2021–22
Departmental Results Report

Natural Sciences and Engineering Research Council of Canada

The Honourable François-Philippe Champagne, P.C., M.P.
Minister of Innovation, Science and Industry

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From the Minister

It is our pleasure to present the 2021–22 Departmental Results for Natural Sciences and Engineering Research Council of Canada (NSERC)

Over the past year, the various organizations in the ISED Portfolio have together worked hard to make Canada a global innovation leader and build an economy that works for everyone.

NSERC's investments continued to provide the foundation on which Canada's natural sciences and engineering research enterprise generated ideas, advanced knowledge, and gave Canadians the skills needed to fully contribute to our country's future economic prosperity. The agency continued to provide support for researchers and highly qualified personnel during the uncertain period of the COVID-19 pandemic.

We invite you to read this report to learn more about how NSERC, like ISED and its portfolio partners are working with and for Canadians to position Canada as a leader in the global economy.

The Honourable François-Philippe Champagne
Minister of Innovation, Science and Industry

From the President

Since 1978, NSERC has played a critically important role in the evolution of natural sciences and engineering research in Canada. Thanks to NSERC funding, scientists and engineers across Canada are supported as they search for scientific and technical breakthroughs that will benefit our country and the world. NSERC's programs support thousands of researchers, students, and postdoctoral fellows from coast to coast to coast, enabling them to develop their professional and technical skills and pursue novel discoveries and ideas. Through its science promotion programs and activities, NSERC also encourages Canadians to embrace a Science Technology Engineering and Math (STEM) mindset, so they can grow up curious and critical of the world around them.

Dr. Alejandro Adem
President

Over the last few years, NSERC has worked to address the differential impacts of the COVID-19 pandemic on the research community by providing crucial support and grant extensions throughout the pandemic.

NSERC's Departmental Results Report demonstrates delivery on our objectives to make Canadian natural sciences and engineering research internationally competitive, develop a pool of highly skilled people, and ensure that the results of the research we fund are leveraged for the benefit of all Canadians.

In 2021-22, NSERC worked in collaboration with partners, the Social Sciences and Humanities Research Council (SSHRC), the Canadian Institutes of Health Research (CIHR), the Canada Foundation for Innovation (CFI) and other organizations to advance work on federal priorities and to strengthen Canada's research ecosystem. We also worked closely with the research community to make science and engineering more equitable, accessible, diverse, and inclusive with the goal of encouraging all Canadians to see themselves as discoverers and innovators.

Results at a glance

In 2021-22, NSERC supported over 12,700 scientists and engineers and over 7,200 trainees at post-secondary institutions across Canada through its funding opportunities under its three Programs: the Discovery Research Program, the Research Training and Talent Development Program and the Research Partnerships Program, and achieved the following results:

Canada's natural sciences and engineering research is internationally competitive

NSERC continued to advance the international competitiveness of Canada's natural sciences and engineering research. The COVID-19 measures, guidelines and extensions introduced in 2020-21 continued into 2021-22 by providing support for researchers and highly qualified personnel during the uncertain period of the pandemic. Other highlights include:

- Provided COVID-19 extensions with funds representing an investment of $61.7M for 2021-2022 in Discovery Research.
- Continued to work with CIHR and SSHRC to implement the 2018-25 Tri-Agency EDI Action Plan.
- Published a comprehensive guide to assist the research community to integrate EDI considerations at each stage of the research process.
- Continued to provide targeted support for early career researchers (ECRs), with $92.5 million being committed over six years for new awards to ECRs.
- Continued membership in the Belmont Forum, an international research funding network dedicated to advancing sustainable development goals.
- Launched the Alliance International funding opportunity which supports Canadian university researchers working with leading international academic researchers to establish and grow international research collaborations and projects of global importance that will generate benefits to Canada

Canada has a pool of diverse and highly skilled people in the natural sciences and engineering

NSERC continued to support the growth and development of a pool of diverse and highly skilled people in the natural sciences and engineering. Other highlights include:

- Awarded two new prizes to honour recent Canadian Nobel laureates, Dr. Donna Strickland and Dr. Arthur B. McDonald.
- Modernized Undergraduate Student Research Awards Program[i] (USRA) program according to recommendations made in the 2019-20 GBA Plus analysis including an increase in award value from $4,500 to $6,000. Other changes include a focus on increasing transparency in the selection process and accessibility to the program to a more diverse group of students.
- Held the Healthy Cities Research Training Platform competition and awarded $5M over six years to implement Smart Cities interventions.
- Sustained a focus on science teachers and underrepresented groups such as girls and Indigenous youth in the PromoScience Program.

Canada's natural sciences and engineering research knowledge is used.

Through its Research Partnerships, NSERC continued to mobilize knowledge generated through the transformation of Canada's NSE research into results for the benefit of all Canadians. Other highlights include:

- Awarded 1,009 grants since the initial phased-in launch of the Alliance programing in June 2019, for a total funding amount of $312M dollars.
- Alliance Missions supported 81 projects, totaling more than $41M over two years. These collaborations, between postsecondary researchers and partner organizations from the private, public and not-for-profit sectors, addressed science and technology challenges that will translate research outcomes into economic benefits.
- Invested $86M in the College and Community Innovation (CCI) Program to increase innovation at the community and/or regional level by enabling Canadian colleges to increase their capacity to work with local organizations.

Internal Services

As NSERC moved forward into the post-pandemic environment, the necessary problem solving, and flexibility of the past years are now informing new standards of how the agency works and how it delivers programming. The following major initiatives that began before the pandemic have continued to be implemented with ongoing commitment:

- Renewing the workplace
- Supporting NSERC's workforce
- Becoming more agile
- Implementing the tri-agency grants management solution
- Engaging stakeholders
- Collecting self-identification data
- Publishing dashboards

For more information on NSERC's plans, priorities and results achieved, see the "Results: what we achieved" section of this report

Results: what we achieved

Core responsibilities

Funding Natural Sciences and Engineering Research and Training.

Description

The Natural Sciences and Engineering Research Council of Canada (NSERC), through grants, fellowships and scholarships, promotes and supports research and research training in the natural sciences and engineering to develop talent, generate discoveries, and support innovation in pursuit of economic and social outcomes for Canadians.

Results

Departmental Result: Canada's natural sciences and engineering research is internationally competitive.

NSERC continued to support the Minister of Innovation, Science and Industry in his mandate to support high-risk/high-reward transformative research and development to unleash bold new research ideas, drive technological breakthroughs, protect Canada's competitive advantage and help Canadian companies grow and create highly skilled jobs.

In 2021-22, NSERC supported over 12,700 researchers including scientists and engineers, at post-secondary institutions across Canada through its funding opportunities under the Discovery Research, Research Training and Talent Development, and Research Partnerships Programs. To lessen the impacts of COVID-19 and to support researchers and highly qualified personnel, over 1400 recipients of active grants received extensions, valuing $61.7M for 2021-2022.

