



Canada's Fundamental Science Review



Colleges and Institutes Canada
Collèges et instituts Canada



September 30, 2016

Dr. David Naylor, Chair
Canada's Fundamental Science Review Panel
examen-science-review@canada.ca

Dear Dr. Naylor:

I am writing on behalf of the members of Colleges and Institutes Canada to provide the Fundamental Science Review Panel with input to assist them in their work. Colleges and Institutes Canada (CICan) is the national not-for-profit membership association of Canada's publicly-funded colleges, institutes, cégeps and polytechnics. CICan and its members are committed to driving Canadian prosperity by being global leaders in applied education and partnered innovation.

Colleges and institutes occupy a significant niche in Canada's research ecosystem, having capitalized on their community connections and modest federal investments in demand-driven, applied research that responds to the distinct innovation needs of local and regional partners, particularly small and medium enterprises (SMEs). In 2014-15 colleges and institutes worked with over 6000 partners, 86% of them SMEs or micro-enterprises, to improve or develop new products, prototypes, processes and services. Their partnerships include commercialization and knowledge mobilization activities undertaken in collaboration with universities in all research domains.

As you and the other Panel members are aware, colleges and institutes do not generally undertake research projects that would be classified as "fundamental" or "basic" science. Accordingly, we have directed our recommendations regarding the federal government's support for research to the Innovation Agenda consultation process where our strengths in commercialization and partnered innovation are most relevant. Our input includes a number of recommendations related to the structure and effectiveness of the programs offered by the granting agencies and CFI which we wish to draw to the Panel's attention. A copy of our [full submission](#) is attached.

Our members and their partners currently access most of their federal funding through a suite of eight tri-agency programs administered by NSERC, two funding streams offered by CFI and a pilot program introduced by SSHRC in 2014. In 2014-15 funding from the tri-agencies and CFI totaled \$57.4M, representing 70% of the federal funding directed to colleges. Overall, 2.4% of the federal investment in research is accessed by colleges and institutes.

CICan is calling for a significant increase in the applied research funding envelope available to colleges, from \$75M a year to \$300M ramped up over five years, to accelerate business growth – particularly in the clean tech sector -- improve social outcomes and make healthcare delivery more efficient.



CICan is also recommending that the federal programs that support this research be simplified and streamlined to be more responsive to the needs of research partners they serve by moving to:

- a pared-down suite of programs administered by a single organization and open to partners from all sectors to support multi-disciplinary research;
- flexible access to long-term, renewable funding that can be deployed “at the speed of business” – i.e., quickly and easily when a partner presents a viable opportunity;
- increased support for specialized research centres modeled on the current Technology Access Centres (TACs);
- eligibility for international partners collaborating with Canadian businesses or bringing operations and new employment opportunities to Canada;
- increased support for faculty participation and student employment on applied research projects;
- new funding to equip colleges and institutes to: proactively engage partners and identify innovation opportunities within clusters and regions; increase research training and support for faculty and students; incorporate more research activities in curriculum; strengthen and expand relationships with universities; maintain research equipment and facilities; and administer funding;
- reliable funding for the infrastructure and equipment.

It is important to recognize that the impressive results achieved by colleges and institutes and their applied research partners have been possible thanks to the support and encouragement of the federal granting councils. Beginning with a small pilot program in 2004, both funding and the number of programs have increased significantly over the past decade and have served as an important catalyst in attracting further investment. Most notably, private sector investments in college-based applied research now exceed those of the federal government and constitute 40% of the almost \$200M in research funding accessed by colleges and institutes annually from all sources.

The college-based applied research enterprise is ideally placed to unleash much of the untapped innovation potential that exists among SMEs and other organizations in the communities they serve, while providing students with experience that will increase their innovation skills as they enter the labour market. Colleges and Institutes Canada looks forward to working with the government and its advisors, both on the Panel and those involved in the development of the Innovation Agenda action plan, to design and implement a high performing research and innovation ecosystem that appropriately supports research across the full continuum.

Sincerely,

Denise Amyot

Cc: Hon. Kirsty Duncan, Minister of Science

September 29, 2016



The Honourable Kirsty Duncan
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Dr. David Naylor
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Dear Minister Duncan and Dr. Naylor:



We are writing to you regarding the federal government's Fundamental Science Review.



