



NSERC'S NEW RESEARCH PARTNERSHIPS PROGRAM



Natural Sciences and Engineering
Research Council of Canada

Conseil de recherches en sciences
naturelles et en génie du Canada

Canada

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DRAFT FOR DISCUSSION

This is a living document; new versions will be generated to reflect discussions with partners.

Budget 2018 has made significant investments in NSERC to support knowledge discovery. In addition, the Federal Government committed to simplify the landscape of federal grants in support of research and innovation to further accelerate the application of knowledge. Budget 2018 proposed that Engage Grants (including Engage Plus Grants), Industrial Research Chairs, Connect Grants, Strategic Partnership Grants for Networks and Projects, Experience Awards, and the existing Collaborative Research and Development Grants be consolidated into a single grant program.

NSERC will lead in this effort by modernizing, simplifying and improving its Research Partnerships (RP) programs in consultation with its community.

NSERC wishes to consult the Canadian research community on four key elements of the Research Partnerships Program:

The new Program would incentivize multi-sectoral partnerships that aim to accelerate the mobilization of research results, therefore increasing the potential impact of research investments for the benefit of Canada.

The new Program would recognize some non-profit organizations as partners in R&D projects and would consider their contributions in project cost-sharing.

The new Program would support partnerships involving Canadian research organizations and other regional, national, or international initiatives through a limited number of joint targeted calls.

The new Program would include, in its adjudication process, an assessment of the value-added of the partnership and of the proposed strategy for using, applying and/or translating the research results for generating benefits for Canada.

NSERC welcomes all comments, which can be sent to rpr@nserc-crsng.gc.ca

1. Canadian context

Research generates new knowledge that allows Canada to address complex challenges, to generate economic benefits, to contribute to Canada's long-term competitiveness, and to support decision-making. Canada is a world-leader in the generation of knowledge and ideas. We rank ninth out of 34 Organization for Economic Co-operation and Development (OECD) countries for the number of top-cited publications. Yet Canada needs to continue to improve in transforming those ideas into impacts.

Knowledge generation has become increasingly distributed across organizations and internationally. Industry and decision makers must access expertise across this distributed system. This requires innovative collaboration models based on partnerships amongst all required players.

The Government of Canada recently carried out a review of 93 Federal research and innovation programs. The review led to Budget 2018 directing that the number of federal funding programs be reduced by up to two thirds. NSERC has been asked to consolidate six of its partnership programs (Collaborative Research and Development Grants, Connect Grants, Engage Grants, Experience Awards, Industrial Research Chairs, and Strategic Partnership Grants for Networks and Projects) into a single program. The Budget provided further instruction to simplify, modernize and improve the single program while maintaining overall budgets.

In creating this new program, NSERC's goals are to:

- leverage the generation of new knowledge,
- accelerate the application / translation of knowledge,
- generate benefits across a broader range of sectors for Canada, and
- increase its responsiveness by streamlining business processes, by simplifying and modernizing the user experience and by reducing the time to make funding decisions.

2. NSERC's role in adding value to discovery research

NSERC Research Partnership (RP) grants have a successful track record of engaging with Canadian industry. In 2017, over 3,500 companies participated in NSERC-supported projects and invested over \$250M in cash and non-monetary contributions. These projects supported the training of over 11,000 students (full-time equivalent) and increased technology readiness levels (TRL) by an average of two.

The current programs support the training of students directly in industry (Experience Awards), building of connections with industry partners (Connect Grants), launching a new research collaboration with an industrial partner (Engage Grants), creating mutually beneficial collaborations between Canadian universities and partners from all sectors

(Collaborative Research and Development Grants and Industrial Research Chairs), and increasing research and training in targeted areas (Strategic Partnership Grants).

2.1 Increasing the connectivity in the Canadian eco-system

Multi-sectoral partnerships (sectors defined as public, private and private non-profit (PNP)) generate opportunities that accelerate the transition and application of research results by leveraging diverse perspectives and skillsets to generate solutions and outcomes. NSERC's existing research partnerships programs need to better support multi-sectoral partnerships. As an example, NSERC's Engage program currently does not allow for multiple partners.

