**Summary of Proposal**

*A limit of 3,000 characters is allowed in the text box.*

*Provide a summary of the proposal in language that the public can understand.*

*Using simple terms, briefly describe the nature of the work to be done. Indicate why and to whom the research is important, the anticipated outcomes and the benefits to the research field and to Canada.*

*This plain language summary will be available to the public if your proposal is funded.*

*If you wish, you may also provide a summary in the other official language in the text box for that purpose.*

**Budget Justification**

*(Limit of two pages)*

**Salaries and benefits**

*Give the names (if known), categories of employment and proposed salaries (with explicit indication of the non-discretionary benefits) of students, postdoctoral fellows, and research staff. Briefly describe the responsibilities for each position and indicate the percentage of time they will be spending on this project over its life span. Do not include salaries of faculty in project costs.*

*Refer to the NSERC CCV instructions (http://www.nserc-crsng.gc.ca/ResearchPortal-PortailDeRecherche/Instructions-Instructions/index\_eng.asp) for information on obtaining consent to name individuals in your proposal.*

**Equipment or facility**

*Give a breakdown of the items requested, models, manufacturers, prices, and applicable taxes.*

*Justify each item requested.*

***Note:*** *While the Research Tools and Instruments Grants Program provides the primary avenue to obtain support for tools and instruments costing more than $7,000, equipment of any value can be purchased using a Discovery Grant.*

*Fees to be paid for the use of equipment or a facility should be described (e.g., hours and rate).*

*Also report the need for beam time or other special facilities, and if time has been allocated for these.*

**Materials and supplies**

*Provide details of the budget requested for materials and supplies and explain major items.*

**Travel**

*Explain briefly how each travel activity relates to the proposed research.*

**Dissemination**

*Provide details of publication costs, user workshops, or other activities.*

**Other expenses**

*List all items not relevant to previous categories and provide a brief explanation for major items.*

**Relationship to Other Research Support**

*A limit of 12,000 characters is allowed in the text box.*

*Refer to *[*Selecting the Appropriate Federal Granting Agency*](http://www.science.gc.ca/default.asp?lang=En&n=FEE7261A-1)*for additional information.*

*This section refers only to other research support that will or may be active within the funding period of the proposed Discovery Grant. Do not include information concerning previous applications or grants that ended or will end before the funding period of the proposed Discovery Grant.*

***Support from the Canadian Institutes of Health Research (CIHR) and/or the Social Sciences and Humanities Research Council (SSHRC)***

*Discovery Grants support research programs that are distinct from research that is supported or applied for through CIHR and/or SSHRC.*

*When research funding is held or applied for from CIHR and/or SSHRC, you must clearly explain:*

* *how the proposed ideas, objectives and expenditures of the Discovery Grant application are entirely distinct from those supported or applied for through CIHR and/or SSHRC.*
* *how the anticipated contributions to research resulting from the proposed Discovery Grant will be distinct from those resulting from CIHR and/or SSHRC support.*

*In addition, if you hold or have applied for a CIHR *[*Foundation Grant*](http://www.cihr-irsc.gc.ca/e/49798.html)*, you must clearly explain why the Discovery Grant funds are essential to carry out the research proposed in the Discovery Grant application.*

*Explanations of other research support (held or applied for) are considered in the evaluation of the Merit of the Proposal. You must therefore provide sufficient information for the Evaluation Group to determine whether the application meets the requirements listed above. Failure to clearly demonstrate that the Discovery Grant application meets all these requirements will result in a rating of Insufficient for the Merit of the Proposal criterion.*

***Sources of research support other than CIHR or SSHRC***

*Applicants may hold funds from other sources for the same research ideas/objectives,****as long as they are used to cover different expenses and the funding sources are not CIHR and/or SSHRC****. Other sources of research support include grants and contributions (held or applied for) from federal and provincial funding agencies, non-governmental organizations, private sector companies, universities (e.g., institution start-up funds), primary places of employment (for adjunct professors employed outside of academia), and others.*

*You must clearly demonstrate that the funds requested from the Discovery Grant program will be for expenses that are distinct from those covered by support from other sources. For funding applied for, you must demonstrate that there will be no duplication of funding for the same expense(s) by explaining how funds will be used if all applications are successful. Failure to meet these requirements will result in a rating of Insufficient for the Merit of the Proposal or the application may be rejected.*

**Highly qualified personnel (HQP) training plan**

*A maximum of 9,000 characters is allowed in the text box.*

*The assessment of the HQP training plan includes two components, the Training philosophy**and**the Research training plan.*