We commend Minister Duncan for launching this review of federal funding for fundamental science. We are of the view that the Fundamental Science Review is an essential step in ensuring Canada improves its place as a global leader in research and innovation.

We would also like to thank the Federal Government for its commitment to research and innovation clearly demonstrated in the 2016 Federal Budget; namely its investment of \$95M in additional and ongoing monies per year to the federal granting councils as well as \$237M to Genome Canada. We applaud the commitment of \$800M over four years to strengthen Innovation Networks and Clusters in Canada and for the Government's commitment of \$2B to the strategic investment fund. In addition, we thank the Federal Government for its investment of almost \$900M awarded to projects as a part of the CFREF.



Together, seven of our organizations represent the full spectrum of health, health care and life science research and development, from fundamental research, through clinical trials, through to applied research and commercialization of health care products, services and technologies. Research Canada, in addition, as an alliance of academic, private and voluntary stakeholders, itself, represents the full health innovation continuum.



On August 31st, 2016, our organizations met to discuss common messages to some of the ongoing federal government consultations. We are united in the view that Canada has a strong foundation in health and life science research — a foundation supported by world-class researchers, strong academic institutions and important health and life science clusters across the country. However, we also believe Canada can and must do more to improve its global competitiveness through strategic investment in the research continuum, including building greater capacity in our specific areas of research strength, from basic to applied research.

While our organizations will respond individually to the call for input on the Fundamental Science Review and other federal consultations currently underway, we welcome this opportunity to share the common themes we identified at our August 31st meeting.

First, Canada must ensure there are sufficient and appropriate funding mechanisms to support discovery research at levels that will sustain our international competitiveness and will ensure a critical level of activity in key research areas. Today, most discovery research takes place in academic institutions, with researchers depending on government programs for support. If Canada is to be a global leader in discovery research, we must **restore funding to internationally competitive levels.**

Similarly, we must also **ensure a coherent and balanced approach to funding the full spectrum of health research.** This includes basic research, multi-disciplinary and applied research involving partners in all sectors to support health system innovation, service delivery improvement, and new technologies for healthcare delivery and system integration. We must ensure that programs are explicitly available for translational research projects which bridge the gap between fundamental research and commercialization and which support community research needs.

We must also **ensure better coordination among research funders.** Across Canada there are a number of funding programs available to researchers and their partners. We would encourage a strategic review of these programs and how they relate to each other, in support of overall simplification and better coordination of communication, funding criteria and application processes across all funding agencies, with the goal of ensuring programs are accessible and complimentary. We must also recognize that the type of research being undertaken, and the context of that research, is evolving. Funding programs must include support for inter-disciplinary research projects that sit at the junction of health, engineering and social sciences and, with that, do not currently fit the funding criteria of any of Canada's three federal granting agencies.

As part of this review, we would also encourage you to consider how funding and/or funding mechanisms can help better support early career researchers. We are concerned by data from the Canadian Institutes of Health Research (CIHR) and the Association of Canadian Early Career Health Researchers, that suggest grants to young researchers are declining. To sustain our research capacity into the future, it is critical that we **introduce mechanisms to support and develop Canada’s young research community** today.

It is also **critical that funding decisions be timely**. The current review process for health and life science research is slow, affecting Canada’s ability to participate in a number of research scenarios including projects with international partners, projects with matching industry funding and research projects responding to time-sensitive issues (e.g. pandemic research). Though there have been some examples of this, we must ensure that funding streams specifically designed to provide a rapid turnaround are permanently in place for some types of projects.

Finally, there is a need to **ensure federal funding agencies collectively recognize the full costs of research to achieve a balanced approach to investments**. This includes an integrated approach to research and infrastructure funding — research cannot take place without the tools and equipment required to test the ideas and designs — as well as core funding support for research management.

Health and life science research is unique. It examines the impact of new medicines, technologies and processes on the human body, as well as the system as whole and healthcare delivery. This research is complex, lengthy and involves a high rate of trial and error to succeed. It also involves human subjects. When successful, however; products have broad impacts that include individual patients, society and the economy. A government that invests in health and life science research is investing in the future of its citizens.

