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## Brain Canada Foundation

### 2022 Future Leaders in Canadian Brain Research

Request for Applications (RFA)

#### About Brain Canada Foundation

Brain Canada Foundation (Brain Canada) is a national registered charity that enables and supports excellent, innovative, paradigm-changing brain research in Canada. For more than two decades, Brain Canada has made the case for the brain as a single, complex system with commonalities across the range of neurological disorders, mental illnesses and addictions, and brain and spinal cord injuries. Looking at the brain as one system has underscored the need for increased collaboration across disciplines and institutions, and to ensure that Canada has a robust pipeline of talent to remain at the forefront in the field of brain research. Brain Canada's vision is to understand the brain in health and illness, to improve lives and achieve societal impact.

The Canada Brain Research Fund (CBRF) is an innovative arrangement between the Government of Canada, through Health Canada, and Brain Canada Foundation, designed to increase support of brain research on behalf of Canadians, and maximize the impact and efficiency of those investments. The Fund supports the very best Canadian neuroscience, fostering collaborative research and accelerating the pace of discovery, in order to improve the health and quality of life of those who suffer from brain disorders. To date, Health Canada has invested over \$145 million through the CBRF, which has been matched by Brain Canada and its donors and partners.

[www.braincanada.ca](http://www.braincanada.ca)

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## Rationale

Supported by the Canada Brain Research Fund, the purpose of the **Future Leaders in Canadian Brain Research** program is to accelerate novel and transformative research that will fundamentally change our understanding of nervous system function and dysfunction and their impact on health. The ultimate goal is to reduce the social and economic burden of neurological and mental health illnesses through prevention, early diagnosis, and treatment.

Newly trained researchers in their first independent academic position are in a strong position to formulate innovative and impactful research projects. However, at the early stages of an investigator's career, they often lack the preliminary data and resources that are required to obtain their first large operating grant. As such, promising early-career researchers are often at a disadvantage when applying to "open" funding programs, where more established researchers tend to dominate.

The Future Leaders in Canadian Brain Research program has the potential to be transformative at a time when it is well recognized that there is a significant funding gap to support and retain our brightest early-career researchers, who are well positioned to make major contributions to Canadian brain research. By providing early-career researchers with funding at a critical point in their careers, we can build Canada's pipeline of future leaders and a foundation of research excellence and innovation.

## Scope

This Program encourages innovative, unorthodox, and exploratory research that may be in the early and conceptual stages of project development but has potential for significant impact on our understanding of the brain. The data generated will enable early-career researchers to apply for larger grants that will lead to long-term projects and create innovative and sustainable research programs.

Projects should be distinct from other research projects conducted by the investigator. The research topic will focus on hypothesis-driven inquiries on the brain and nervous system, and may span the range of basic, translational, and clinical approaches, including:

- Basic research into fundamental properties and mechanisms, including functional studies based on the use of "-omics" data.
- Projects related to disease or dysfunction of the nervous system leading to new insights into fundamental biological mechanisms.
- Projects that experimentally test novel hypotheses addressing therapeutic or interventional approaches for brain disorders.
- Projects aimed at developing novel methods, if these methods allow new neuroscience questions to be answered.
- Projects, such as those using epidemiological, "-omics", or other approaches, that will generate large datasets, if hypotheses are clearly stated.

The following projects **will not** be considered for funding:

- Systematic screening approaches aimed at identifying biological components or reagents.
- Requests for operating grants will not be considered.

## Grant Details

The 2022 competition has an overall funding envelope of \$2,500,000 to support up to 25 grants of \$100,000 over two years. Grants will be named after specific donors who are contributing funding for this competition.

## Equity, Diversity and Inclusion

Evidence clearly shows that increasing equity, diversity, and inclusion (EDI) in research environments enhances excellence, innovation and creativity. Brain Canada is committed to excellence through equity and encourages applicants of diverse backgrounds to apply to our funding opportunities, which will promote the expression of diverse perspectives, approaches, and experiences, including those of underrepresented groups.