The publication of research results in peer-reviewed journals is one of many factors used to measure discovery and knowledge generated in the natural sciences and engineering (NSE) in Canada, and citations of these publications provide a measure of knowledge flow and the influence of Canadian researchers. The ranking of Canada among OECD nations on the average citation in the NSE illustrates Canada's international competitive strength. Based on the most recent data available (2020), Canada ranked 17th among the 38 OECD countries with an Average Relative Citation score of 1.26.

Canada generates over 4% of global knowledge[ii], despite accounting for just 0.5% of the world's population. Canadian researchers collaborate extensively with international researchers to keep abreast of the latest research results. In 2021-22, 47% of NSERC funded publications involved international collaborators, which increases the impact of Canadian NSE research in the global research community.

NSERC continues to strengthen the international competitiveness of Canada's natural sciences and engineering research. Alliance International was launched on December 21, 2021, to support Canadian university researchers working with leading international academic researchers to establish and grow international research collaborations and projects of global

importance that will generate benefits to Canada. This funding opportunity does not require partner organizations (companies, government agencies, not-for-profit organizations) or contributions from partner organizations and offers two grant types: Catalyst grants and Collaboration grants[iii]. A total of 36 Catalyst grants have been awarded (not including Alliance International Quantum Catalyst grants). International collaborators have been identified from 28 different countries.

In 2021-22, NSERC continued to work with CIHR and SSHRC to implement the 2018-25 Tri-agency Equity, Diversity and Inclusion (EDI) Action Plan[iv], which was publicly released in April 2021. In July 2021, NSERC published a comprehensive guide[v] to assist the research community to integrate EDI considerations at each stage of the research process. NSERC also undertook the revision of the Guidelines on Assessment of Contributions to Research, Training and Mentoring[vi], to better align with the Declaration on Research Assessment (DORA)[vii] recommendations and promote a comprehensive and inclusive assessment of research.

The Dimensions pilot program is administered by NSERC[viii]. on behalf of the three federal research granting agencies. As of 2021-22, 141 postsecondary institutions and research organizations signaled their commitment to embed EDI principles in their policies, practices, and culture, by signing the Dimensions Charter[ix].

In 2021-22, NSERC continued to provide targeted support for early career researchers (ECRs). In the 2021 Discovery Grants competition, 490 supplements, valued at $12,500 each, provided timely resources to support ECRs as they established their research programs and hired students. As a result, $92.5 million were committed over six years for new awards to ECRs through the Discovery Grants and the Discovery Launch Supplements[x].

In collaboration with CIHR and SSHRC, the Tri-Agency Interdisciplinary Peer Review[xi] (TAIPR) pilot was launched in May 2021 as a mechanism to support interdisciplinary research. NSECR launched the Discovery Horizons pilot[xii] program as an entry point to this tri-agency initiative. The pilot received an overwhelming response from the researcher community with over 800 letters of intent (LOIs) submitted with projects spanning the full NSE spectrum, integrating health, social sciences, humanities, and indigenous research. Peer review by the TAIPR committee identified the top 10 Discovery Horizons applications to receive funding commencing in 2022-23.

In 2021-22, NSERC continued its membership in the Belmont Forum[xiii], an international research funding network dedicated to advancing sustainable development goals. NSERC participated in the annual plenary meeting as the Canadian representative and contributed to the scoping of calls for proposals. Similarly, NSERC continued its support of the Human Frontier Science Program[xiv] and participated in the governance throughout the year.

Departmental Result: Canada has a pool of diverse and highly skilled people in the natural sciences and engineering.

Canada maintains its standing as the most educated country in the world. Young Canadians generally have a higher level of post-secondary education than their counterparts across OECD countries, with 63% of young Canadians aged 25 to 34 attaining a college or university education compared with the OECD average of 45%. This is mainly due to a higher proportion of young Canadians attaining a college education—24% compared with the OECD average of 8%.

NSERC currently supports over 7,200 students and postdoctoral fellows through scholarships and fellowships and invests over $513 million in domestic and international student training through grants.

NSERC recognizes and rewards the talent, potential and accomplishments of the members of the Canadian NSE research community. In 2021-22, NSERC awarded the inaugural Donna Strickland Prize[xv] for Societal Impact of Natural Sciences and Engineering Research, that recognizes an individual or team whose outstanding research, conducted in Canada in the NSE, has led to exceptional benefits for Canadian society, environment and/or economy.

Highlight box: Talent

NSERC recognizes and rewards the talent, potential and accomplishments of the members of the Canadian research community in the NSE. Examples from 2021-22:

- Sajeev John from the Department of Physics at the University of Toronto is the 2021 winner of the Gerhard Herzberg Canada Gold Medal for Science and Engineering for his pioneering research in photonics. His discoveries are the driving force behind major technological advancements, and his revelations have impacted the fields of physics, chemistry, engineering, and medicine.
- Hanadi Sleiman from the Department of Chemistry at McGill University is the 2021 winner of the NSERC John C. Polanyi Award for her breakthrough research in the field of DNA nanotechnology, which have paved the way to a revolution in medical treatments for major diseases
- Natalie Ban from the University of Victoria is one of six 2021 E.W.R. Steacie Memorial Fellowship (now Arthur B. McDonald Fellowships) awardees for her work in the field of costal conservation. Her collaboration with Indigenous partners combines knowledge gathered through interviews with Elders and knowledge holders with recent scientific field and modelling data to understand changes in abundance through time.

The Undergraduate Student Research Awards[xvi] (USRA) program has been modernized according to recommendations made in the 2019-20 GBA Plus analysis including an increase in award value from $4,500 to $6,000, and a focus on increasing transparency in the selection process and accessibility to the program to a more diverse group of students.

Through its scholarship, fellowship, and grant funding opportunities, NSERC continued to support the development of highly qualified "marketplace-ready" people in the NSE. The Collaborative Research and Training Experience[xvii] (CREATE) funding opportunity helps research trainees to develop technical and professional skills. In 2021-22, 96 CREATE awardees received $26.8 million. Over 80% of CREATE initiatives offered trainees the opportunity to gain experience in enriched and varied research environments beyond their home

institution, including 70% of initiatives that offered internships in industrial, government, non-profit or other settings.

In 2021-22 NSERC, in collaboration with CIHR and SSHRC, held the Healthy Cities Research Training Platform[xviii] competition and $5M was awarded over six years to involve trainees in the implementation of Smart Cities, aiming to build healthy cities and communities.

In 2021-22, the PromoScience[xix] funding opportunity awarded a total of $10 million over three-year: 66% of the funded applications include programming for Indigenous youth, while 23% focus on girls. This funding helps provide Canadian youth access to innovative STEM programs that expose them to new skills and provide hands-on experiences to inspire them to become the next generation of scientists and engineers.

