

# Brain Canada

## Platform Support Grants (PSGs)

### Open Neuroscience/Data Sharing Request for Applications (RFA)

#### About Brain Canada

Brain Canada is a national non-profit organization that enables and supports transformative, original and outstanding brain research in Canada. For more than a decade, 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, brain and spinal cord injuries. Looking at the brain as one system has underscored the need for increased collaboration across disciplines and institutions, and a smarter way to invest in brain research that is focused on outcomes that will benefit patients and families.

The Canada Brain Research Fund is a public-private partnership established between Brain Canada and Health Canada to encourage Canadians to increase their support of brain research, and maximize the impact and efficiency of those investments. Brain Canada is raising \$120 million from private and non-federal sources, which is being matched by the Government of Canada on a 1:1 basis. 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.”

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## Rationale

Contemporary research in neuroscience and mental health generates ever larger and more complex multimodal data sets, including clinical, behavioural, cognitive, imaging, and various -omic data collected from multiple human subjects involved in clinical trials, and in animal models such as rodents and non-human primates. Understanding the significance of this data requires critical infrastructure in the form of large, integrated databases with associated neuroinformatics and computational tools for analyzing and modeling brain function. To facilitate collaboration, data must be shared between qualified investigators, with strict adherence to the highest standards of ethics, privacy and data security.

Brain Canada wishes to strengthen the Canadian neuroscience research community through a single large scale Platform Support Grant (PSG) in Open Neuroscience and Data Sharing, to “hardwire” Canadian neuroscience by 2020 and position Canada as a world leader in this area.

The PSG will help bring together existing Canadian neuroscience platforms, initiatives and networks, and will allow them to link, leverage, enhance and expand to form an integrated network.

This will represent the first step to change the culture of neuroscience research and to plan its long-term sustainability. As a pilot project, the PSG will make the case for the neuroscience community and the Government of Canada showing that they can all benefit from this type of evolution with the goal of further development of open neuroscience and data sharing beyond 2020.

## Grant details

The PSG is intended to support the development and maintenance of a large scale network, as well as its operating costs, for a period of three years. The total amount available to support the PSG is \$10.175M.

The PSG will have to provide added value to the Canadian neuroscience enterprise. Brain Canada and its partners will not prescribe any approaches, but wish for the applicants to answer three questions:

- How can Canada become a leader in open neuroscience and data sharing by 2020?
- What can be learnt and implemented from models in other countries?
- What national and/or international entities do we want to partner with?

More specifically, the application should address the following points:

- Demonstrate a clear understanding of open science principles in the context of existing frameworks and how such frameworks will apply to a national platform for open neuroscience;

- Including research examples:
  - Integrated and translational, but broad in scope – such as brain research, from fundamental to preclinical and clinical aspects, or from brain organisation and physiological processes to function and disease;
  - Integrated and translational, but more focused – such as modeling functional circuits underlying cognition in multiple models such as rodents, non-human primates and humans;
  - Inclusive – such as the development of a national database in imaging, genomics, phenomics and other *omics* applicable in neurodevelopment, mental health and brain disorders associated with aging.
- Developing and implementing an educational/training program to form the next generation of open neuroscience/data sharing professionals;
- Developing and beginning the implementation of a strategic plan leading to new standards in governance, ethics, privacy and data security, in the open neuroscience and data sharing context;
- Developing a long-term sustainability strategy for a Canadian open neuroscience and data sharing platform.

By doing so, the platform will result in the following outcomes:

- Improved operations and capabilities of existing neuroscience platforms through integration and interoperability;
- Improved accessibility to research data and methodological and analytical tools for investigators located in all Canadian neuroscience centres;
- Creation of new or enlarged data pools permitting research activities that were not previously possible;
- Improved tools for the analysis and modeling of research data within and across platforms;
- Enhanced theoretical modeling of brain function and interdisciplinary interactions between theoretical and experimental neuroscience;
- Increase awareness of open science principles and practices within the neuroscience research communities;
- Facilitate national and international collaborations driven by open and collaborative mechanisms;
- A discernable positive impact on Canada's capabilities and achievements in neuroscience research.

## Use of funds

The PSG funds must contribute towards the direct costs of the research for which the funds were awarded, and the benefits should be directly attributable to the PSG. The institution pays for the indirect or overhead costs associated with managing the research funded by Brain Canada.

This grant is not intended merely to replace current sources of funding or sustain current levels of existing platform service and capability.