Beyond the Fundamental Science Review, our organizations are also aligned in our view that the health and life science sector is a critical component of Canada’s innovation potential. In 2012, the Council of Canadian Academies identified Health & Related Life Sciences and Technologies as one of four major areas where Canada demonstrates particular strength in science and technology. With that, health and life sciences should be a priority sector under the federal government’s Innovation Agenda, and we would encourage you to position recommendations from the Fundamental Science Review in the context of the country’s overall innovation objectives.

We thank you for this opportunity to share our views. As you continue this important review, we ask that you consider involving our organizations in reviewing, discussing and prioritizing the recommendations you receive during the process itself. As representatives and stewards of the Canada's health and life sciences research sector, we would be pleased to meet with you and to host a roundtable discussion to consider how best to support fundamental health and life science research in Canada.

Sincerely,



Dr. Geneviève Moineau,
President and CEO
Association of Faculties of Medicine Canada



Ms. Connie Côté,
Executive Director
Health Charities Coalition of Canada



Mr. Andrew Casey,
President and CEO
BIOTEC Canada



Ms. Elaine Campbell, Interim President
Innovative Medicine Canada



Ms. Denise Amyot,
President and CEO
Colleges and Institutes Canada



Mr. Brian Lewis,
President and CEO
MEDEC



Mr. Bill Tholl,
President and CEO
HealthCareCAN



Ms. Deborah Gordon-El-Bihbety,
President and CEO
Research Canada

Association of Faculties of Medicine Canada

The Association of Faculties of Medicine of Canada (AFMC) represents the country's 17 faculties of medicine and is the national voice for academic medicine. Our organization was founded in 1943 with a mandate to individually and collectively support Canada's medical schools through promotion of medical education, research, and clinical care.

BIOTECanada

BIOTECanada is the national industry association with more than 200 members located nationwide, reflecting the diverse nature of Canada's health, industrial and agricultural biotechnology sectors. In addition to providing significant health benefits for Canadians, the biotechnology industry has quickly become an essential part of the transformation of many traditional cornerstones of the Canadian economy including manufacturing, automotive, energy, aerospace and forestry industries.

Colleges and Institutes Canada

Colleges and Institutes Canada (CICan) is the national not-for-profit membership association of Canada's publicly-funded colleges, institutes, cégeps and polytechnics. Known previously as the Association of Canadian Community Colleges (ACCC), CICan and its members are committed to driving Canadian prosperity by being global leaders in applied education and partnered innovation.

HealthCareCAN

HealthCareCAN is the national voice of healthcare organizations across Canada. We foster informed and continuous, results oriented discovery and innovation across the continuum of healthcare. We act with others to enhance the health of the people of Canada; to build the capability for high quality care; and to help ensure value for money in publicly financed, healthcare programs.

Health Charities Coalition of Canada

The Health Charities Coalition of Canada (HCCC) is a member-based organization comprised of 30 national health charities and patient groups who represent the voice of patients at all levels of the health continuum. A full list of our members can be found on our website at www.healthcharities.ca. Our mission is to facilitate the collaboration of Canada's health charities to achieve excellence in health policy, practice and research.

Innovative Medicine Canada

Innovative Medicines Canada is the national voice of Canada's innovative pharmaceutical industry. We advocate for policies that enable the discovery, development and commercialization of innovative medicines and vaccines that improve the lives of all Canadians. We support our members' commitment to being valued partners in the Canadian healthcare system.

MEDEC

MEDEC is the national association created by and for the Canadian medical technology industry. MEDEC is the primary source for advocacy, information and education on the medical technology industry for members, the greater healthcare community, industry partners and the general public. Our goals are to advance health outcomes for patients in Canada and the growth and vibrancy of the industry in Canada. We focus on ensuring access to proven, safe technology and new, innovative medical technology developed by our member companies.

Research Canada

Research Canada is a national, broad-based alliance dedicated to increasing investments in health research through collaborative advocacy. We believe health research is a shared benefit, shared responsibility and an investment in Canada's future. We engage government, academia, industry and nonprofit sectors to build support for balanced and long-term health research funding – investments that strengthen Canada's innovation system and lead to better health, sustainable health care, new commercialization opportunities, and skilled jobs for Canadians.