As a one-time, special response to the vaccine hesitancy in Canada, NSERC launched the Encouraging Vaccine Confidence in Canada[xx] PromoScience grants to support organizations with strong track records of science and/or health promotion to deliver evidence-based, vaccine-promoting information to key communities and groups and/or to build capacity in the community to promote confidence in vaccines. Jointly administered by the tri-agencies, it is expected that funded activities will mobilize knowledge to improve public understanding of vaccines and help Canadians to make evidence-based decisions. A total of 45 projects were funded, with NSERC contributing $1M.

NSERC continues to support 5 Chairs for Women in Science and Engineering[xxi] (CWSE) to promote the participation and retention of women in the natural science and engineering disciplines. Following the results of the first evaluation of this program, which was published in July 2021, work has been underway to address the recommendations of the evaluation and broaden the scope of the program to include a broader range of underrepresented groups.

After being canceled in 2020 due to the COVID-19 pandemic, the Science Odyssey[xxii] national campaign was held from May 1 to 16, 2021. Over 550 activities were delivered by 300 science outreach leaders across the country, with an estimated public participation surpassing 1 million Canadians. To celebrate this year's Canadian achievements in science, technology, engineering, arts, and mathematics, more than 90% of the events and activities were presented virtually. While most organizers usually don't use virtual platforms to deliver their outreach activities, this year the process allowed them to reach new and traditional audiences while hurdling the limitations imposed by COVID-19 public health regulations.

In 2021-22, an Indigenous Leadership Circle[xxiii] in Research was formed to help guide the implementation of the Canada Research Coordinating Committee's strategic plan, setting new directions to support Indigenous research and research training in Canada 2019-2022. The Leadership Circle, will ensure that the path to building new models for Indigenous research and research training will be guided by First Nations, Inuit and Métis Peoples.

Departmental Result: Canada's natural sciences and engineering research knowledge is used.

This result aims to mobilize knowledge generated through the transformation of Canada's NSE research into results for the benefit of all Canadians. Every year, NSERC-funded researchers work with over 2,600 partner organizations from the industry, not-for-profit, government and other sectors. In 2021–22, the Research Partnerships programs leveraged over $277 million of cash and in-kind contributions from non-academic partners to enable researchers to advance scientific knowledge, address real world challenges, and connect people and skills.

Since the initial launch of Alliance [xxiv] in June 2019, 1,009 applications were successful in receiving an NSERC grant between $20,000 to $1 million per year, supplemented by a partner contribution ranging from 33% to 50%, for a total funding amount from NSERC of $312M dollars (Alliance Option 1). In addition, 36 Alliance projects received 100% support from NSERC while contributions from partners were not required (Alliance Option 2). Overall, partners participating in Alliance projects committed a total of $170.4M. Small and medium sized organisations represent 65% of non-academic partners participating in the Alliance grants.

Alliance Missions grants[xxv] were launched in late October 2021 as a special call to provide two-year grants to energize Canada's economy and stimulate innovation. Designed to provide opportunities for the research community to address challenges that have emerged as a result of the pandemic, Alliance Missions grants targeted university researchers collaborating with private and public sector or not-for-profit organizations. Partner organizations are expected to meaningfully engage throughout the research process, from project design to adoption of the research results. In 2021-22 a total of 81 grants were funded for $21.1 million.

NSERC also partners with other research funding organizations to accelerate the benefits of NSE research in Canada. For example, NSERC and the Fonds de recherche du Québec Nature et technologies[xxvi] (FRQNT) awarded 33 grants through a pilot program to support research projects in the NSE fields led by early-career researchers from Quebec and conducted in collaboration with researchers from other Canadian provinces and territories. These grants are co-funded by NSERC and FRQNT, with NSERC providing $1.49M in FY 2021. As well, NSERC and Mitacs announced a joint initiative in April 2021, to streamline application and review processes related to NSERC Alliance and Mitacs Accelerate grants, resulting in 78 grants awarded.

Highlight box: Research Partnerships
In 2021-22, NSERC made great progress in formalizing partnerships with important research fundings across the world including: • The German Federal Ministry of Education and Research (BMBF). NSERC is supporting 10 research projects on hydrogen and fuel cell technologies, by providing $500,000 to support Canadian researchers, matching the BMBF contribution to German participants. These projects are expected to lay the groundwork for longer term collaborations and offer

> networking and interchange opportunities between Canadian researchers, students and their counterparts in Germany.
> - The European Commission. NSERC issued a joint call for research proposals on quantum technologies under Horizon Europe. By establishing strategic partnerships involving leading-edge scientists in quantum research, this call aims to reinforce European and Canadian research excellence.
> - The U.S. National Science Foundation (NSF). NSERC announced the first formal partnership between the agencies. The partnership paves the way for new collaborations between members of the research community in both countries to build inclusive partnerships at the frontiers of science and emerging technologies. A first joint collaborative research opportunity was announced in December 2021, focusing on quantum science and artificial intelligence.

The College and Community Innovation (CCI)[xxvii] Program, a tri-agency program administered by NSERC, supported innovation at the community and regional level with $86 million by enabling Canadian colleges to increase their capacity to work with local partner organizations. Federal Budget 2021 announced an additional $46.9 million over two years, to support Canada's economic recovery.

- Through the Applied Research and Technology Partnership[xxviii] (ARTP), launched in summer 2021, 74 grants were awarded to colleges, CEGEPs and polytechnics to help SMEs seize new opportunities by applying innovative research and technologies or developing them into useful new products and services.
- Mobilize grants[xxix] were launched in December 2021 to support the initiation of partnerships and enhance training opportunities at colleges. In addition, a new partnership was established with the Canada Council for the Arts (CCA) to complement the Community and College Social Innovation Fund[xxx], that promotes connecting college capacity to the research needs of local community organizations.

The Idea to Innovation[xxxi] (I2I) grants supported 80 new research and development projects with recognized technology transfer potential, assisting in technology validation and market connection. The Lab2Market[xxxii] (L2M) pilot provided support for 48 research and commercialization teams to undertake market research analysis on natural sciences and engineering knowledge developed through the support of other NSERC grants.

The funding to Networks of Centres of Excellence[xxxiii] (NCE) program continued and will transition to the New Frontiers in Research Fund[xxxiv] by 2024-25. The Centres of Excellence for Commercialization and Research[xxxv] (CECR) and the Business-led Networks of Centres of Excellence[xxxvi] (BL-NCE) programs continued to help connect businesses to Canada's world-class research enterprise and will be gradually transferred to ISED's Strategic Innovation Fund.

Gender-based analysis plus

With the objective of allocating funding in an equitable and inclusive manner, and to mitigate bias against underrepresented groups, NSERC continued to apply GBA Plus analysis to its programs and policies. In addition, NSERC provides EDI training to staff, with a total of 75% of the workforce having completed the Introduction to GBA Plus course as of April 2022.