The new Research Partnerships Program would increase the likelihood that research results are used to generate benefits for Canada by encouraging greater collaboration in the R&D system.

The new Program would incentivize multi-sectoral partnerships that aim to accelerate the mobilization of research results, therefore increasing the potential impact of research investments for the benefit of Canada.

2.2 Enriching research partnerships

Over the last 10 years, the largest increase in funding for higher education R&D has been from the non-profit sector (41% increase 2007-2017). Private non-profit (PNPs) organizations spend more on higher education R&D than the business sector ([Statistics Canada Table 27-10-0273-01](#)). They can also create impact from research results used for decision making. In recent years, NSERC's partnership programs have for the most part leveraged industry contributions.

The new Program would recognize some non-profit organizations as partners in R&D projects and would consider their contributions in project cost-sharing..

2.3 Connecting academic research with partners using joint calls

Canada needs to continue to collaborate with other countries as approximately 96% of articles in scholarly journals are produced outside Canada. Partnerships with expertise residing in other countries can generate benefits for Canada.

At the national level, the Federal Government research capacity now represents less than 6% of the national total (https://stats.oecd.org/Index.aspx?DataSetCode=GERD_TOE).

Partnerships between academic researchers and Federal Government departments can

accelerate the generation, access, and application of knowledge to enhance impact at the national or sectoral levels.

NSERC has offered joint initiatives with other federal and provincial agencies (such as the Department of Fisheries and Oceans and the Ontario Centres of Excellence) providing a single point of entry for participants seeking support from complementary programs.

The new RP Program would allow for joint funding opportunities between NSERC and other Government funding agencies and other governments internationally to bring together researchers from different organizations and support projects based on shared funding opportunities issued as joint calls.

The new Program would support partnerships involving Canadian research organizations and other regional, national, or international initiatives through a limited number of joint targeted calls.

2.4 Emphasizing the value-added of partnerships

Proposals to the new RP Program would need to demonstrate the value-added aspect of the partnership by addressing how knowledge utilization will be accelerated. This may, for example, include strategies for mobilizing the knowledge, and/or incorporating partners whose mission or mandate is to utilize the knowledge.

The new Program would offer Canadian researchers, industry, entrepreneurs, and non-profit organizations a single point of entry to rapidly develop and grow research partnerships. It would support partnerships that perform research with emphasis on outcomes as well as training research talent in a multi-partner environment.

The new Program would include, in its adjudication process, an assessment of the value-added of the partnership and of the proposed strategy for using, applying and/or translating the research results for generating benefits for Canada.

2.5 Simplifying programs and processes

The consolidation of the current six programs into one would reduce complexity for the user community seeking support for their partnered research projects.

Reducing decision times for submitted proposals is important for all parties involved in an application. This driver must be reconciled with the use of peer review of the proposal's merit whilst also reducing the burden on the community providing these assessments.

A single program would also offer an opportunity to scale up projects that are able to grow in terms of their potential impact based on recent past performance and the increased engagement of partners.

3. Proposed new program parameters

The new Research Partnerships program would support research projects led by strong and complementary collaborative teams with goals and plans to mobilize the research results for the benefit to Canada.

3.1 Participating partners

NSERC would support projects that involve all the partners required to achieve research outputs *and* to successfully mobilize research results to achieve impact.

Partners could be from the private, public and/or non-profit sectors and each should have a clearly defined role in the proposed project. At least one of the participating organizations would be required to demonstrate receptor capacity to use the project results, while others may be involved in knowledge generation and mobilization efforts. The relevance and role of each partner would need to be clearly stated in the proposal. The profile of partner organizations is described in Appendix A.

3.2 Activities and eligible expenses

NSERC would support projects of at least \$20,000 (therefore a minimum NSERC contribution of \$10,000) to a maximum NSERC contribution of \$1M per year. Projects would be able to have a duration of up to five years. Funding would allow the following activities:

- Research: to fund the direct costs of specific research projects, as well as knowledge and technology transfer relating to these projects.
- Research Training: to support eligible students and fellows to perform research and training activities related to the research partnership.
- Knowledge mobilization: to support collaborative research and knowledge mobilization, limited to costs attributable to specific projects/activities.
- Connection: Partnership development activities to grow the research partnership and to mobilize the results.