### **Eligible costs**

These costs are related to the integration and interoperability of existing platforms but not their ongoing costs, and include: the acquisition of hardware, and software licenses; maintenance and service contracts; local infrastructures to facilitate access to high performance computing services; data storage and exchange costs; salaries of technical and professional staff, and salaries to coordinate the network; costs of training (e.g. workshops; courses, education upgrades) for users, PhD students, postdoctoral fellows, and technicians; salary support for research trainees at any stage of training, including postdoctoral fellows, to form the next generation of highly qualified personnel in open neuroscience/data sharing; and costs incurred in collaboration and communication between investigators or staff located in different institutions.

### **Ineligible costs**

These costs include salaries and consulting fees of the Lead and Members of the group applying for the PSG, and salaries of Associate Members of the group; renovation or construction of space for housing the network, purchase of standard office and laboratory furniture; costs of high-performance computing services (except local infrastructures to facilitate access to these services); audits or requirements for licensing; insurance; costs associated with protection of intellectual property.

Note that this list is not exhaustive, and Brain Canada may rule any other expenditure eligible or ineligible. Please contact Brain Canada about the eligibility of expenditures not listed above.

### **Funding Partners**

As a public-private partnership, Brain Canada grants are derived 50% from the Canada Brain Research Fund (CBRF) and 50% from funding partners. For this competition, the applicants must identify the matching partner(s) in their application. Brain Canada encourages companies, organizations, institutions and individuals that wish to build capacity and develop research excellence in Open Neuroscience and Data Sharing in all or specific areas or at specific institutions, or in certain provinces to support the PSG. The partner commits to providing matching funds for all or a specific component of the PSG.

- Eligible partners include for-profit enterprises, individual donors, charitable organizations, provincial government agencies and ministries, research institutions, hospitals and health-care organizations, and any other entities, including foreign entities or organizations, that receive 50% or less of their funding from the Government of Canada. It is anticipated that multiple partners will support the PSG.
- Partner's contributions must be provided in cash, not in-kind, to Brain Canada<sup>1</sup>, which will add the matching 50% from the Canada Brain Research Fund, and administer the grant.
- Partners' support of the PSG will be acknowledged in all presentations and publications, and Brain Canada will advise partners of any impending media opportunities related to the PSG, and vice-versa.

<sup>1</sup>It may be possible for partners to provide the matching funding directly to the Host Institution of the Principle Investigator, depending on the outcomes of negotiations of a new Contribution Agreement between Health Canada and Brain Canada that should be finalized by the end of 2016.

## Brain Canada operating and personnel costs

By administering this PSG funding opportunity, including the review process and subsequent progress reporting, Brain Canada incurs operating and personnel costs. According to the Contribution Agreement between Health Canada and Brain Canada regarding the Canada Brain Research Fund, Brain Canada can charge operating expense fees on the funds flowing to grant recipients, which make up most of its revenues for operating expenses. Brain Canada's policy is to deduct a 5% operating expense fee from the partners' contributions, and 10% from the matching contribution from the Canada Brain Research Fund. This results in a combined deduction of 7.5% from the total grant of \$11M leaving a balance of \$10,175M to support the PSG.

## Application process

### Overall Process

There will be a single application. Following the Neuroscience/Data Sharing workshop organized by Brain Canada on September 28<sup>th</sup> and 29<sup>th</sup>, 2016, a small working subgroup including, but not restricted to, participants of the workshop will be identified. This working subgroup, led by Dr. Alan Evans (McGill University; [alan.evans@mcgill.ca](mailto:alan.evans@mcgill.ca)), will have the authority to write the application, taking into consideration institutional and geographic representation across Canada, as well as types of platforms (e.g. imaging, phenomic, genomic, clinical) that should be included in the PSG. A draft will be circulated to the other workshop participants who will provide feedback.

Applicants will first be invited to submit a Draft of Concept, prior to the Full Application, and both will be subjected to a rigorous peer review.

Applicants need to designate a group including a Leader, Members and Associate Members.

The Leader, nominated by the group, will be the individual responsible for submitting the application on its behalf, and for all communication with Brain Canada. The Leader will normally be the individual responsible for overall management of the PSG.

The Associate Members may include foreign investigators, or investigators from industry or government sectors who can contribute their own funding to the activities of the PSG, but they cannot receive funding from the Brain Canada grant except as contractors who undertake specific fee-for-payment activities associated with the establishment or operations of the PSG.

### Criteria for Assessment

The application will only be considered for funding if it meets or exceeds the following attributes:

- **Excellence and impact of the research** that is to be conducted with the PSG. The platform enables excellent researchers to generate novel results that contribute to the advancement of theory and concept, or lead to the development of new approaches for prevention, diagnosis and treatment of neurological and mental illness. The research conducted includes sex and gender considerations. The research enabled by the PSG could not be conducted in its absence, except at much greater cost and more slowly, and support for the PSG will enhance Canada's capability in neuroscience research. The ultimate impact of this research will be to reduce the burden of disease, improve quality of life, and/or stimulate economic development in Canada.