Experimentation

An innovation hub was created in 2021-22 to increase collaboration internally and to experiment with new methods of creating connections between divisions across NSERC. The hub has also provided advice on elements of design for the Discovery Horizons pilot[xxxvii], in-person vs. virtual committee peer review meetings, and the grants administration platforms.

NSERC's 5-year pilot to experiment with Treasury Board's micro-funding instrument that allows the provision of low dollar value payments to individuals or not-for-profit organizations for targeted reasons, in situations where grants are considered low risk has come to an end. After a review of the programs, both the NSERC Student Ambassadors (NSA) and the NSERC Young Innovators (NYI) pilots have not been renewed.

Key risks

As is the case for all organizations, the COVID-19 pandemic has created its own unique challenges and opportunities for NSERC. The work conditions, tools, processes were adjusted to ensure the continuity of operations, having the health and safety of staff as a top priority.

NSERC continued to monitor the external environment impacting the research community in Canada and the agency's ability to adjust, to ensure that human and financial resources were available to sustain its operations and deliver its programs.

The pandemic added new pressures on NSERC operations, including delivery of new programs or management of existing programs as well as the planning of major corporate initiatives, such as the Tri-agency Grants Management Solution[xxxviii] and GCworkplace[xxxix].

In 2021-22 NSERC made substantial progress in equipping employees for remote work and prepared the organization for a transition a new hybrid work model. NSERC continued to roll out mobile work tools and processes. NSERC also engaged with Public Services and Procurement Canada on an ongoing basis to plan our future physical space, feeding the process with information gathered through employee consultation.

Results achieved

The following table shows, for NSERC, the results achieved, the performance indicators, the targets and the target dates for 2021–22, and the actual results for the three most recent fiscal years for which actual results are available.

Departmental result	Departmental result indicator	Target	Date to achieve target	2019–20 actual result	2020-21 actual result	2021–22 actual result
Canada's natural sciences and engineering research is internationally competitive	Canada's rank among OECD nations on the citation score of natural sciences and engineering research publications	At most 18	March 31, 2022	18	17	17*
	Percentage of funded research involving international collaboration	At least 47%	March 31, 2022	47%	48%	47%*
Canada has a pool of diverse and highly skilled people in the natural sciences and engineering	Number of research trainees supported by NSERC through scholarships and fellowships†	At least 7,000	March 31, 2022	N/A	7,467	7,204
	Funding allocated to support research trainees through grants†	At least $400M	March 31, 2022	N/A	$440M	$513M
	Percentage of newly funded recipients who self-identify as women¥	At least 33%‡	March 31, 2022	35.7%	35.2%	38.9%
	Percentage of newly funded recipients who self-identify as visible minorities†	At least 28%‡	March 31, 2022	N/A	28.5%	32.0%
	Percentage of newly funded recipients who self-identify as Indigenous peoples†	At least 1.4%‡	March 31. 2022	N/A	1.4%	2.1%
	Percentage of newly funded recipients who self-identify as persons with disabilities†	At least 1.9%‡	March 31, 2022	N/A	2.0%	3.5%
	Percentage of previously funded graduate students and postdoctoral fellows that list Research and	At least 80%	March 31, 2022	N/A§	82%	N/A§

Departmental result	Departmental result indicator	Target	Date to achieve target	2019–20 actual result	2020-21 actual result	2021–22 actual result
	Development as the main activity in their current position					
Canada's natural sciences and engineering research knowledge is used	Number of partners on research projects†	At least 3,400	March 31, 2022	N/A	3,348	2,677
	Percentage of funded projects reporting social and/or environmental outcomes for Canadians†	At least 74%	March 31, 2022	N/A	77%	70%
	Percentage of funded projects reporting economic outcomes for Canadians	At least 50%	March 31, 2022	52%	52%	52%
	Non-academic partner funding for research projects†	At least $320M	March 31, 2022	N/A	$352M	$277M

*Most recent data available

§ Data is only available every other year

† New indicator for 2021-22.

¥ New methodology to calculate the indicator; self-ID questionnaire results to be used.

‡Targets for EDI indicators were established using results from competition years 2018, 2019 and 2020.

Financial, human resources and performance information for NSERC's Program Inventory is available in GC InfoBase.[xl]

Budgetary financial resources (dollars)

The following table shows, for funding natural sciences and engineering research and training, budgetary spending for 2021–22, as well as actual spending for that year.

2021–22 Main Estimates	2021–22 planned spending	2021–22 total authorities available for use	2021–22 actual spending (authorities used)	2021–22 difference (actual spending minus planned spending)
1,356,837,786	1,356,837,786	1,398,766,121	1,386,588,431	29,750,645

Financial, human resources and performance information for NSERC's Program Inventory is available in GC InfoBase.[xli]

Human resources (full-time equivalents)

The following table shows, in full-time equivalents, the human resources the department needed to fulfill this core responsibility for 2021–22.

2021–22 planned full-time equivalents	2021–22 actual full-time equivalents	2021–22 difference (actual full-time equivalents minus planned full-time equivalents)
300	351	51

* The variance is mainly due to Budget 2021 (funding to support applied research partnerships and to prepare for the launch the national quantum strategy), the transfer of resources from internal services to core responsibilities and increased workloads relating to emerging needs, such as, the transition from an aging digital infrastructure and the creation of the Innovation Hub that is a shared unit between Research Partnerships (RP) and Research Grants and Scholarships (RGS) and serves as an incubator and safe space to experiment with innovative ideas in program design and peer review.

Financial, human resources and performance information for NSERC's Program Inventory is available in GC InfoBase.[xlii]

Internal services

Description

Internal services are those groups of related activities and resources that the federal government considers to be services in support of programs and/or required to meet corporate obligations of an organization. Internal services refers to the activities and resources of the 10 distinct service categories that support program delivery in the organization, regardless of the internal services delivery model in a department. The 10 service categories are:

- ▶ acquisition management services
- ▶ communication services
- ▶ financial management services
- ▶ human resources management services
- ▶ information management services
- ▶ information technology services
- ▶ legal services
- ▶ material management services
- ▶ management and oversight services
- ▶ real property management services

To effectively and efficiently execute its mandate, NSERC must remain a nimble, responsive and adaptive organization, one that ensures the well-being and productivity of its employees in a changing work environment. Following a second year of operating remotely, NSERC has continued to deliver its programming with minimal service disruptions. As NSERC moves forward into the post-pandemic environment, the necessary problem solving, and flexibility of the past years are now informing new standards of how the agency works and how it delivers programming. Major initiatives that began before the pandemic have continued to be implemented with ongoing commitment:

Renewing the workplace

NSERC was planning to move in 2021-22 to a new office location that aligns with the GCworkplace standard. While the move has been delayed, the Workplace Renewal initiative remains at the forefront as agency staff plan to return to the workplace in a hybrid work model, composed of open physical and virtual environments that will be supported by integrated technology and accessible work tools that will be conducive to motivating people to do their jobs most effectively. In 2021-2022 NSERC invested in modernizing work tools to ensure staff have supported technologies required to continue to innovate. This strategy outlines a multi-year roadmap and investment plan to ensure the agency's work tools remain current and enable more flexibility for staff and stakeholders to access and navigate agency resources.

