

Brain Canada

2021 Future Leaders in Canadian Brain Research

Request for Applications (RFA)

About Brain Canada

Brain Canada is a national registered charity headquartered in Montreal that enables and supports excellent, innovative, paradigm-changing brain research in Canada. For 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. This will lead to a smarter way to invest in brain research that is focused on outcomes that will benefit patients and families. 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 is an innovative partnership between the Government of Canada (through Health Canada) and Brain Canada, designed to encourage Canadians to increase their support of brain research, 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 Canadians who suffer from brain disorders. Over the past 20 years, Brain Canada and its donors and partners have invested \$277 million in more than 370 research projects across the country.

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* Grants 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 problems 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. This program provides an opportunity to develop new lines of research on the properties and mechanisms of the brain and nervous system, and gather such preliminary data.

The *Future Leaders in Canadian Brain Research* Grants 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 investigators, 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

Projects should represent new lines of research and be distinct from other research projects conducted by the investigator. This competition 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 fundamental understanding of the brain. Early-career researchers are encouraged to capitalize on existing platforms and data repositories to maximize impact. The generated data will enable early-career investigators to apply for larger grants that will lead to long-term projects and create innovative and sustainable research programs.

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 genome data.
- Projects related to disease or dysfunction of the nervous system if they will lead 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, including models of neural activity, 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 2021 competition has an overall envelope of \$2,000,000 to support 20 grants of \$100,000 each, over two years. Awards will be named after specific donors who are providing 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, etc.) will not be included in calculating the five-year window. Investigators must be conducting research at a Canadian institution for the entire duration of the award, and academic appointments *must have started by the deadline for Full Application submission*.
- Researchers 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.
- 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 awards 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 have received or are currently holding an Azrieli Foundation Early Career Capacity Building Grant or a Future Leaders in Canadian Brain Research Grant are not eligible for this funding.
- Applicants must initiate the project in August 2022, when funding will start.

Use of Funds

The funds must contribute towards 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 operating costs of the research project, including:

- Supplies and materials;
- Provision of special services and user fees;
- Maintenance of essential equipment;
- End of Grant Knowledge Mobilization costs; 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), knowledge diffusion activities via online technologies (webinars, podcasts);

- Salaries for technical personnel;
- Stipends of trainees;
- New equipment that is currently unavailable but essential for the project.

Ineligible costs

- Salaries and consulting fees of the principal investigator applying for the Future Leaders grant;
- As this award is to be used for the specific project that is proposed, the purchase of general office and lab equipment are considered as ineligible expenses.
- 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 technically feasible, 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 based on their track record of quality training and to carry out innovative research 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. Brain Canada promotes the view of the brain as a single, complex system with commonalities across the range of neurological disorders. Projects must demonstrate the potential to have impact outside of the investigator's immediate area of research and include an End of Grant Knowledge Mobilization Plan. In addition, incorporation of principles of EDI 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 to all.

Timeline

Launch of Request for Applications	October 19, 2021
Deadline for Letter of Intent	16:00 EST, November 16, 2021
Invitation to Full Application	January 17-21, 2022
Deadline for Receipt of Full Applications	16:00 EST, February 16th, 2022
Notification of Decision	June 2022
Funding Begins	August 2022

How to Apply

Please note that the Future Leaders in Canadian Brain Research competition includes a Letter of Intent (LOI) and a Full Application (FA) stage. The principal investigator must complete all required application fields in SmartSimple before the deadlines noted in the Timeline.

Letter of Intent Components

Applicants must submit a Letter of Intent using Brain Canada's electronic grant management system – SmartSimple (https://braincanada.smartsimple.ca/s_Login.jsp) by **16:00 ET on November 16, 2021**.

Brain Canada staff will verify all submitted LOIs to ensure eligibility criteria are met. Eligible LOIs will be reviewed by at least two reviewers, and the top-ranked LOIs will be invited to submit a Full Application.

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 the 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, begin with baccalaureate or other initial professional education, include doctoral, postdoctoral, and residency training, if applicable.

Project Summary

- Project title
- Keywords (including freeform): up to 10 words
- A summary of the research project and its goals, emphasizing the innovative and original features (maximum 300 words).
- A description of how the proposal differs from past and/or current lines of research (maximum 300 words). Note: 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 awards during the application and review process of this competition.
- **Innovation and Originality:** a clear statement of the unique and innovative features of the proposed 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 500 words).
- A description of the project **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 500 words).

- A description of project **Potential for Impact**, the degree to which the new lines of research that could be developed from this project has the potential to fundamentally change our understanding of brain and nervous system function in the long-term. Please also describe any targeted research including diverse populations, such as that based on sex, gender, age, Indigenous identity, visible minority identity, or disability (maximum 500 words).
- **Certification and Signature of the Applicant.** Please note that institutional signatures are not required at the LOI stage.

