

Written Submission to the House of Commons Standing Committee on Science and Research

Study on the Support for the Commercialization of Intellectual Property

The Canadian Institutes of Health Research, or CIHR, would like to thank the committee for conducting such a thorough study on this important topic. Commercialization is an essential component in moving research from knowledge to tangible improved health outcomes for Canadians. A focused study on Canada's support for commercialization is extremely timely as the COVID-19 pandemic demonstrated the need to ensure that Canada supports the entire innovation pipeline, from the point of initial idea through to the commercialization of innovations.

As the federal health research funding agency, CIHR's mandate is to "...excel, according to internationally accepted standards of scientific excellence, in the creation of new knowledge and its translation into improved health for Canadians, more effective health services and products, and a strengthened Canadian health care system." CIHR recognizes that our organization has a pivotal role in creating the conditions for commercialization of intellectual property in health research in Canada by supporting projects, partnerships, and people, generally at low-to-mid [technology readiness levels](#). Through its *Strategic Plan 2021-2031*, CIHR reaffirmed its commitment to prioritize investments in research at all stages of discovery and mobilization focused on innovation, evidence to support health system transformation, and commercialization. In fact, as reported through its *Departmental Results Report*, in 2021-2022, 14.5% of CIHR funded research was cited in patents.

It is important to note that CIHR does not retain or claim any ownership of, or proprietary rights to intellectual property or inventions developed or resulting from research supported with our grant funds¹. The onus is on the Nominated Principal Investigator (or the Institution or both, depending on the Institution's policy on ownership of Intellectual Property) to seek patent protection, in collaboration with the partner where applicable, for inventions or developments arising from CIHR-supported research. Grant recipients that pursue commercialization of any results of the research are required to adhere to institutional and agency policies governing the assignment of intellectual property.

Funding Research with the Potential of Commercialization

CIHR and its federal research granting agency counterparts (the Natural Sciences and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC)) use the peer review process to assess and support research excellence. In this process, applications are assigned to reviewers who possess the required experience or expertise to properly assess the quality of the proposed research. To build upon existing high quality peer review processes at the granting agencies, and to provide an option for researchers working in

¹ [CIHR Application Administration Guide](#)

interdisciplinary research to direct their application to a committee with expertise from across the social sciences, humanities, natural sciences, engineering, and health sciences the **Tri-Agency Interdisciplinary Peer Review Committee** was launched. Interdisciplinary research fosters networking and collaborative research, combining the strengths of different research communities. Combining these strengths can be a way to advance knowledge and technologies with innovation potential.

The launch of programs such as the **New Frontiers in Research Fund** and the **Canada Biomedical Research Fund**, also demonstrate the continued commitment of CIHR and its Tri-Agency colleagues to work together to support collaborative, interdisciplinary science and research with the potential for commercialization.

Although these are just a few of the relevant Tri-Agency examples, this brief will focus on CIHR-specific programs and activities relevant to fostering Canadian-led commercialization efforts.

Investigator-Initiated and Priority-Driven Research

With an annual budget in 2021-22 of over \$1.3 billion, CIHR is the largest funder of health research in Canada, supporting over 15,000 world-class researchers from all pillars of health research and all regions of Canada. In 2021-22, approximately \$839 million² of CIHR's budget supported investigator-initiated research (also referred to as fundamental or open research), primarily through its Project Grant Competition. Investigator-initiated research is a critical component of the innovation continuum. As a result of investigators having the opportunity to study their own new, bold research questions, the results of this stream of research often have the greatest potential to advance towards commercialization.

The **Project Grant Competition** is open to applicants in all areas of health research that are aligned with CIHR's mandate. Importantly, commercialization-related applications are encouraged to apply to the Project Grant Competition and these applications for funding are assessed through the peer review committee with expertise in commercialization. This committee defines commercialization as the component of knowledge translation that is focused on bringing new products, tools, or services to a state of use in the private, not-for-profit, or public sectors, thus extending the definition beyond just bringing intellectual property to the marketplace for profit which is critical in the health research landscape. For example, this committee reviewed a project by Dr. Li Zhang that was funded in 2019 to advance a cancer treatment that harnesses the immune system to find and destroy cancerous cells – known as immunotherapy. Using a readily available immune cell in the body, this proposal will test a new platform for this therapy to treat different cancers. The goal is to create a cost-effective, safe, and reliable method, leading to an 'off the shelf product' of stored immune cells that could be available on demand, increasing patient access to immunotherapy.

² [CIHR in Numbers - CIHR \(cihr-irsc.gc.ca\)](https://www.cihr-irsc.gc.ca/en/cihr-in-numbers)

In addition to investigator-initiated research, CIHR also supports priority-driven research. Priority-driven research refers to initiatives created by the Government of Canada to investigate pressing health issues that are of strategic importance to our country. CIHR supports numerous research initiatives aimed at developing new innovations, therapies or treatment approaches of specific health or health system issues.

An important priority-driven initiative for this study is CIHR's Clinical Trials Fund (CTF), which received \$250 million over three years through Budget 2021. The CTF was launched as part of the Biomanufacturing and Life Sciences Strategy to strengthen Canada's pandemic readiness and drive long-term, sustainable growth in the domestic life sciences industry. To do so, the Government seeks to support the development of novel and disruptive health technologies through clinical development to commercialization and manufacturing through a long-term Strategy. As such, the CTF aims to support research and researchers across the country to conduct the full spectrum of clinical trials including the development and testing of new drugs, treatments, and public health and health system interventions to prevent, detect, treat, or manage various diseases or medical conditions. For example, Dr. Todd Lee, from McGill University, is collaborating with researchers from Australia, Canada, Israel, New Zealand, Singapore and the UK through the S. aureus Network Adaptive Platform (SNAP) to evaluate multiple treatment strategies for staphylococcus aureus bloodstream infection to assess the effectiveness of different combinations of antibiotics in a randomized controlled trial.