Supporting NSERC's workforce

Knowing that achieving results depends on talented and dedicated staff, NSERC has multiple initiatives designed to create an environment where employees can thrive. The new People Strategy, launched in March 2022, maintains NSERC's commitment to a workforce that is talented and agile and meaningfully engaged to meeting NSERC's mandate, while continuing to foster a sage, healthy and inclusive work culture. The strategy sets out, in an integrated and focused way, its strategic priorities and commitments in key areas such as attracting and retaining a diverse and skilled workforce, fostering a healthy and safe workplace and modernizing both our grants and financial systems and infrastructure to ensure an agile and responsive workforce.

Becoming more agile

Over the past few years, the rate of change in the Canadian research context has increased. In 2021-22, NSERC focused on building its own flexibility and agility to respond to these changes. This included improving processes for allocation (and rapid reallocation) of resources, leveraging collaboration tools to support new and evolved virtual processes, and investment in upgrading its information management and information technology infrastructure.

Implementing the tri-agency grants management solution

NSERC continues to collaborate with CIHR and SSHRC to co-develop the Tri-Agency Grants Management Solution (TGMS). The project aims to improve on the Tri-agency's existing grants management systems which operate on dated technology and are limited in their ability to adapt to the changing needs of both the research community and the agencies themselves. In 2021-22, TGMS obtained project authorities which enabled the team to launch a competitive process to select the new solution. Through Shared Services Canada's Cloud Brokering Services, the Microsoft Power Platform was chosen as the platform that will support the Tri-agency grants management solution.

Engaging stakeholders.

Stakeholder engagement activities in 2021-22 featured new tools and business processes to strengthen the planning, coordination, implementation, and reporting of these activities.

Collecting self-identification data

In 2021-22, NSERC implemented a new self-identification questionnaire, to expand data collection regarding diversity of applications received, awards granted and peer-review committee members. Data analysis will help identify inequities and inform future decisions to address them.

Publication of dashboards

NSERC also launched a dynamic dashboard to expand the publicly available data for the Discovery Research and for the Alliance funding opportunities. New features of this data include multi-year competition outcomes for grants with cross-filtering capabilities and access to aggregated self-identification data. Continued development of the dashboard will increase access to information and transparency with the research community and Canadians.

Budgetary financial resources (dollars)

The following table shows, for internal services, budgetary spending for 2021–22, as well as spending for that year.

2021–22 Main Estimates	2021–22 planned spending	2021–22 total authorities available for use	2021–22 actual spending (authorities used)	2021–22 difference (actual spending minus planned spending)
23,473,582	23,473,582	30,477,073	26,686,490	(3,790,583)

The difference in actual versus planned spending in internal services is due to the upgrade to the new GC Workplace work location.

Human resources (full-time equivalents)

The following table shows, in full-time equivalents, the human resources the department needed to carry out its internal services for 2021–22.

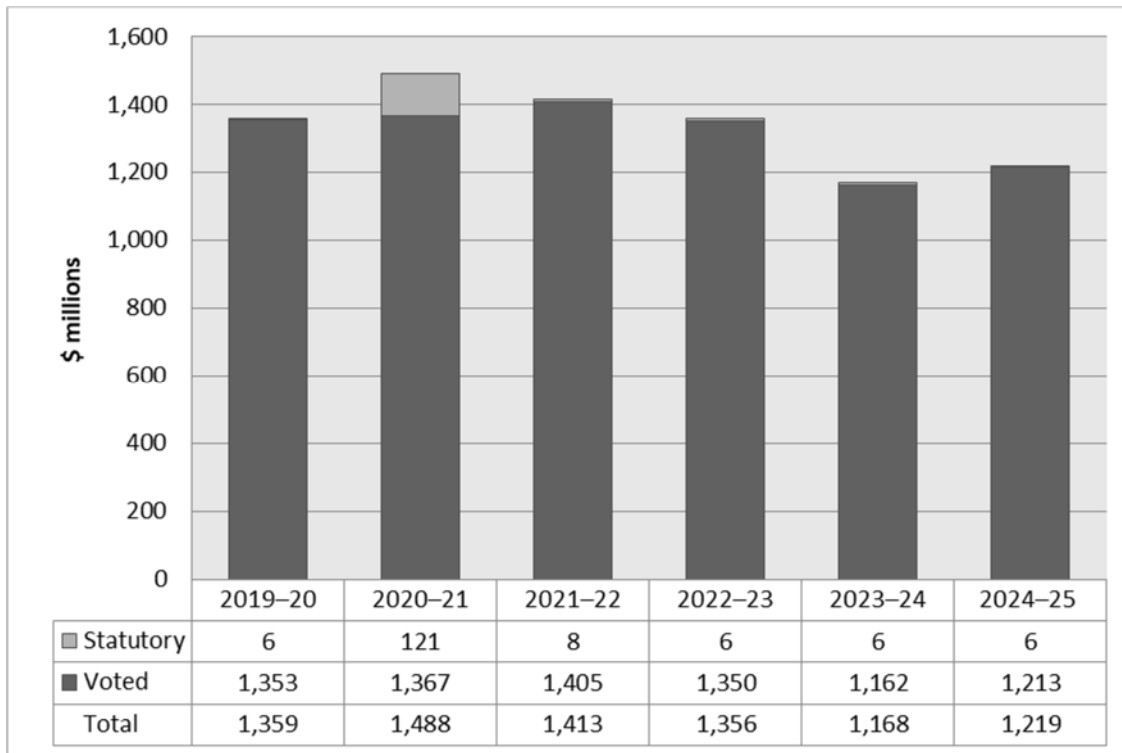| 2021–22 planned full-time equivalents	2021–22 actual full-time equivalents	2021–22 difference (actual full-time equivalents minus planned full-time equivalents)
165	152	(13)

*The variance is mainly due to the transfer of resources from internal services to core responsibilities to meet emerging requirements for the improvement of the grant management systems.

Spending and human resources

Spending

Spending 2019–20 to 2024–25

The following graph presents planned (voted and statutory spending) over time.

	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25
▢ Statutory	6	121	8	6	6	6
■ Voted	1,353	1,367	1,405	1,350	1,162	1,213
Total	1,359	1,488	1,413	1,356	1,168	1,219

*The decrease in planned spending from 2022-23 to 2023-24 is mainly due to the sunsetting of the Canada First Research Excellence Fund, anticipated to be renewed.

Budgetary performance summary for core responsibilities and internal services (dollars)

The "Budgetary performance summary for core responsibilities and internal services" table presents the budgetary financial resources allocated for NSERC's core responsibilities and for internal services.