Full Application Components

Only those invited following the LOI review are eligible to submit a Full Application. Full Applications must be submitted using Brain Canada's electronic grant management system – SmartSimple (https://braincanada.smartsimple.ca/s_Login.jsp). The principal investigator must complete all required application fields in SmartSimple before **16:00 ET on February 16, 2022**. There will be no appeal to late submissions. Brain Canada will acknowledge receipt of the Full Application within two working days.

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. **It is the sole responsibility of the applicant to ensure their submission adheres to these requirements and is received before the deadline.**

Project Summary

- Project title.
- Projected start and end dates (note: choose dates within a 24-month window).
- Keywords (including free form): up to 10 words.
- A summary of the 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 6 pages including figures and legends)

Proposals should include the following information, structured to best address the criteria for assessment (Innovation and Originality; Feasibility; Potential for Impact):

1. The **overall objectives** to be achieved by the end of the funding period.
2. The rationale for undertaking the study now, including:
 - A clear statement of the unique and innovative features of the project;
 - An explanation of how this project is different from what the principal investigator has done before;
 - Clearly indicate if there is an overlap between this proposal and any other currently funded projects.
3. The work plan, including:
 - The approaches, methods and techniques that will be used; if applicable, outline the specific contributions of any collaborators involved in the project;
 - Potential pitfalls or obstacles, and how they will be overcome;
 - Methods of data analysis, including statistical methods and calculations to show that the study will be adequately powered.
4. The expected outputs from the study, and how its findings will be disseminated:

- How will the outcomes from the study advance knowledge on the fundamental properties and mechanisms of the brain and nervous system?
 - Include plans for making the data from the project available to other qualified researchers;
 - What are 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;
 - End of Grant Knowledge Mobilization Plan; clearly describe plans for knowledge translation, exchange, diffusion and dissemination, and how the project's findings will be adapted and shared with the target audience including broader knowledge users. Applicants are encouraged to visit [CIHR End-of-Grant Knowledge Translation](#) to learn more about examples of such plans.
5. The role of trainees in the project and the unique learning opportunities they will experience, if applicable.

Timeline and Anticipated Milestones

A template will be provided. Please indicate the key intermediate stages in achieving the overall objectives, and the projected dates for the achievement.

Sex, Gender, and Diversity Considerations (maximum 2 pages)

Understanding sex, gender, sexual orientation, age, race and socioeconomic status, and other relevant identity factors as determinants of health, and how they interact with other determinants, can help to ensure that research projects lead to better outcomes and are beneficial for all people living in Canada. It is highly encouraged that applicants review the [CIHR Online Training Modules for Integrating Sex and Gender in Health Research](#).

Please provide a brief description to each enquiry below:

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

Ethical, Social and Legal Aspects (maximum 1 page)

For the Full Application, applicants will be required to provide documentation, where applicable, demonstrating approvals and compliance with national policies on the ethical use of human subjects, animals, and biohazards.

As proof of institutional approvals are required prior to funding release, please outline what applicable policies 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 after. Additionally, please address any ethical, social, and legal implications that may be raised by the application of neuroscience research findings from the research project.

Biographical Information

The CV (biosketch) should be four pages or less in length and should be submitted in standard NIH biosketch format (template will be provided).

The biographical information will include:

- Indicate the average hours per week that you will devote to this project.
- Outline of funding history including past and active grants. Please note that applications will not be scored based on the applicant funding track record.

- Applicants are allowed to list up to 10 publications on which they are author (do not need to be the first author) and briefly describe 5 that are most relevant to their application.

Any publications listed should include the DOI, URL, or PMID, where applicable, so reviewers can access them.

Letter of Support from Collaborators

Applicants are required to submit a letter of support (1 page) from the project collaborators, if applicable. The letter explains the nature of collaboration and outlines the specific contributions of the collaborator involved in the project.

Budget

- Applicants must upload a yearly budget (template will be provided) and a written budget justification describing the proposed costs in each of the major categories (maximum 1 page). Provide sufficient information to allow reviewers to assess the appropriateness of the cost allocation.
- Provide costs for major categories only:
 - Salaries for technical personnel;
 - Stipends of trainees;
 - Maintenance of essential equipment; equipment that is currently unavailable but essential for the project;
 - Supplies and materials;
 - Provision of special services and user fees, payments to subjects;
 - End of Grant Knowledge Mobilization costs 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), knowledge diffusion activities via online technologies (webinars, podcasts). The End of Grant Knowledge Mobilization cost must not exceed \$10,000 (10% of total grant).
- These grants must not be used in sub-awards.