## Eligibility

- This competition is open to early-career researchers within five years of starting their first independent research position by the deadline to submit Full Applications. Leaves of absence (e.g., maternity and parental leave, sick leave) will not be included in calculating the five-year window.
- Applicants must be conducting research at an eligible Canadian institution for the entire duration of the grant, and must be considered an independent researcher at their institution. Such an individual normally holds the rank of assistant or associate professor; can initiate and direct their own independent lines of research as principal investigator; has full responsibility for running their laboratories; has full control of their research funds; and is permitted to supervise trainees (if applicable, as per their institution's policy). Postdoctoral fellows or adjunct faculty are not eligible to apply.
- Academic appointments must have started by the Full Application submission deadline.
- Applicants must be able to devote a minimum of 50% of their time to research activities.
- Research applications may be related but cannot be identical to any other currently funded projects. It is the responsibility of the applicant to notify Brain Canada immediately should substantial overlap arise from new funding awarded during the application and review process of this competition.
- Applicants must submit a Letter of Intent in order to be eligible to submit a Full Application.
- Applicants who are currently holding, or previously received, an Azrieli Foundation Early-Career Capacity Building Grant or a Future Leaders in Canadian Brain Research Grant are not eligible to apply.
- Applicants must be able to initiate the project in September 2023 when funding is expected to begin.

## Use of Funds

Funds must contribute toward the direct costs of the research project for which they were awarded and should be directly attributable to the project or activity being performed.

### Eligible Costs

These funds may be used to support any aspect of the research project, including:

- Salaries for technical personnel;
- Stipends of trainees;
- Supplies and materials;

- Maintenance of essential equipment and/or purchase of equipment that is currently unavailable but essential for the project;
- Provision of special services and user fees;
- Knowledge Mobilization, including, but not limited to, travel of the Principal Investigator and trainees for presentation of results at conferences, publication costs in peer-reviewed and open-access journals or repositories (including article processing charges), knowledge exchange activities (workshops, brochures, books), and knowledge diffusion activities via online technologies (webinars, podcasts).

#### **Ineligible Costs**

- Salaries and consulting fees of any investigator or researcher holding an independent academic appointment;
- General office and lab equipment;
- Indirect costs or overhead costs associated with managing the research project.

Please note that this list is not exhaustive, and Brain Canada must be consulted on expenses that are not listed here, so that any partners involved can determine the eligibility of other categories of expenditure.

### **Criteria for Assessment**

There will be equal weighting of the following criteria:

#### **Innovation and Originality**

Quality of the project which, while solidly based in scientific principles and technical feasibility, offers new concepts and approaches, with the potential to change the paradigms of the field, open the field to new experimental directions, or address a critical barrier to progress in our understanding of the brain and nervous system. Projects must be distinct from the investigator's other funded research.

#### **Feasibility**

The degree to which the proposed research can be successfully executed using the proposed methodology within the timeframe, budget, and resources available. Appropriate background and justification for the proposed research should be provided through literature citations and data from other sources. Preliminary data from the investigator are not required but may be included if available. The investigator's potential to successfully complete the project and to carry out innovative research based on their track record of quality training will also be considered.

#### **Potential for Impact**

The degree to which the new lines of research that could be developed from this project have the potential to fundamentally change our understanding of the brain and nervous system function in the long-term. In addition, the incorporation of sex- and gender-based analysis plus (SGBA+) and EDI principles in the design and execution of research is critically important for broadening the potential impact of the work and the potential for new knowledge to be translated into health benefits for all.

## Timeline

|  |                                   |
|--|-----------------------------------|
| Launch of Request for Applications               | December 1, 2022                  |
| <b>Deadline for Letter of Intent</b>             | <b>17:00 ET, January 16, 2023</b> |
| Invitation to Full Application                   | March 6-10, 2023                  |
| <b>Deadline for Receipt of Full Applications</b> | <b>17:00 ET, April 6, 2023</b>    |
| Notification of Decision                         | July 2023                         |
| Funding Begins                                   | September 2023                    |

## How to Apply

Please note that the *2022 Future Leaders in Canadian Brain Research* competition includes a Letter of Intent and a Full Application stage. Applicants must submit a Letter of Intent in order to be eligible to submit a Full Application. Following an administrative review by Brain Canada and external peer review, top-ranked applications will be invited to proceed to the Full Application stage.