Core responsibilities and internal services	2021–22 Main Estimates	2021–22 planned spending	2022–23 planned spending	2023–24 planned spending	2021–22 total authorities available for use	2019–20 actual spending (authorities used)	2020–21 actual spending (authorities used)	2021–22 actual spending (authorities used)
Funding Natural Sciences and Engineering Research and Training	1,356,837,786	1,356,837,786	1,301,085,016	1,175,678,836	1,398,766,121	1,332,759,771	1,459,503,049	1,386,588,431
Subtotal	**1,356,837,786**	**1,356,837,786**	**1,301,085,016**	**1,175,678,836**	**1,398,766,121**	**1,332,759,771**	**1,459,503,049**	**1,386,588,431**
Internal services	23,473,582	23,473,582	22,642,137	21,506,096	30,477,073	26,605,581	28,972,205	26,686,490
Total	**1,380,311,368**	**1,380,311,368**	**1,323,727,153**	**1,197,184,932**	**1,429,243,194**	**1,359,365,352**	**1,488,475,254**	**1,413,274,921**

*The variance of actual spending (authorities used) is due to increase of programs, communications and support services in delivering of funds for the implementation to support applied research programs (Budget 2021) and compensation adjustments resulting from the ratification of the NSERC terms and conditions of employment.

Human resources

The "Human resources summary for core responsibilities and internal services" table presents the full-time equivalents (FTEs) allocated to each of NSERC's core responsibilities and to internal services.

Human resources summary for core responsibilities and internal services

Core responsibilities and internal services	2019–20 actual full-time equivalents	2020–21 actual full-time equivalents	2021–22 planned full-time equivalents	2021–22 actual full-time equivalents	2022–23 planned full-time equivalents	2023–24 planned full-time equivalents
Funding Natural Sciences and Engineering Research and Training	303	315	300	351	298	297
Subtotal	**303**	**315**	**300**	**351**	**298**	**297**
Internal services	168	181	165	152	161	159
Total	**471**	**496**	**465**	**503**	**459**	**456**

Expenditures by vote

For information on NSERC's organizational voted and statutory expenditures, consult the Public Accounts of Canada 2021.[xliii]

Government of Canada spending and activities

Information on the alignment of NSERC's spending with Government of Canada's spending and activities is available in GC InfoBase.[xliv]

Financial statements and financial statements highlights

Financial statements

NSERC's financial statements (unaudited) for the year ended March 31, 2022, are available on the NSERC's Website[xlv].

Financial statement highlights

Condensed Statement of Operations (unaudited) for the year ended March 31, 2022 (dollars)

Financial information	2021–22 planned results	2021–22 actual results	2020–21 actual results	Difference (2021–22 actual results minus 2021–22 planned results)	Difference (2021–22 actual results minus 2020–21 actual results)
Total expenses	1,387,593,000	1,412,928,527	1,491,878,822	25,335,527	(78,950,295)
Total revenues	179,000	185,205	132,991	6,205	52,214
Net cost of operations before government funding and transfers	1,387,414,000	1,412,743,322	1,491,745,831	25,329,322	(79,002,509)

*2021-22 Planned results showed above represent amounts from the 2021-22 Future-Oriented Statement of Operations.[xlvi]

The decrease in total expenses over previous year is due to previous year's spending related to the PHENCPA to support students and youth impacted by COVID-19 as well as research institutes and universities.

The increase in total revenues over previous year is mainly due to an increase in SharePoint hosting revenues from other government departments.

Condensed Statement of Financial Position (unaudited) as of March 31, 2022 (dollars)

Financial information	2021–22	2020–21	Difference (2021–22 minus 2020–21)
Total net liabilities	59,871,658	43,143,418	16,728,240
Total net financial assets	56,195,044	40,790,374	15,404,670
Departmental net debt	3,676,614	2,353,044	1,323,570
Total non-financial assets	4,643,539	2,982,222	1,661,317
Departmental net financial position	966,925	629,178	337,747

The 2021–22 planned results information is provided on NSERC's website Future-Oriented Statement of Operations and Notes 2021–22.[xlvii]

The decrease in net liabilities and net financial assets is mainly due to a higher volume of grants and scholarships recorded as liabilities at the end of March 2022 compared to March 2021, and paid in April 2022 and April 2021, respectively.

The increase in non-financial assets is mainly due to the increase in NSERC's tangible capital assets, where expenditures related to the Workplace Renewal project were recorded as Construction-in-Progress during 2021-22.

Corporate information

Organizational profile

Appropriate minister: **Minister of Innovation, Science and Industry**

The Honourable François-Philippe Champagne, P.C., M.P.

Institutional head: Prof. Alejandro Adem, FRSC (President)

Ministerial portfolio: Innovation, Science and Economic Development

Enabling instrument: Natural Sciences and Engineering Research Council Act[xlviii]

Year of incorporation / commencement: May 1, 1978

Raison d'être, mandate and role: who we are and what we do

"Raison d'être, mandate and role: who we are and what we do" is available on NSERC's Website[xlix].

For more information on the department's organizational mandate letter commitments, see the "Minister's mandate letter[l]"

Operating context

Information on the operating context is available on NSERC's website[li].

Reporting framework

NSERC's Departmental Results Framework and Program Inventory of record for 2021–22 are shown below.

Departmental Results Framework	**Core Responsibility:** Funding Natural Sciences and Engineering Research and Training	**Internal Services**
	Departmental Result: Canada's natural sciences and engineering research is internationally competitive	**Indicator:** Canada's rank among OECD nations on the citation score of natural sciences and engineering research publications
		Indicator: Percentage of funded research involving international collaborations
	Departmental Result: Canada has a pool of diverse and highly skilled people in the natural sciences and engineering	**Indicator:** Percentage of newly funded recipients who self-identify as women
		Indicator: Percentage of newly funded recipients who self-identify as visible minorities
		Indicator: Percentage of newly funded recipients who self-identify as Indigenous peoples
		Indicator: Percentage of newly funded recipients who self-identify as persons with disabilities
		Indicator: Funding allocated to support research trainees through grants
		Indicator: Number of research trainees supported by NSERC through scholarships and fellowships
		Indicator: Percentage of previously funded graduate students and postdoctoral fellows that list Research and Development as the main activity in their current position
	Departmental Result: Canada's natural sciences and engineering research knowledge is used	**Indicator:** Non-academic partner funding for research projects
		Indicator: Number of partners on research projects
		Indicator: Percentage of funded projects reporting social and/or environmental outcomes for Canadians
		Indicator: Percentage of funded projects reporting economic outcomes for Canadians
Program Inventory	**Program: Discovery Research**	
	Program: Research Training and Talent Development	
	Program: Research Partnerships	

Supporting information on the program inventory

Financial, human resources and performance information for NSERC's Program Inventory is available in GC InfoBase.[lii]

Supplementary information tables

The following supplementary information tables are available on NSERC's website:

▸ Departmental Sustainable Development Strategy/Reporting on Green Procurement
▸ Details on transfer payment programs
▸ Gender-based analysis plus

Federal tax expenditures

The tax system can be used to achieve public policy objectives through the application of special measures such as low tax rates, exemptions, deductions, deferrals and credits. The Department of Finance Canada publishes cost estimates and projections for these measures each year in the Report on Federal Tax Expenditures.[liii] This report also provides detailed background information on tax expenditures, including descriptions, objectives, historical information and references to related federal spending programs as well as evaluations and GBA Plus of tax expenditures.