Prioritizing Partnerships

To effectively support innovation and accelerate the process between scientific discovery and its application in policy, services, treatments or products, CIHR understands that individual components of the ecosystem cannot work in a silo. That is why CIHR's *Strategic Plan 2021-2031* commits CIHR to continue to enhance national and international collaboration. Fortunately, CIHR and its 13 Institutes have a strong history of partnership building within the health research ecosystem, all levels of government, non-profit organizations, and private industry. In fact, every year, in addition to investing CIHR's core budget of approximately \$1 billion, CIHR collaborates with around 250 partner organizations to invest approximately \$200 million of additional partner funds into grants and awards to support health researcher and trainees across Canada³.

An initiative that effectively demonstrates CIHR's commitment to leveraging partnerships to support innovation is **Canada's Strategy for Patient-Oriented Research (SPOR)**, an annual federal investment of \$60M, which is matched 1:1 by provinces and territories and other partners. SPOR is a pan-Canadian coalition which includes the federal government, provinces, territories, philanthropic organizations, academic institutions, and health charities dedicated to meaningfully engaging diverse people with lived and living experience as partners throughout the research process, focuses on patient-identified priorities, and improves patient outcomes.

³ [Infographic: Research for a healthier Canada - CIHR \(cihr-irsc.gc.ca\)](#)

SPOR-funded multidisciplinary health research and platforms provide a collaborative, co-led and co-funded federal/provincial/territorial (FPT) mechanism to address jurisdictional and national priorities, improving the health of Canadians and the FPT health care systems. For example, Innovative clinical trials (iCTs) use designs that are alternative to traditional Randomized Controlled Trials with application in areas ranging from product development to health system improvement. The SPOR iCT Initiative contributes to increasing Canadian competitiveness in iCT research, provides a stimulus for trialists to adopt new methodologies, and encourages collaboration with various stakeholders, including patients, decision makers, private sector partners and key stakeholders involved in other elements of SPOR. Through a CIHR call for proposals the SurgeCon: An Emergency Department Surge Management Platform at Memorial University of Newfoundland was funded to address emergency department (ED) wait times and improve patient experiences. SurgeCon is a quality improvement initiative to reduce ED wait times and includes an electronic Health component, a training program for ED staff, and a series of quality improvement initiatives. In 2020 there was four party collaborative research agreement with Eastern Health, SurgeCon Innovations, and MOBIA Technology Innovations that secured the rights of background intellectual property for academic purposes. Through a collaborative partnership with MOBIA Technology Innovations, there is a promising opportunity to scale-up the intervention beyond Newfoundland and Labrador and potential to commercialize the software as study findings continue to develop.

Providing Support for Top Talent

Supporting top talent is also essential to ensuring commercialization occurs in Canada now and into the future. CIHR recognizes the importance of supporting the development of research leaders of tomorrow by equipping trainees and early career researchers (ECRs) with the experiences and skills needed to lead high-impact, interdisciplinary health research careers in a rapidly evolving research and innovation landscape. Two examples of CIHR programs that directly respond to this are **Health System Impact Fellowship (HSIF)** and **Health Research Training Platform (H RTP)** programs.

Since 2017, the HSIF has provided highly-qualified doctoral trainees and post-doctoral fellows studying health services and policy research (HSPR) the opportunity to apply their research and analytic talents to critical challenges that are being addressed by the health system and related organizations (e.g., public, private for-profit, not-for-profit, and Indigenous health organizations that are not universities) outside of the traditional scholarly setting, and to develop professional experience, new skills, and networks. To date, this program has embedded 245 Fellows within 115 health system organizations across Canada to accelerate evidence-informed health system improvements while also developing the next generation of health system leaders, including at organizations focused on spurring innovation, such as the Ted Rogers Centre for Heart Research.

Additionally, in 2021, CIHR launched the HRTP, which has funded 13 unique training platforms for six years, to bring together researchers from different institutions and organizations with a view to increasing Canada's capacity to conduct research on specific disease areas and health challenges. Through these platforms, trainees and ECRs have access to interdisciplinary, inter-jurisdictional, and intersectoral training environments where they benefit from high-caliber academic, non-academic, and knowledge user mentors from a variety of disciplines, ultimately providing trainees with a broad-based foundation that can serve as a springboard to independent careers within and outside of academia. For example, Dr. Alex Mihailidis at the University of Toronto is leading the Early Professionals, Inspired Careers in AgeTech (EPIC-AT) Health Research Training Program that is focused on preparing graduate students, postdoctoral fellows and early career researchers to be future leaders in digital health solutions for older adults with complex health needs. EPIC-AT aims to equip their trainees with the skills and knowledge to develop, implement, and evaluate digital technology solutions across such areas as information and communication technologies, telemedicine, artificial intelligence, sensors, smart environments, and wearables.

Moving Forward

CIHR is positioning Canadian health researchers, including trainees and ECRs, to spur innovation and potentially commercialization now and into the future. Although CIHR is proud of the above-mentioned programs and initiatives, we are very much aware that Canadian researchers and innovators require ongoing support to remain internationally competitive within the commercialization landscape, a sentiment that has been reiterated by Committee witnesses. CIHR looks forward to the Committee's recommendations on this important matter.