Letters of Intent and Full Applications must be submitted using Brain Canada's electronic grant management system, SmartSimple (<https://braincanada.smartsimple.ca/s/Login.jsp>). **It is the sole responsibility of the Principal Investigator to ensure their submission adheres to the requirements and is received by the deadlines outlined above. There will be no appeal to late submissions.** Brain Canada will acknowledge receipt of the Letters of Intent and Full Applications within two business days.

## Letter of Intent

### Applicant Information

The information collected under this section will not be shared in an identifiable form with public, external stakeholders (e.g., Health Canada, funding partners) or reviewers, and will have no impact on the evaluation of submitted grant applications. All responses are completely anonymized and aggregated to ensure protection of the identity of any individual. Please see Brain Canada's [Privacy Policy](#).

### Education Details

Applicant's education history, beginning with a baccalaureate degree or other professional education, and including doctoral, postdoctoral, and residency training, as applicable.

### Project Summary

- Project title
- Keywords describing the research project (maximum 10 words)
- A summary of the proposed research project and its goals (maximum 300 words)
- A clear statement of the **original and innovative** features of the proposed research project. Describe any new concepts and approaches, the potential to change the paradigms of the field, open the field to new experimental directions, or address a critical barrier to progress in our understanding of the brain and nervous system (maximum 750 words).
- A description of the project's **feasibility** within the budget and timeframe. Provide appropriate background and justification for the proposed research, and describe the approaches, methods and techniques that will be used (maximum 750 words).
- A description of the project's **potential for impact** in advancing our understanding of the brain and nervous system, as well as the short- and long-term impacts of the research. Describe how

sex, gender, and/or other determinants of health will be taken into account in the proposed research project (maximum 750 words).

- **Certification and Signature of the Principal Investigator.** Please note that institutional signatures are not required at the Letter of Intent stage.

## Full Application

The Full Application must be formatted using 12-point Arial or Georgia font, single-spaced, on a letter-size page with 1" minimum margins. The font size for figures and legends must be a minimum of 10 points. Use of a condensed font and spacing is not permitted. Applications received in any other format, exceeding the page limits, incomplete, or late, will be rejected.

### Project Summary

- Project title
- Keywords describing the research project (maximum 10 words)
- A summary of the proposed research project and its goals, emphasizing the innovative and original features (maximum 300 words).

### Lay Summary (maximum 300 words)

- Suitable for publication and understandable by non-scientists.

### Proposal (maximum six pages, including figures and legends, excluding references)

Proposals should include the following information, structured to best address the Criteria for Assessment outlined above:

1. The **overall objectives** to be achieved by the end of the funding period.
2. The **rationale** for undertaking the study now, including:
  - The current state of research on your topic and the key knowledge gap that motivates this study
  - Clear indication of any overlap between this proposal and any other currently funded projects
3. The **work plan**, including:
  - The approaches, methods and techniques that will be used to achieve the stated objectives; if applicable, outline the specific contributions of any collaborators involved in the project
  - Methods of data analysis, including statistical methods and calculations to show that the study will be adequately powered
  - Potential pitfalls or obstacles, and how they will be overcome
4. The **expected outputs** from the study, and how findings will be disseminated, including:
  - How the outcomes from the study will advance knowledge on the properties and mechanisms of the brain and nervous system
  - Plans for making the data from the project available to other qualified researchers
  - Knowledge mobilization plan describing the intended target audiences for the findings, plans for dissemination and stakeholder engagement toward achieving research impact, and how the findings may be adapted and shared with broader knowledge users. Applicants are encouraged to visit CIHR's [Guide to Knowledge Translation Planning](#).

- The expected broad impacts of the results - refer to the six main categories of research impacts: advancing knowledge, building capacity, informing, decision-making, health impacts, and broad socioeconomic impacts.
5. The **role of trainees** in the project and the unique learning opportunities they will experience, if applicable.

### **Timeline and Anticipated Milestones**

Using the template provided, please indicate the key intermediate stages in achieving the overall objectives, and the projected timeline for achieving them.