Organizational contact information

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Website(s): https://www.nserc-crsng.gc.ca/index_eng.asp

Appendix: definitions

appropriation *(crédit)*

Any authority of Parliament to pay money out of the Consolidated Revenue Fund.

budgetary expenditures *(dépenses budgétaires)*

Operating and capital expenditures; transfer payments to other levels of government, organizations or individuals; and payments to Crown corporations.

core responsibility *(responsabilité essentielle)*

An enduring function or role performed by a department. The intentions of the department with respect to a core responsibility are reflected in one or more related departmental results that the department seeks to contribute to or influence.

Departmental Plan *(plan ministériel)*

A report on the plans and expected performance of an appropriated department over a 3-year period. Departmental Plans are usually tabled in Parliament each spring.

departmental priority *(priorité)*

A plan or project that a department has chosen to focus and report on during the planning period. Priorities represent the things that are most important or what must be done first to support the achievement of the desired departmental results.

departmental result *(résultat ministériel)*

A consequence or outcome that a department seeks to achieve. A departmental result is often outside departments' immediate control, but it should be influenced by program-level outcomes.

departmental result indicator *(indicateur de résultat ministériel)*

A quantitative measure of progress on a departmental result.

departmental results framework *(cadre ministériel des résultats)*

A framework that connects the department's core responsibilities to its departmental results and departmental result indicators.

Departmental Results Report *(rapport sur les résultats ministériels)*

A report on a department's actual accomplishments against the plans, priorities and expected results set out in the corresponding Departmental Plan.

experimentation *(expérimentation)*

The conducting of activities that seek to first explore, then test and compare the effects and impacts of policies and interventions in order to inform evidence-based decision-making, and improve outcomes for Canadians, by learning what works, for whom and in what circumstances. Experimentation is related to, but distinct from innovation (the trying of new things), because it involves a rigorous comparison of results. For example, using a new website to communicate with Canadians can be an innovation; systematically testing the new website against existing outreach tools or an old website to see which one leads to more engagement, is experimentation.

full-time equivalent *(équivalent temps plein)*

A measure of the extent to which an employee represents a full person-year charge against a departmental budget. For a particular position, the full-time equivalent figure is the ratio of number of hours the person actually works divided by the standard number of hours set out in the person's collective agreement.

gender-based analysis plus (GBA Plus) *(analyse comparative entre les sexes plus [ACS Plus])*

An analytical tool used to support the development of responsive and inclusive policies, programs and other initiatives; and understand how factors such as sex, race, national and ethnic origin, Indigenous origin or identity, age, sexual orientation, socio-economic conditions, geography, culture and disability, impact experiences and outcomes, and can affect access to and experience of government programs.

government-wide priorities *(priorités pangouvernementales)*

For the purpose of the 2021–22 Departmental Results Report, government-wide priorities refers to those high-level themes outlining the government's agenda in the 2020 Speech from the Throne, namely: Protecting Canadians from COVID-19; Helping Canadians through the pandemic; Building back better – a resiliency agenda for the middle class; The Canada we're fighting for.

horizontal initiative *(initiative horizontale)*

An initiative where two or more federal organizations are given funding to pursue a shared outcome, often linked to a government priority.

non-budgetary expenditures *(dépenses non budgétaires)*

Net outlays and receipts related to loans, investments and advances, which change the composition of the financial assets of the Government of Canada.

performance (*rendement)*

What an organization did with its resources to achieve its results, how well those results compare to what the organization intended to achieve, and how well lessons learned have been identified.

performance indicator *(indicateur de rendement)*A qualitative or quantitative means of measuring an output or outcome, with the intention of gauging the performance of an organization, program, policy or initiative respecting expected results.

performance reporting *(production de rapports sur le rendement)*

The process of communicating evidence-based performance information. Performance reporting supports decision making, accountability and transparency.

plan *(plan)*

The articulation of strategic choices, which provides information on how an organization intends to achieve its priorities and associated results. Generally, a plan will explain the logic behind the strategies chosen and tend to focus on actions that lead to the expected result.

planned spending *(dépenses prévues)*

For Departmental Plans and Departmental Results Reports, planned spending refers to those amounts presented in Main Estimates.

A department is expected to be aware of the authorities that it has sought and received. The determination of planned spending is a departmental responsibility, and departments must be able to defend the expenditure and accrual numbers presented in their Departmental Plans and Departmental Results Reports.

program *(programme)*

Individual or groups of services, activities or combinations thereof that are managed together within the department and focus on a specific set of outputs, outcomes or service levels.

program inventory *(répertoire des programmes)*

Identifies all the department's programs and describes how resources are organized to contribute to the department's core responsibilities and results.

result *(résultat)*

A consequence attributed, in part, to an organization, policy, program or initiative. Results are not within the control of a single organization, policy, program or initiative; instead they are within the area of the organization's influence.

statutory expenditures *(dépenses législatives)*

Expenditures that Parliament has approved through legislation other than appropriation acts. The legislation sets out the purpose of the expenditures and the terms and conditions under which they may be made.

target *(cible)*

A measurable performance or success level that an organization, program or initiative plans to achieve within a specified time period. Targets can be either quantitative or qualitative.

voted expenditures *(dépenses votées)*

Expenditures that Parliament approves annually through an appropriation act. The vote wording becomes the governing conditions under which these expenditures may be made.

Endnotes

[i] Undergraduate Student Research Awards Program, https://www.nserc-crsng.gc.ca/Students-Etudiants/UG-PC/USRA-BRPC_eng.asp

[ii] 4% of global knowledge, https://www.tradecommissioner.gc.ca/innovators-innovateurs/strategies.aspx?lang=eng

[iii] Catalyst grants and Collaboration grants, https://www.nserc-crsng.gc.ca/innovate-innover/AllianceInternational-AllianceInternational/index_eng.asp

[iv] Tri-agency Equity, Diversity and Inclusion (EDI) Action Plan, https://www.nserc-CRSNG.gc.ca/NSERC-CRSNG/EDI-EDI/Action-Plan_Plan-dAction_eng.asp

[v] comprehensive guide, https://www.nserc-crsng.gc.ca/NSERC-CRSNG/Policies-Politiques/EDI_guidance-Conseils_EDI_eng.asp

[vi] Guidelines on Assessment of Contributions to Research, Training and Mentoring, https://www.nserc-crsng.gc.ca/NSERC-CRSNG/Policies-Politiques/assessment_of_contributions-evaluation_des_contributions_eng.asp