Eligible expenses are described at http://www.nserc-crsng.gc.ca/Professors-Professeurs/FinancialAdminGuide-GuideAdminFinancier/FundsUse-UtilisationSubventions_eng.asp.

Salaries and the actual cost of related federal, provincial and institutional non-discretionary benefits for work performed by research personnel that contributes towards the direct cost of research for which the funds were awarded, in accordance with institutional policies would be eligible. Non-eligible salary expenses are any form of compensation to applicants, co-applicants and collaborators of the grant regardless of their eligibility to apply for grants.

3.3 NSERC's contribution to research partnership project costs

In order to increase the likelihood that research results are used to generate benefits for Canada, and to increase the impacts of the knowledge generated through research, the new RP Program would offer increased support for proposals that involve value chains of private sector organizations (see Appendix B). Increased support would also be offered for proposals that involve small and medium enterprises (SMEs), since SMEs face significant hurdles (Statistics Canada, May 2018) while also being a significant employer of talent in Canada.

NSERC would provide a greater share of project costs when several sectors (private, public and/or nonprofit) are part of the partnership as there is an increased probability that research results will be used or applied to generate benefits for Canada.

3.4 Increasing the connectivity of the Canadian R&D system

NSERC is the national conduit for accessing the academic expertise in the natural sciences and engineering in Canada, a large proportion of which is already reviewed and supported by NSERC.

As a national research funding agency, NSERC is a strategic partner for industry as well as with other research funding agencies and with federal, provincial and territorial government departments. Through NSERC, these other parties are able maximize the impact of their investments in research by enhancing collaboration between the academic community and with industry partners and other researchers. Such partnerships leverage expertise in the academic sector to complement and strengthen other non-academic research capabilities.

Joint funding calls with other government entities are an example of how these objectives can be achieved. Funding of a limited number of targeted calls for proposals with Government departments, national, and international partners could be matched by NSERC at a maximum of 50% of envelope for the call for proposals.

3.5 Evaluation criteria

The evaluation criteria used to assess proposals would include the relevance and anticipated outcomes of the proposed research, the strength and potential for impact of the

partnership, the calibre of the proposal, and the opportunities for enriched training experiences. The partnership criterion, in particular, has been designed to favor projects with a strong likelihood that the research results will be used and lead to impact for the partners and for Canada. Emphasis is also being placed on equity, diversity and inclusion. The proposed evaluation criteria are in Appendix C.

3.6 Process simplification and modernization

NSERC would increase its responsiveness by streamlining business processes to simplify and modernize the user experience for applicants and partner organizations. The program would accept proposals at any time in order to respond to partner timelines. Current processing times for the current programs vary from a few weeks for the Engage and Experience programs, up to over one year for networks in the Strategic Grants program. By using a risk-based review (see below), NSERC would reduce the time to reach funding decisions. The new program service standards would aim to provide a funding decision within four weeks for low risk projects, while the review of higher risk projects would aim at a decision within 12-16 weeks.

3.7 Assessment processes

Employing a risk-based approach to merit review would extend adjudication best practices already employed by NSERC, recognizing risk as a function of project complexity and financial resources requested. NSERC would adopt a risk-based review to allow for reduced burden and delays for the user community. Low-risk projects would be evaluated by NSERC, in some cases leveraging pre-existing assessments based on external reviews. As the risk profile and the materiality of the project increases, NSERC would seek external expertise. Project threshold levels that would trigger different assessment mechanisms are described in Appendix D.

3.8 Scalability

NSERC would support the growth of a project as the research partnership progresses and evolves. Currently, only some of NSERC's RP programs offer a one-year extension with possible additional funds at the same level as the original yearly amount. Expansion of the project typically requires a new application and review process; but from the client's perspective, the "new" project is often a continuation that builds on the initial effort.

To support partnership scale-up, NSERC would consider simplified requests for increased funding or additional years of funding, with corresponding financial support from partners. To encourage wider benefits, incorporating new partners may change the calculation of NSERC's contribution.

As the progress of the collaboration would be assessed by NSERC before awarding additional funds, requests would be considered after the first year of a project. The maximum duration of a project would be five years to ensure fairness between new partnership projects and those developed as the result of a previous partnership, to assure ongoing funding is based on planned impacts rather than funding history.