Certification and Signatures

- Signature of the principal investigator is mandatory for the application to be considered.
- Institutional Signatures: Signature of the responsible official of the institution where the principal investigator will conduct the research is required.
- All signatures must be submitted along with the application by the deadline for Full Application.

Review Process

Letter of Intent

Eligible LOIs will be reviewed by at least two reviewers, and the top-ranked LOIs will be invited to submit a Full Application.

Reviewers will be selected by Brain Canada, taking into account conflict of interest and other considerations.

Reviewers will score based on the following criteria (with equal weighting):

1. Innovation and Originality
2. Feasibility
3. Potential for Impact

Please note that reviewer-anonymized written comments will be shared with applicants.

Full Application

Applications submitted by the deadline to apply will be reviewed and scored by at least two members of a 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 conflict of interest into consideration when assigning the reviewers. In addition, the application may be reviewed by one or two additional external reviewers depending on the nature of the research. There will be equal weighting of the application components, as described under “Assessment Criteria”.

Based on the reviewer scores, the Review Panel will discuss the top applications via virtual meetings. The Panel will recommend to Brain Canada the applications that have received a high merit score. In situation of equal scientific merits being observed amongst two or more applications, Brain Canada will consider underrepresented applicants, to be in line with the Equity, Diversity and Inclusion policy.

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

Confidentiality and Ownership

Brain Canada Foundation will keep all materials submitted for this funding opportunity confidential and only share them with reviewers, Review Panel members, and observers who have signed confidentiality and non-disclosure agreements. Funded applications will be retained for comparison of intended and actual outcomes, as part of the evaluation of the Canada Brain Research Fund.

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.

Reporting, Communications, and Evaluation

As a condition of continued annual funding of the Future Leaders in Canadian Brain Research Grants Program, Brain Canada requires regular communication with the principal investigator, and annual scientific progress and financial reports, outlining use of funds, project achievements, as well as difficulties encountered and steps taken to overcome them. Brain Canada will share the progress reports with any donors supporting the program, at their request.

- **Scientific Progress Report:** The principal investigator is required to submit an annual scientific progress report to Brain Canada no later than 30 days after the first anniversary of the project start date, and a final scientific progress report no later than 60 days after the last anniversary date of the project start date.
- **Financial Report:** The principal investigator and the Host Institution are required to provide an annual financial report no later than 60 days after the first and last anniversary of the project start date, including the following:
 - Financial statement signed by a financial administrator at the Host Institution, including a list of expenditures for the reporting period as per the categories of expense outlined in the approved budget;
 - Financial explanation completed by the principal investigator and providing justification, by category of expense, for any variance of more than 20% from the approved detailed budget. At the end of the first year of the project, if there is an unspent balance of more than 25% of

the funds available for the current year, the principal investigator must provide a forecast of expenditures for the next six (6) months with detailed explanation.

- **Post-Grant Report:** In addition, at least one year after the end of the funding period, Brain Canada requires a post-grant report detailing the outcome of the project, including results, impact of the research and its future application, new collaborations, publications, and other significant achievements.

Subsequent instalments will be contingent upon receipt of satisfactory scientific progress and financial reports. Please note that funding may be **suspended** or **terminated** following failure to produce such reports within the required timeframe. Ten percent of the final year's funding will be withheld and released upon receipt of a satisfactory final progress report that describes the current and estimated future outputs and impacts of the research project.

If a progress report lacks detail or indicates that the project is not progressing sufficiently, Brain Canada will communicate with the principal investigator to obtain more information. Brain Canada may offer the possibility for the principal investigator to apply for a no-cost extension up to 12 months that will need to be approved by Brain Canada and any funding partners. Brain Canada may also cancel further funding. More details on the reporting process will be provided to successful grantees.

In order to demonstrate to Canadians the ongoing value of the Canada Brain Research Fund (CBRF), principal investigators must contact Brain Canada in advance of the publication, release, or public presentation of research results obtained with the Future Leaders in Canadian Brain Research grants, so that a press release or other communication materials can be prepared. Embargoes will be strictly respected.

Brain Canada and the financial support of Health Canada and any named donor(s) must be acknowledged in all publications, releases and presentations of research as follows:

“This Project has been made possible by the Brain Canada Foundation, through the Canada Brain Research Fund, with the financial support of the <donor(s)> and Health Canada”.

Principal investigators must inform Brain Canada of any upcoming media and communications opportunities in advance and Brain Canada will in turn inform the donor(s) and Health Canada. Principal investigators will provide Brain Canada, donor(s) and Health Canada with the opportunity to be involved

Contact Information

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

Resources

[CIHR's Online Training Modules for Integrating Sex and Gender in Health Research](#)

[Gender-based Analysis Plus course](#)

[CIHR End-of-Grant Knowledge Translation](#)