[vii] Declaration on Research Assessment (DORA), https://sfdora.org/

[viii] Dimensions pilot program is administered by NSERC, https://www.nserc-crsng.gc.ca/NSERC-CRSNG/EDI-EDI/Dimensions-Program_Programme-Dimensions_eng.asp

[ix] Dimensions Charter, https://www.nserc-crsng.gc.ca/NSERC-CRSNG/EDI-EDI/Dimensions-Charter_Dimensions-Charte_eng.asp

[x] Discovery Launch Supplements, https://www.nserc-crsng.gc.ca/Professors-Professeurs/Grants-Subs/Dis-Sup_eng.asp

[xi] Tri-Agency Interdisciplinary Peer Review, https://cihr-irsc.gc.ca/e/52470.html

[xii] Discovery Horizons pilot, https://www.nserc-crsng.gc.ca/Professors-Professeurs/Grants-Subs/DH-HD_eng.asp

[xiii] Belmont Forum, https://www.nserc-crsng.gc.ca/professors-professeurs/grants-subs/belmont-belmont_eng.asp

[xiv] Human Frontier Science Program, https://www.hfsp.org/funding/hfsp-funding/postdoctoral-fellowships

[xv] Donna Strickland Prize, https://www.nserc-crsng.gc.ca/Prizes-Prix/Strickland-Strickland/About-Apropos_eng.asp

[xvi] Undergraduate Student Research Awards, https://www.nserc-crsng.gc.ca/students-etudiants/ug-pc/usra-brpc_eng.asp

[xvii] Collaborative Research and Training Experience, https://www.nserc-crsng.gc.ca/professors-professeurs/grants-subs/create-foncer_eng.asp

[xviii] Healthy Cities Research Training Platform, https://www.sshrc-crsh.gc.ca/news_room-salle_de_presse/latest_news-nouvelles_recentes/2019/healthy_cities-villes_en_sante-eng.aspx

[xix] PromoScience, http://www.nserc-crsng.gc.ca/Promoter-Promotion/PromoScience-PromoScience/About-Apropos_eng.asp

[xx] Encouraging Vaccine Confidence in Canada, https://www.nserc-crsng.gc.ca/Promoter-Promotion/VaccineConfidence_eng.asp

[xxi] Chairs for Women in Science and Engineering, https://www.nserc-crsng.gc.ca/Professors-Professeurs/CFS-PCP/CWSE-CFSG_eng.asp

[xxii]Science Odyssey, http://www.sciod.ca/about/

[xxiii] Indigenous Leadership Circle, https://indigenouslc.com/

[xxiv] Alliance, https://www.nserc-crsng.gc.ca/innovate-innover/alliance-alliance/funding-financement_eng.asp

[xxv] Alliance Missions grants, https://www.nserc-crsng.gc.ca/Innovate-Innover/AllianceMissions-MissionsAlliance/index_eng.asp

[xxvi] Fonds de recherche du Québec Nature et technologies, https://frq.gouv.qc.ca/en/

[xxvii] College and Community Innovation (CCI), https://www.nserc-crsng.gc.ca/Colleges-Colleges/index_eng.asp

[xxviii] Applied Research and Technology Partnership, https://www.nserc-crsng.gc.ca/Innovate-Innover/ARTP-PRAT_eng.asp

[xxix] Mobilize grants, https://www.nserc-crsng.gc.ca/Professors-Professeurs/RPP-PP/mobilize-mobilisation/index_eng.asp

[xxx] Community and College Social Innovation Fund, https://www.nserc-crsng.gc.ca/Professors-Professeurs/RPP-PP/CCSIF-ICC_eng.asp

[xxxi] Idea to Innovation, https://www.nserc-crsng.gc.ca/Professors-Professeurs/RPP-PP/I2I-Innov_eng.asp

[xxxii] Lab2Market, https://lab2market.ca/programs/future-programs/

[xxxiii] Networks of Centres of Excellence, https://nce-rce.gc.ca/Index_eng.asp

[xxxiv] New Frontiers in Research Fund, https://www.sshrc-crsh.gc.ca/funding-financement/nfrf-fnfr/index-eng.aspx

xxxv Centres of Excellence for Commercialization and Research, https://www.nce-rce.gc.ca/Programs-Programmes/CECR-CECR/Index_eng.asp

xxxvi Business-led Networks of Centres of Excellence, http://www.nce-rce.gc.ca/Programs-Programmes/BLNCE-RCEE/Index_eng.asp

xxxvii Discovery Horizons pilot, https://www.nserc-crsng.gc.ca/Professors-Professeurs/Grants-Subs/DH-HD_eng.asp

xxxviii Tri-agency Grants Management Solution, Tri-agency grants management solution (TGMS) initiative - Science.gc.ca

xxxix GCworkplace, https://www.tpsgc-pwgsc.gc.ca/biens-property/mt-wp/mt-wp-eng.html

xl. GC InfoBase, https://www.tbs-sct.gc.ca/ems-sgd/edb-bdd/index-eng.html#start

xli. GC InfoBase, https://www.tbs-sct.gc.ca/ems-sgd/edb-bdd/index-eng.html#start

xlii. GC InfoBase, https://www.tbs-sct.gc.ca/ems-sgd/edb-bdd/index-eng.html#start

xliii. Public Accounts of Canada, http://www.tpsgc-pwgsc.gc.ca/recgen/cpc-pac/index-eng.html

xliv. GC InfoBase, https://www.tbs-sct.gc.ca/ems-sgd/edb-bdd/index-eng.html#start

xlv NSERC's Website, https://www.nserc-crsng.gc.ca/NSERC-CRSNG/Reports-Rapports/plans-plans_eng.asp

xlvi Future-Oriented Statement of Operations, https://www.nserc-crsng.gc.ca/NSERC-CRSNG/Reports-Rapports/DP/2021-2022/docs/2021-22FOSO_e.pdf

xlvii Future-Oriented Statement of Operations and Notes 2021–22, https://www.nserc-crsng.gc.ca/NSERC-CRSNG/Reports-Rapports/DP/2021-2022/docs/2021-22FOSO_e.pdf

xlviii Natural Sciences and Engineering Research Council Act, https://laws.justice.gc.ca/eng/acts/N-21/

xlix NSERC's Website, https://www.nserc-crsng.gc.ca/NSERC-CRSNG/Reports-Rapports/plans-plans_eng.asp

l Minister's mandate letter, https://pm.gc.ca/en/mandate-letters/2021/12/16/minister-innovation-science-and-industry-mandate-letter

li NSERC's website, https://www.nserc-crsng.gc.ca/NSERC-CRSNG/Reports-Rapports/plans-plans_eng.asp

lii. GC InfoBase, https://www.tbs-sct.gc.ca/ems-sgd/edb-bdd/index-eng.html#start

liii. Report on Federal Tax Expenditures, https://www.canada.ca/en/department-finance/services/publications/federal-tax-expenditures.html