3.9 First-time applicants to Partnerships

NSERC is proposing to provide support to assist new-to-research partnerships (RP) researchers in starting their first partnered research collaboration. “New-to-RP” can be defined as first-time partnership applicants who have never received NSERC Research Partnership funding as principal investigator or as a co-applicant in a team of three or fewer applicants.

Awards would be up to \$30,000 (one installment, with no cash required from the partner(s)). The grant would be able to support direct research or research-related costs for a collaboration with research partner(s) as well as partnership development costs (travel and planning meetings/workshops). Researchers would have access to one such award, which can be applied for at any point in their research career. Building on the success of this initial partnership, researchers could then apply with the same, or new partners, for a Research Partnership program grant of a higher amount, and longer duration. This component is described in Appendix E.

3.10 Transition to the new Program

NSERC is continuing to accept applications and grant awards within its current suite of Research Partnerships programs (Collaborative Research and Development Grants, Connect Grants, Engage Grants, Experience Awards, Industrial Research Chairs, and Strategic Partnership Grants for Networks and Projects) as the new Program is being developed. The transition strategy from current programs to the new Program will be determined after NSERC has engaged the community on the new Research Partnerships Program.

APPENDIX A: Profile of Partner and Collaborating Organizations

Partners may originate from the private, the public and nonprofit sector. Partners would need to:

- have an active role in the project’s research activities; and/or
- be able to utilize research results and achieve impact on outcomes; and/or
- take an active role in knowledge mobilization to ensure that the results of the research generate impact and
- make cash contributions.

Cash contributions from partner organizations would be considered for the purpose of calculating NSERC’s contribution toward project costs. Examples of eligible organizations are found in Table A. Other organizations would be considered collaborating organizations and their contributions would not be included in the calculation of NSERC’s contribution (see Table B).

The role of each partner would need to be clearly defined and their inclusion in the project justified. At least one of the participating organizations in a project would be required to demonstrate sufficient capacity to mobilize the knowledge generated from the research results. The identification of contributions from collaborating (non-eligible) organizations is to be encouraged in the application if their participation would extend or accelerate the achievement of the project objectives.

Table A – Examples of partner organizations whose financial contributions would be considered for the calculation of NSERC’s contribution.

Private	<ul style="list-style-type: none">• Canadian private companies• Multinationals with presence in Canada• Foreign companies (but not as a sole partner)
Public	<ul style="list-style-type: none">• Municipalities and local or regional governments established by or under provincial or territorial statute• Provincial/Territorial Government Departments (excluding funding agencies)• Federal Government Departments (excluding funding agencies)• Indigenous communities including First Nations, Inuit, and Métis communities• Public Utilities• Crown Corporations
Non-profit	<ul style="list-style-type: none">• Producer Groups• Industrial associations• Museums and libraries• Indigenous groups• Community groups

Table B – Examples of organizations considered collaborating organizations (not used in the calculation of NSERC’s contribution).

Private	<ul style="list-style-type: none"> • Venture capital / Angel investors/ Seed funds • Holding companies • Sole proprietor businesses
Public	<ul style="list-style-type: none"> • Organizations whose primary mission is to fund R&D • Foreign governments
Non-profit	<ul style="list-style-type: none"> • Non-profit organizations whose primary mission is to fund R&D and are funded or controlled primarily by government • Universities • Incubators/accelerators • Non-incorporated non-profits • Foreign non-profits • Registered charities • Hospitals and medical/clinical research institutes

APPENDIX B: NSERC's contribution to research partnership project costs

NSERC's contribution to research partnership project costs

With large organizations (> 500 employees)	50%
With small and medium organizations or Value-chains partners and multi-sectoral partnerships*	60%

() "Sectors" refer to private, non-profit, and public (government) organizations.*

Monetary contributions from the eligible partners would be considered in cost sharing calculations. Non-monetary contributions towards the success of the project would be considered as part of the proposal assessment but would not be included when determining NSERC's contribution to project costs.

