WESTON
BRAIN INSTITUTE

LETTER OF INTENT
Rapid Response: Canada 2020
Alzheimer's & Related Diseases

DEADLINE: **April 24, 2020, 2:00pm ET**
Applicants will be notified of Proposal invitations in June 2020.

This Letter of Intent is an example only. Do not complete this paper application.
Please submit the Letter of Intent online through the Institute's grant management system. Please visit our website for more details at http://westonbraininstitute.ca/funding-opportunities/open-and-upcoming-programs/

Application Number:

Principal Applicant:

Project Title:

Applicant Details

	Team Members	Organizations	Primary Contact Information	Role in Project	Estimated Time Spent on Project
1.	Salutation:	Primary Organization:	Address:	☐ Principal Applicant	%
	First Name:	Position Title:	Phone:	☐ Administrative Supervisor	
	Last Name:	Other Affiliations/ Position Titles:	Email:	☐ Co-Applicant	
				☐ Collaborator	
2.	Salutation:	Primary Organization:	Address:	☐ Principal Applicant	%
	First Name:	Position Title:	Phone:	☐ Administrative Supervisor	
	Last Name:	Other Affiliations/ Position Titles:	Email:	☐ Co-Applicant	
				☐ Collaborator	

Note: Projects are not limited to two team members as laid out on this sample application form; projects may include as many team members as needed for the successful execution of the project.

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Continuing for 2020:

The budget for the Rapid Response: Canada 2020 program is up to $300,000 per project over up to 18 months.

Applications focused on complementary approaches are eligible for the Rapid Response: Canada program, if they meet our other program scope criteria and have specific supportive evidence/justification (from published literature or unpublished data) to warrant further investigation. Please refer to Institute definitions for complementary approaches for more details.

Encouraging applications that bring in other fields such as: AI, big data, machine learning, data science, and computer science.

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Institute definitions
A full list of definitions is available on our [website](#).

The Institute defines <u>neurodegenerative diseases of aging</u> to include:

- Alzheimer's disease
- Dementia with Lewy bodies
- Frontotemporal dementia
- Multiple system atrophy
- Parkinson's disease
- Progressive supranuclear palsy
- Vascular contributions to the above diseases (not stroke-mediated vascular disease)
- Prodromes to the above diseases, including
  - Mild cognitive impairment as prodromal to Alzheimer's disease
  - REM sleep behaviour disorder as prodromal to Parkinson's disease

Proposed projects may relate to any disease(s) but must have impact on the diseases above and will be adjudicated based on their potential impact on these diseases.

The Institute defines <u>translational research</u> to be:

Applied research towards developing therapeutics for the prevention and/or treatment of human disease. For example, for small molecule drug development, this includes target validation to Phase II clinical trials. Basic/discovery research, including but not limited to understanding disease mechanisms and discovering genes implicated in disease, is not in scope.

The Institute defines <u>therapeutics</u> to be:

A pharmacological approach (including small molecules, biologics, cell therapies and vaccines, including drug repositioning and repurposing), medical device, surgical intervention, or magnetic or electrical

brain stimulation. Therapeutics can be for symptomatic relief, disease modification, or prevention. Identification of novel therapeutics is in scope (e.g., high throughput compound screens); however, identification of novel therapeutic targets, including genes implicated in disease, is not in scope.

The Institute defines <u>clinical trials</u> to be:

Research in which one or more human subjects are prospectively assigned to one or more interventions to evaluate the effects of those interventions on health-related biomedical or behavioral outcomes. A clinical trial sub-study is defined by the Institute to be a study investigating a question not addressed by the main trial, and which may involve obtaining additional measurements and data collection from a sub-group of all participants from the main trial.

The Institute defines <u>tools</u> to be:

An item that accelerates development of therapeutics, e.g., imaging techniques or reagents, biomarkers, and diagnostics.