**Training philosophy**

*The Training philosophy should describe your approach to training HQP, detailing the mentoring approach and the type of research training and development opportunities provided.*

*Describe qualitatively any challenges or barriers encountered in ensuring an inclusive research and training environment.*

*Describe the planned approach to promoting participation from a diverse group of HQP, taking into account equity and inclusion in recruitment practices, mentorship approaches and initiatives aimed at ensuring an inclusive research and training environment and trainee growth.*

*Applicants are expected to increase the inclusion and advancement of underrepresented groups in the natural sciences and engineering as one way to enhance excellence in research and training. An inclusive research training environment exists where all people are respected and have access to the same opportunities, and where each individual—including those from underrepresented groups—can reach their full potential, unimpeded by inequitable practices. A commitment from all researchers to implement specific actions that acknowledge and address barriers to participation (e.g. physical, procedural, visible, invisible, unintentional) is required to increase access to the largest pool of qualified potential participants and the overall excellence of research, across all natural sciences and engineering disciplines.*

*For more information on equitable, diverse and inclusive research and training environments, refer to NSERC’s *[*Guide for applicants: Considering equity, diversity and inclusion in your application*](https://www.nserc-crsng.gc.ca/_doc/EDI/Guide_for_Applicants_EN.pdf)*(questions 1 to 4) and New Frontiers in Research Funds’ (NFRF ’s) *[*Best practices in equity, diversity and inclusion in research*](https://www.sshrc-crsh.gc.ca/funding-financement/nfrf-fnfr/edi-eng.aspx)*.*

*For more information on equitable and inclusive recruitment practices, refer to the Canada Research Chairs’ (CRC’s) *[*Equity, diversity and inclusion: A best practices guide for recruitment, hiring and retention*](https://www.chairs-chaires.gc.ca/program-programme/equity-equite/best_practices-pratiques_examplaires-eng.aspx)*and NFRF’s *[*Best practices in equity, diversity and inclusion in research*](https://www.sshrc-crsh.gc.ca/funding-financement/nfrf-fnfr/edi-eng.aspx)*.*

*For additional context refer to the *[*FAQ on the evaluation of the HQP criterion*](https://www.nserc-crsng.gc.ca/_doc/Professors-Professeurs/FAQ_Evaluation_HQP_eng.pdf)*.*

**Research training plan**

*The Research training plan should outline how the research program and its anticipated projects are appropriate for HQP training in natural sciences and engineering. Discuss the involvement of trainees in individual projects. Provide details on the planned contributions to training in a co-supervisory or collaborative context, if appropriate. Explain the planned future contributions to knowledge, and the expected training value of the proposed projects. Provide justification if limited training plans are provided.*

*As part of an ongoing commitment to ensure that a wide range of contributions are considered and valued in the merit review, the new*[*Guidelines on the 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)*will support the evaluation of NSERC applications.*

**Past Contributions to HQP Training (required)**

*A maximum of 6,000 characters is allowed in the text box.*

*Discuss your most significant contributions to the training of HQP over the****last six years.****(Applicants with eligible leaves of absence may include supplemental contributions from their most recent active research period prior to the last six years for a period equivalent to the duration of the leave.) Training supported by NSERC ranges from undergraduate theses and summer projects to postdoctoral research, and includes technical and other research personnel.*

*You must clearly explain your role in any co-supervision of HQP.*

*The assessment of past contributions to HQP training focuses on the****quality and impact of training****, as demonstrated through three components. Each component should be supported by your CCV and/or application text:*

**Training environment**

*Describe the research training and development opportunities provided for HQP (e.g., science outreach and engagement, interdisciplinary research, promoting EDI in the NSE, collaborations, interaction with the private and public sectors).*

*Describe qualitatively any challenges or barriers encountered in ensuring an inclusive research and training environment.*

*Describe specific actions implemented to support equity and inclusion in recruitment practices, mentorship approaches, and initiatives aimed at ensuring an inclusive research and training environment and trainee growth (if applicable).*

***Important****: Trainee demographic data****is not requested****or required to assess impacts resulting from consideration of equity, diversity and inclusion in the research and training environment.*

*For more information on equitable, diverse and inclusive research and training environments, refer to NSERC’s *[*Guide for applicants: Considering equity, diversity and inclusion in your application*](https://www.nserc-crsng.gc.ca/_doc/EDI/Guide_for_Applicants_EN.pdf)*(questions 1 to 4) and New Frontiers in Research Fund’s (NFRF’s) *[*Best practices in equity, diversity and inclusion in research*](https://www.sshrc-crsh.gc.ca/funding-financement/nfrf-fnfr/edi-eng.aspx)*.*