- **Comprehensive scope.** The PSG takes advantage of and builds on existing platforms, initiatives and networks. It includes or is interoperable with or provides access to all major existing national and regional databases and neuroinformatics platforms (e.g. CBRAIN/LORIS, Brain-CODE).
- **Exemplary management.** The group managing the PSG is well-qualified, experienced and pan-Canadian in scope. The governance and organizational structure created with the PSG is strong, effective, and widely understood by users. There is an equitable and user-friendly process for access, and users receive training and assistance, allowing them to use the existing platforms and its services in the most efficient and economical fashion. Coordinated training is planned for students, postdoctoral fellows and technicians in order to have highly-qualified personnel for acquisition and analysis of databases. There is regular budget planning for operations and maintenance, and for technical modifications to keep pace with scientific progress. The operation of the group is reviewed or audited regularly against defined performance benchmarks and identified deficiencies are corrected.
- **Data sharing, ethics and privacy.** Standards and protocols for data collection and sharing permit the maximum interoperability with other databases or repositories, and also ensure the security of the data and protect the confidentiality of personal information. A strategic plan is put in place to develop exemplary standards in governance, ethics and privacy.
- **International linkages.** Data can be shared reciprocally with investigators in other countries, through an interoperable, open platform that is compatible with other data-sharing entities, e.g. the International Neuroinformatics Coordinating Facility (<https://incf.org/>).
- **Sustainable commitment to platform support.** The application is clear on the extent to which existing platforms, or the components that will be coordinated or integrated into the PSG, are supported from other sources. These sources provide assurances that the PSG will not displace their financial commitment. There is a credible plan for sustaining the network after the three years of Brain Canada funding.

### How to apply?

The Draft of Concept and the Full Application must be submitted using Brain Canada’s electronic grant management system ([https://braincanada.smartsimple.ca/s\\_Login.jsp](https://braincanada.smartsimple.ca/s_Login.jsp)). The Leader must complete all required application fields in the Brain Canada’s electronic grant application system before 16:00 ET on the deadline dates listed below. For any enquiries about the application process, please contact Brain Canada ([programs@braincanada.ca](mailto:programs@braincanada.ca)).

### Timeline

Call for Draft of Concept	November 8 <sup>th</sup> , 2016
Deadline for receipt of Draft of Concept	January 15 <sup>th</sup> , 2017 at 16.00 ET
Invitation to submit Full Application	February 15 <sup>th</sup> , 2017
Deadline for Receipt of Full Application	April 1 <sup>st</sup> , 2017 at 16.00 ET
Notification of Award	June 1 <sup>st</sup> , 2017
Funding begins (earliest date)	August 1 <sup>st</sup> , 2017

## Draft of Concept Components

### Cover page

- Title of proposal and name and affiliation of the Leader;
- Project start and end dates (note: choose dates within a 36-month window);
- List up to 10 key words describing the PSG.

### The PSG (Maximum 5 pages)

- Provide a description of the PSG that addresses all six criteria for assessment;
- Figures and references may be appended (maximum 1 page).

### Impact (Maximum 2 pages)

- Provide a description of the anticipated collective impact of the PSG on Canadian neuroscience, including the potential for intersectoral and international collaboration, and on Canada's capabilities in neuroscience research. Emphasize the added value of the PSG in improving the accessibility and performance of existing platforms, initiatives and networks.

### The Group

- List the names and affiliations of the Members and Associate Members of the group. It is recommended to include for each name a URL for their institutional or personal webpage or CV, so that reviewers can find out more about the member's research interests and achievements;
- Group Member publications: For each of the ten most important group Members, cite up to five of their publications, of which at least three must have been published in 2012 or later. "Publications" means any type of document or medium, print or electronic, which best illustrates the Member's relevant research experience, expertise and achievements and demonstrates the Member's ability to contribute to the development and operation of the PSG. Each item should be annotated with a brief reason for its selection. Include the DOI, URL or PMID of publications where applicable so that reviewers can access them;
- CVs should not be attached to the Draft of Concept.

### Budget

- All amounts entered in the budget section must be totals for the entire duration of the grant (NOT yearly amounts). Brain Canada will take the total amount and divide it equally across the 3 years of funding. These amounts include partner contributions.
- Provide an outline budget for the full period of funding, listing the major line items as described under "Eligible Costs", above, supplemented by a brief statement explaining how this line item will support the intended development and operation of the PSG;
- Each amount for a category as well as the sum of all categories must be rounded to a multiple of \$1,000;
- Summarise the anticipated contribution from each partner(s), and note how each partner's contribution will be used to support the PSG (e.g. purchase of hardware, or computing time).

