.

## Principle One – Investigator-led basic science

Fundamental science or basic research is the foundation of knowledge and innovation. History shows that groundbreaking discoveries are the dividends of unfettered curiosity and the pure pursuit of knowledge. Fundamental research has given us unanticipated applications like X-rays, nylon, Teflon, GPS technology, informatics, superconductivity, magnetic resonance imaging (MRI) and the mRNA vaccine. In short, when it comes to basic vs. applied research, there is no 'chicken or egg' question: basic research *always* comes first. Without fundamental science, there can be no avenues for applied research.

Because it is impossible to predict what basic research will ultimately lead to paradigm shifting discoveries, fundamental science needs broad, liberal and generous support. The 2017 Advisory Panel for the Review of Federal Support for Fundamental Science suggested, at minimum, a 3:1 distribution of investments in research between basic and applied. Other experts suggest the ratio should be closer to 4:1 to reap the best rewards for society.

According to the Bouchard report: "Fundamental, investigator-initiated research is the cornerstone of the research endeavour and must be supported at internationally competitive levels." As a first step, the report called for an increase of at least ten percent annually for five years to the granting councils' total base budgets for core grant programming.

The 2024 federal budget made significant investments in investigator-led research, committing \$1.8 billion over 5 years. This is a welcome investment, but with rising costs of research, fair wages needed to recruit and retain graduate students, and Canada's relative underperformance in investments in science compared to other countries, this 2024 investment is not enough. There is still a gaping need for the federal government to grow its financial support for fundamental science.

Further, financial support is needed to grow both the value and the number of grants awarded for investigator-led research. CAUT members report frustration and disappointment that many grant applications are approved on excellence but cannot proceed due to insufficient funding. Unfunded research means good ideas are left unexplored, curiosity is stunted, and our collective knowledge and know-how are poorer as a result. Since 2013, the success rate has averaged 38.2% for SSHRC Insight grants. CIHR's Project Grant program funded less than 20% of applications this past year. The NSERC Discovery Grant program had a 58% success rate in 2023, down from 67% in 2019.<sup>1</sup> The New Frontiers in Research Fund Exploration program for interdisciplinary science has had an average success rate of 23% since its inception in 2018. This means that across all disciplines funding only goes to between 23-58% of researchers whose research has received the green light as sufficiently excellent enough to fund. Canada is leaving tremendous scientific opportunities on the table.

If the government proceeds with the creation of a mega-agency, it should have as its primary mission the support of investigator-led basic research. It is critical that investigator-led fundamental science is protected and allowed to grow, particularly considering no new funding for the capstone agency and its mission-driven and expanded interdisciplinary and international focus.

## Principle Two – Inclusivity

The social sciences and humanities must not be further sidelined with the creation of the capstone organization. Nor should there be any loss of momentum in the tri-councils tremendous work advancing reconciliation and equity, diversity and inclusion.

The majority of Canadian researchers work in the social sciences and humanities, yet SSHRC receives only about a fifth of federal research funding. The value of individual social science and humanities grants needs to be increased and brought closer to those of research peers in other disciplines.

If international, mission-driven, and interdisciplinary programs are moved to the capstone agency, as proposed, it is critical that all disciplines are well-represented in its governance. Currently, SSHRC houses many inter-agency programs. This has ensured that social sciences and humanities are included in co-development and implementation of these overarching programs. Further, CAUT is concerned that another threat to equality and inclusiveness of all disciplines is the proposed downgrading of the Presidents of the granting councils and their advisory councils. The governing body and structure of the mega-agency must reflect the diversity of the research and science community, including disciplinary fields, equity representation, and career stages.

As for advancing reconciliation and equity, diversity and inclusion, the granting councils have done exemplary work. The continuation of this work into the future should be supported and its importance recognized in any future mega-agency's governance, its programming, and in the preamble of any relevant legislation. As a strong signal in this regard, CAUT was pleased this week to see the announcement of a second phase of the Dimensions program, launched by the Tri-Council in 2018 and overseen by NSERC.

## Principle Three – Independence and Integrity

Science is the pursuit of truth and knowledge. Without integrity, the entire scientific endeavor is jeopardized. The integrity of federally supported science and research is critical and must be protected: granting decisions must be free from political and commercial interference. Any new legislative framework needs to make it absolutely clear that federal research granting decisions are to be made independently.

Canadian governments have in the past undermined this independence. Rather than allowing for the scientific community to engage in the peer-review process to determine what research merits funding, recent decades saw targeted initiatives that required granting agencies to direct funds toward industrial collaborations, specific disciplines, and pet topics. The false pursuit of efficiency in research spending has tempted governments to try to pick scientific winners.

<sup>1</sup> SSHRC, CIHR, NSERC dashboards.

As John Polanyi, Canada's most prominent Nobel laureate, warned, when governments or industry try to direct scientific inquiry, our scientific horizons shrink, and our future is diminished.

"It is an abiding mystery why, having failed so definitively to pick winners in the marketplace for goods, governments have been empowered to pick winners in the far more subtle marketplace for ideas."<sup>2</sup>

CAUT is concerned that the creation of the capstone organization and the proposed repeal of the existing legislation in order to subordinate the granting councils will jeopardize the independence and integrity of Canadian science and research funding decisions.

As for the proposed Council on Science and Innovation, careful consideration is needed for crafting the relationship between it and the capstone agency's governance and the National Science Advisor. Both the Bouchard report and the 2017 Advisory Panel for the Review of Federal Support for Fundamental Science called for an independent advisory council to provide broad oversight and to develop and harmonize science and research strategies. Both reports' recommendations regarding composition, purpose and reporting lines should be considered and incorporated into any new mega-agency's board, the promised Council on Science and Innovation, and the role of the National Science Advisor. The goal ought to be a vision driving science and research led by the scientific community, reporting to both Innovation, Science and Economic Development Canada (ISED) and Health Ministers and to Parliament. Further, the National Science Advisor should be made an independent officer of Parliament and Chair of the Council on Science and Innovation. The elevation of the National Science Advisor role along with sufficient funding of their office would allow them to provide parliamentarians and government with analysis and insight into the state of Canada's science. They could properly champion and scrutinize our scientific policies, priorities, and funding as well as to raise the alarm when needed and to point out opportunities for the growth and flourishing of Canadian science.

<sup>2</sup> John Polanyi. Why our scientific discoveries need to surprise us, *The Globe and Mail*, 2011; and Hope lies in the scientific method, *The Globe and Mail*, 2009.

## Recommendations

It is in the interest of all Canadians that our science and research federal granting and funding system is healthy, robust and thriving. Improving and growing Canada's international, interdisciplinary and mission-driven efforts is commendable. Though this goal ought to be pursued, it cannot be at the expense of the principles of investigator-led, inclusive, and independent research. This is why CAUT calls on the government to ensure any future capstone agency emphasize and include:

- Investigator-led fundamental science, inclusive of all disciplines;
- Embedded support for indigenous research and equity, diversity and inclusion initiatives; and,
- Integrity of scientific decisions through rigorous peer review and majority representation of the research community in decision-making and advisory roles

CAUT welcomes the Science and Research Committee's study on the proposed creation of a capstone organization. We would welcome any questions that the committee may wish to put to us or any opportunity to speak directly to the committee about our concerns and recommendations.