### **Sex, Gender, and Diversity Considerations** (maximum two pages)

Throughout the research process, from conceptualization (research hypothesis development) to completion (knowledge translation), the removal of systemic barriers and biases to enact the practice of inclusion ensures that all individuals have equal access to and benefit from the results of the project.

Please describe:

- How sex and/or gender considerations will be addressed in the research project. Research projects proposing to use only one sex or gender should provide strong justification from the scientific literature or preliminary data to support this decision.
- Description of any targeted research including diverse populations, such as that based on age, Indigenous identity, visible minority identity, or disability.

Applicants are encouraged to review CIHR's [Online Training Modules for Integrating Sex and Gender in Health Research](#).

### **Institutional Approvals** (maximum one page)

Applicants will be required to provide documentation, where applicable, demonstrating institutional approvals and compliance with policies on the ethical use of human subjects, animals, and biohazards prior to funding release. As such, please outline what applicable approvals you will have in place for the Full Application deadline, and timeline for any addendums or additional approvals specific to the proposal that may need to be added thereafter.

### **Biographical Information** (maximum four pages)

Using the template provided, the biographical information should include the following in standard biosketch format:

- The average number of hours per week you will devote to the proposed research project.
- Funding history, including past and active grants. Please note that applications will not be evaluated based on the applicant's funding track record.
- Applicants are allowed to list up to 10 publications on which they are an author (do not need to be the first author) and briefly describe the five that are most relevant to their application. Any publications listed should include the DOI, URL, or PMID, where applicable, so reviewers can access them.

### **Letters of Support from Collaborators**

Applicants can submit up to two letters of support (maximum one page per letter) from project collaborators, if applicable. The letter(s) will explain the nature of the collaboration and outline the specific contributions and role of the collaborators in the proposed research project.

### **Budget**

Using the template provided, applicants must submit a yearly budget and a written budget justification (maximum one page) describing the proposed costs in each category of expenditure. Please provide sufficient information to allow reviewers to assess the suitability of the cost allocation.

### **Certification and Signatures**

All signatures must be submitted along with the application by the Full Application submission deadline

- Signature of the Principal Investigator
- Institutional Signature: Signature of the responsible official of the institution where the Principal Investigator will conduct the research.

### **Review Process**

Letters of Intent and Full Applications will be reviewed and scored by an external Peer Review Panel composed of Canadian and international members with broad experience and expertise in the relevant field(s) of brain research. Brain Canada will take into account any conflicts of interest and other relevant considerations to ensure a balanced panel.

### **Letter of Intent**

Letters of Intent submitted by the deadline will undergo an administrative check to ensure all eligibility criteria are met. Eligible LOIs will be reviewed by at least two members of the Peer Review Panel, and the top-ranked applications will be invited to submit a Full Application. All applicants will receive anonymized reviewers' comments.

### **Full Application**

Applications submitted by the deadline to apply will be reviewed by at least two members of the Peer Review Panel with expertise in the relevant field(s).

Based on the reviewer scores, the Peer Review Panel will discuss the top applications. The Panel will recommend to Brain Canada the applications that have received a high merit score.

Applicants will receive anonymized written reviewer comments. Applicants whose applications were discussed at the Peer Review Panel meeting will additionally receive Scientific Officer notes from the proceedings. Brain Canada will not entertain appeals against the assessment of the Peer Review Panel.

## Confidentiality and Ownership

Brain Canada Foundation will keep all materials submitted for this funding opportunity confidential and only share them with reviewers, Peer Review Panel members, and observers who have signed confidentiality and non-disclosure agreements.

Brain Canada does not claim ownership of intellectual property (IP) arising from the research they fund and expects that any IP arising from this funding is developed and commercialized according to the policies of the research institutions in which the research is performed.

## Communications

Recipients of a Future Leaders in Canadian Brain Research Grant must make every effort to attend events organized by Brain Canada, and present their projects, if applicable, to demonstrate the implications and importance of their research.

## Contact Information

For more information, or if you have any questions regarding the application process, please contact Brain Canada at [futureleaders@braincanada.ca](mailto:futureleaders@braincanada.ca).