*For more information on equitable and inclusive recruitment practices, refer to the Canada Research Chairs’ (CRC’s) *[*Equity, diversity and inclusion: A best practices guide for recruitment, hiring and retention*](http://www.chairs-chaires.gc.ca/program-programme/equity-equite/best_practices-pratiques_examplaires-eng.asp)*and NFRF’s *[*Best practices in equity, diversity and inclusion in research*](https://www.sshrc-crsh.gc.ca/funding-financement/nfrf-fnfr/edi-eng.aspx)*.*

*For additional context refer to the *[*FAQ on the evaluation of the HQP criterion*](https://www.nserc-crsng.gc.ca/_doc/Professors-Professeurs/FAQ_Evaluation_HQP_eng.pdf)*.*

**HQP awards and research contributions**

*Describe research contributions by HQP (e.g., publications, patents, key presentations) and highlight awards, scholarships and fellowships won by HQP.***Outcomes and skills gained by HQP**

*Describe your most significant examples of HQP outcomes, and explain how your training contributed to their success (e.g., skills and experiences gained, outcomes such as further studies or career). A successful outcome can be broadly defined as any outcome in which the HQP has an impact. This impact can be in natural sciences, engineering, or other fields, but it needs to be clear how the HQP is using the skills gained in the applicant’s research training environment.*

*Cases of HQP delays (e.g., maternity, parental, personal illness, chronic illness, mental illness, or disability associated with reduced research activity, leave taken for family-related illness, bereavement, delays related to COVID-19) that are beyond your control can be considered. A pattern of prolonged periods of study or frequent student withdrawal from programs should be explained, while providing only minimal personal information needed to explain the issue.*

*For additional context refer to the*Contributions to training and mentoring *section within NSERC’s*[*Guidelines on the 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)*.*

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**Most Significant Contributions**

*A maximum of 9,000 characters is allowed in the text box.*

*Describe****up to five****of your most significant contributions to research and/or to practical applications over the****last six years****(applicants with eligible leaves of absence may include contributions from their most recent active research period prior to the last six years for a period equivalent to the duration of the leave).  Contributions made more than six years ago that are having impact now (e.g., exploitation of patent, inclusion in a code, etc.) may be described in this section only.*

*For each contribution, describe its impact, significance to, and use by, other researchers and end users.****For collaborative contributions, describe your role****.*

*Impact can be seen as, but is not limited to, advancing knowledge, developing technology, addressing socio-economic or environmental needs, or contributing to increased equity, diversity and inclusion in research.*

*A contribution does not have to be a single publication or report. For example, a group of publications on a specific subject could be discussed as one contribution.*

***Important:***

* *Include the full reference to your contributions in this text box or provide the appropriate reference to your****NSERC CCV****.*
* *Provide dates and clearly explain the impact of any significant delays in the research activity or in the dissemination of research results (e.g., maternity, parental, personal illness, chronic illness, mental illness, or disability associated with reduced research activity, leave taken for family-related illness, bereavement, extraordinary administrative duties, delays related to COVID-19) in the NSERC CCV under the section on employment (leaves of absence/delays and their impact on research).*

**Additional Information on Contributions**

*A maximum of 3,000 characters is allowed in the text box.*

*Provide an explanation for the contributions listed in your NSERC CCV. Such details may include*

* *the nature of collaborations with other researchers*
* *the rationale or practice used for:*
	+ *the order of authors in the publications listed*
	+ *the inclusion of students in the list of authors*
* *your role in joint publications*
* *reason for selecting certain venues (journals, conferences) for publications and particular features of the venues (e.g., target audiences, review procedures)*
* *impact or potential impact of patents and technology transfer*
* *nature of industrially relevant R&D activities*
* *significance of technical reports*
* *attestation to the nature and the significance of confidential technical and internal reports*
* *original research reported in books or technical reports*

*You may include other activities or information to help committees evaluate your contributions to and impact on science and engineering, including interdisciplinary research.*

*For more information, refer to NSERC’s*[*Guidelines on the 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).