### Attachments

- Figures and references (maximum 1 page);
- Support letters from potential partners (voluntary, no limit to number). The Draft of Concept does not have to be accompanied by a funding commitment from partners, but a letter of

support from a partner potentially interested in supporting the PSG will influence the Draft of Concept Selection Committee’s assessment of the viability and probable impact of the proposal.

### **Optional information**

- Provide names and contact information for up to five individuals outside Canada and not in conflict who would be competent to evaluate the application;
- If applicable, list individuals to whom the application should not be sent for review;

Reviewers will be selected by Brain Canada, taking these and other suggestions into account.

### **Certification and Signatures**

The Leader must click the “I Agree” box to certify the following agreement: “I certify that all members of the group have agreed to their inclusion in this application, and allow me to represent them throughout the application process. I also certify that all members of the group permit Brain Canada to circulate this application to third parties, under a confidentiality agreement, for the purpose of securing matched funding.”

### **Full Application Component**

Details of the application process will be provided along with the invitation to submit a full application.

### **Review and Decision Process**

Brain Canada will recruit a PSG Selection Committee, which will be composed of Canadian and International experts who are not in conflict with the Draft of Concept or Full Application.

The Draft of Concept and Full Application will be reviewed by five members of a Selection Committee. They may also be sent to other Canadian and international experts who will provide written comments to the Selection Committee. The Selection Committee will recommend whether the Draft of Concept is meritorious enough to be invited to submit a Full Application.

The applicants will receive anonymized reviewers’ comments, and notes of the Committee discussion. Brain Canada will not entertain appeals against the assessment of the Selection Committee.

### **Due diligence**

In order to reduce the burden on applicants, Brain Canada may require documentation (e.g. quotations for services, or repair/upgrade estimates, ethics approval where relevant) only from the Leader after the PSG proposal has been conditionally approved. Where the PSG involves the management of personal information or material derived from or to be used in human studies, the Leader will be required to provide copies of appropriate institutional ethical, confidentiality and other approvals as necessary before funds are released. The required documents must be received and other conditions resolved within a reasonable period specified by Brain Canada, before funds can be released to the institution of the group Leader. For this multi-institutional platform, the Leader is responsible for distributing funds to the other cost centers, through their institutions.



## Confidentiality and Ownership

Brain Canada will keep all materials submitted to it for this funding opportunity confidential, and will take reasonable steps to keep these materials confidential, and divulge them only to reviewers, Selection Committee members and observers, who have signed confidentiality agreements. Funded applications will be retained for comparison of intended and actual outcomes, as part of the final evaluation of the Canada Brain Research Fund.

Brain Canada does not claim ownership of intellectual property (I.P.) arising from research it funds, and expects that its funds will be used to create I.P. that is developed and commercialized according to the policies of the research institutions in which the research is performed. User Group Members must resolve I.P. ownership issues with funding partners before submitting an application. Where the Partner is a for-profit entity, Brain Canada must be consulted to determine if the I.P. arrangements are acceptable, and this will be a component of the Partnership agreement.

## Reporting, Communications, and Evaluation

As a condition of continued annual funding of PSGs, Brain Canada requires a brief yearly narrative and financial progress report from the leader, outlining how PSG funds were used and what impacts were realized, as well as difficulties encountered and steps taken to overcome them. The Progress Report will be reviewed by Brain Canada and Partners, with continued funding based upon a satisfactory review. Details of the reporting process will be provided to successful lead users.

Additionally, at the end of the grant, a Final Progress Report will be required. Ten percent of the final year's funding will be withheld by Brain Canada and released on receipt of a satisfactory Final Progress Report that describes the overall impacts of the PSG grant.

In order to demonstrate to Canadians, the ongoing value of the Canada Brain Research Fund, acknowledgment of Brain Canada, Health Canada and Partner funding must accompany all publication, release or presentation of research results obtained using platforms supported by Brain Canada. User team members must contact Brain Canada in advance of the publication, release or public presentation of significant research results obtained through the use of platforms supported by a Brain Canada PSG, so that a press release or other publicity can be prepared. Embargoes will be strictly respected. Brain Canada will advise Partners of impending significant publication.

## For Further Information

For any other information or questions:

- About the PSG competition and application process, please contact [programs@braincanada.ca](mailto:programs@braincanada.ca)
- About Brain Canada and the Canada Brain Research Fund: go to <http://braincanada.ca/>