For reference: The previous generation of Partnership programs offered 2:1 (NSERC : industry) matching contributions for the CRD program (equivalent to 66% of project costs). IRC grants covered 50% of project costs but included support for Chair holder salaries. Strategic grants covered 100% of project costs and non-monetary contributions were expected.

APPENDIX C: Evaluation Criteria

1. Relevance and Outcomes

- 1.1. Economic, social and/or environmental importance of the topic to Canada.
- 1.2. The need for original research to address the topic.
- 1.3. Significance of the intended outcome(s) and longer-term impacts; extent to which the strategy of the partner(s) to progress the translation and practical application of the research results is likely to achieve the intended outcomes.

2. Partnership

- 2.1. Appropriateness of the partnership to achieve the intended outcomes; leveraging of different types of organizations and interdisciplinarity in the project as appropriate.
- 2.2. Clarity of each partner's role in the collaboration with respect to defining the research problem, co-designing and implementing the research program and using the research results to achieve the desired outcomes.
- 2.3. Appropriateness of the level of cash and non-monetary contributions from each partner.

3. Calibre of the Proposal

- 3.1. Clarity of the objectives and deliverables; appropriateness of the scope and size of planned activities to achieve the expected outcome(s); potential for generating new scientific knowledge; justification for the planned expenditures.
- 3.2. Suitability of the proposed research and related activities to address the topic and to achieve the objectives; relationship to the state of the art; feasibility; appropriateness of the identified indicators and methods for monitoring progress during the project and for assessing outcomes afterwards.
- 3.3. Appropriateness of the team expertise (academic and partner(s)) to carry out the planned activities; leadership capabilities of the principal investigator to manage the project.
- 3.4. Consideration of sex, gender and diversity in the research design as appropriate.

4. Training

- 4.1. The project and the partnership offer opportunities for enriched training experiences for research trainees (undergraduates, graduates, postdoctoral fellows) to develop relevant skills as well as horizontal skill such as leadership, communication, collaboration, entrepreneurship, etc.
- 4.2. Consideration of diversity and gender equity in the training plan are described.

APPENDIX D: Project threshold levels for different assessment contexts

	Low	Medium	High
Approximate thresholds	Average annual request from NSERC up to \$30K with existing peer review evidence for a duration of 1-3 years	Average annual request \$30K to \$300K for 1-5 years	Average annual request greater than \$300K
Review mechanism	NSERC managers	External referees with expertise related to the proposal	<i>Ad hoc</i> committee members with expertise related to the proposal
Assessment tools	Assessment of the relevance and partnerships criteria. Scientific merit and training criteria waived based on existing peer review evidence (e.g. Discovery Grant rating, prior Partnership grants, ...)	External referees provide review based on all selection criteria	<i>Ad hoc</i> committee members provide review based on all selection criteria
Funding decisions	NSERC	NSERC based on referee input	NSERC based on committee input
Anticipated decision time	4 weeks	8-12 weeks	12-16 weeks

APPENDIX E: First-time applicants to Research Partnership

NSERC would support researchers who want to build their first experience with partnered research. The objective is to grow the number of researchers active in partnered research collaboration. New to partnered research would be defined as a first-time RP awardee. The applicant would not have been granted a principal investigator or small team (principal investigator and up to two co-applicants) RP grant from NSERC (with the exception of Connect Grants). As this is meant to support the building of a first partnership, researchers would have access to one such award which can be applied for at any point in their research career.

Features

- NSERC would provide flexibility in supporting a variety of activities that can help in building research connections and partnerships, including :
 - partnership development activities such as travel and meetings to secure partners, expand the partnership and/or to develop follow-on application(s) to the RP grant;
 - direct research or research-related costs for a collaboration between an applicant and the partner(s) (e.g. private, public and nonprofit organizations).
- NSERC would provide a maximum of \$30,000 in one installment and would not require monetary contributions from partners.

Review and Adjudication

- Applications would be reviewed by NSERC. Decision time is expected to be within 4 weeks upon receipt of a complete application.
- Applicants would be required to describe their general research partnership plan (e.g., intended R&D partners, how the partners plan to collaborate on the R&D project, objectives of the intended R&D project, anticipated budget outline, anticipated project outcomes).
- Applications would not require a detailed methodology.