**Proposal** (5 pages)

*Limit of five pages*

*Addressing the points below, describe the proposed research to be supported. Images and graphics are included in the page limit.*

***Recent progress:*** *Describe your recent progress in research activities related to the proposal and, in addition for renewals, the progress attributable to your previous Discovery Grant.*

***Objectives:*** *Define the short- and long-term objectives of your research program. Note that a research program should have a long-term vision that expands beyond the five years of the Discovery Grant. A single, short-term project or collection of projects does not constitute a research program.*

***Literature review:*** *Discuss the literature pertinent to the proposal, placing the proposed research in the context of the state of the art.*

***Methodology:*** *Describe the methods and proposed approach, providing sufficient details to allow the reviewers to assess the feasibility of the research activities.*

*The inclusion of sex, gender and diversity considerations in research design makes research more ethically sound, rigorous and useful. Describe how these aspects will be addressed in the research design, if applicable. For more information, refer to the *[*Guide for Applicants: Considering equity, diversity and inclusion in your application*](http://www.nserc-crsng.gc.ca/_doc/EDI/Guide_for_Applicants_EN.pdf)*, questions 5 to 7.*

***Impact:*** *Explain the anticipated significance of the work.*

*Note*

* *Should it be determined that the information provided is insufficient, NSERC reserves the right to take appropriate action, such as not soliciting reports from external reviewers or withdrawing the application from the competition.*
* *If relevant to your research, consult NSERC’s*[*Guidelines for the Preparation and Review of Applications in Interdisciplinary Research*](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/Policies-Politiques/prepInterdiscip-prepInterdiscip_eng.asp)*and/or*[*Guidelines for the Preparation and Review of Applications in Engineering and the Applied Sciences*](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/Policies-Politiques/prepEngAS-prepGenSA_eng.asp)*.*
* *If NSERC determines that the subject matter is outside of its mandate at any time during the review cycle, the application will be rejected. See *[*Selecting the Appropriate Federal Granting Agency*](http://www.science.gc.ca/eic/site/063.nsf/eng/h_FEE7261A.html?OpenDocument)*for more information.*

**List of References** (2 pages)

* *Provide a list of literature references in support of your proposal.*
* *Do not refer readers to Web sites for additional information on your proposal.*
* *Do not include hyperlinks or footnotes in your list of references.*

## ****Leaves of absence (if applicable)****

*Two pages max.*

*If you have reported an eligible leave of absence or delay in your CCV, you are entitled to an attachment that must be used to list only supplemental contributions to research (list of presentations, interviews and media relations, publications, intellectual property and recognitions) and to training (list of supervisory activities) beyond the last six years, for a period equivalent to the duration of the leave or delay reported in your CCV. Supplemental contributions must be taken from the most recent active research period prior to the last six years and must be listed in the attachment along with dates (month and year).*

*If you are reporting a period of reduced research and training for an eligible reason you****must****calculate and provide the full-time equivalent duration of the delay in the CCV: the affected time period and a percentage of reduction in time devoted to regular research and training activities.*

*Eligible leaves of absence and delays (e.g., maternity and parental leave, personal illness, chronic illness, mental illness, or disability associated with reduced research activity, leave taken for family-related illness, bereavement, extraordinary administrative duties) are those taken within the last six years. This attachment may also be used to list supplemental contributions to research and to training for a period equivalent to the duration of delays related to COVID-19. For further guidance on how to describe and consider the impacts of COVID-19 delays, refer to*[*Impacts of the COVID-19 pandemic on research: NEW guidelines for NSERC’s community*](https://www.nserc-crsng.gc.ca/NSERC-CRSNG/Policies-Politiques/COVID-COVID_eng.asp)*.*

*To access the*Leaves of absence*attachment, you must answer*Yes*to the question “I entered one or more eligible leaves of absence in my Canadian Common CV for this application,” found on the Identification page of the application.*

*Examples of the use of the leaves of absence attachment:*

|  |  |
| --- | --- |
| ***Leave of absence during period of assessment*** | *For a four month leave in the last six years (i.e., between January 1, 2017, and November 1, 2023), you can list supplemental contributions to research and training in the attachment for a period of four months immediately prior to the period of assessment (i.e., between September 1, 2016, and January 1, 2017).* |
| ***Leave of absence during period of assessment and immediately prior*** | *For a four month leave in the last six years (i.e., between January 1, 2017, and November 1, 2023) where you were also on leave immediately prior to the period of assessment (e.g., you were on leave from September 1, 2016, to January 1, 2017), you should list your contributions for the four months of active research immediately prior to the earlier leave (i.e., between May 1, 2016, and September 1, 2016).* |
| ***Period of reduced research and training*** | *When reporting a loss of two-thirds of normal productivity for a year due to illness, you are entitled to list supplemental contributions in the attachment for a period of eight months immediately prior to the last six years (i.e., between May 1, 2016, and January 1, 2017).* |