- Tools must have direct impact on the translational development of therapeutics (as defined by the Institute, i.e., target validation to phase IIa clinical trials) for neurodegenerative diseases of aging and will be valued only on their ability to do this.
    - Any value the tools contribute to basic research will not be taken into consideration. For example, tools will not be valued for their ability to identify new targets or understand disease mechanisms.
- Projects covering only the discovery/identification of a tool are out of scope.
- For more specific information on biomarkers and the phase of biomarker development that is within scope, please refer to our [website.](#)

For cognitive assessment tools and clinical assessment instruments

- If developing a cognitive assessment tool or a clinical assessment instrument, the tool must be being tested in patients with a relevant disease.
- Requires discussion of why the new assessment would be better than existing ones.

Notes about complementary approaches

Expanding complementary approaches section to also include other lifestyle interventions.
Accepting applications on "complementary" approaches or "lifestyle" interventions if these applications meet our other scope criteria as listed below. These interventions include but are not limited to diet, physical activity, sleep, nutritional supplements, speech therapy, cognitive therapy, music therapy, and social interaction. Projects are eligible for funding through the Rapid Response, Transformational Research, and Early Phase Clinical Trials programs. Applications on these topics are eligible if they meet our disease and project scope criteria above and the following criteria:

- Includes specific supportive evidence/rationale (published literature or unpublished data) to justify further investigation.

- Similar experimental design is used to test the approach as would be implemented to test therapeutics, including appropriate control groups.
  - Any interventional trials should address, as best as possible, the potential confound of placebo effect.
- Measures outcomes relevant to neurodegenerative diseases of aging (as defined by the Institute).
- Interventions are being investigated in relevant human cohorts and/or appropriate disease models (e.g., cell culture, *in silico*, or animals).
- Has direct impact on accelerating the development of treatments for neurodegenerative diseases of aging. Treatments can be for disease modification, symptomatic relief, or prevention.

Examples of projects that are considered out of scope for this program call, but could be considered in scope for future programs:
- An exercise intervention aimed at reducing obesity, blood pressure and resting heart rate in subjects with subjective cognitive impairment.
- Testing whether a 12-month paleo diet intervention improves cognition in healthy older subjects.

Examples of projects that are considered in scope:
- *In silico* screen of a library of nutritional supplements to select those that reduce amyloid plaques.
- Testing whether a 12-month paleo diet intervention improves MoCA scores or amyloid deposition in subjects with mild to moderate AD.

If you are interested in applying with a project that incorporates complementary approaches and/or lifestyle interventions, you are encouraged to contact Matthew Sacheli (+1-416-967-7828, matthew.sacheli@westonbrain.org) to discuss whether your project is in scope.

Application Overview

1. Keywords to describe the proposed work:

2. What type of tool, therapeutic or complementary approach is being developed as the primary goal of the project?
*(Please select only one - tool or therapeutic or complementary approach – that is being **developed** as the primary goal of the project, e.g., do not select "Animal model" unless you are developing a new animal model.)*

Tool
☐ Animal model
☐ Assay/screen

Therapeutic
☐ Biologic
☐ Cell therapy

Complementary approaches
☐ Sleep intervention
☐ Exercise intervention

☐ Biomarker ☐ Electrical brain stimulation ☐ Diet intervention
☐ Cell line ☐ Magnetic brain stimulation ☐ Nutritional supplement
☐ Clinical assessment instruments ☐ Medical device ☐ Other complimentary
☐ Diagnostic ☐ Small molecule approaches *Please specify:*
☐ Imaging technique or reagent ☐ Surgical intervention
☐ New method of drug delivery ☐ Vaccine
☐ Probe ☐ Other *Please specify:*
☐ Other *Please specify:*

If you selected 'biomarker' above, what is the primary purpose of the biomarker?
☐ Diagnostic – identify individuals with a particular disease or disease subtype/subset, or correctly rule out those who do not have the disease
☐ Prognostic – indicate future clinical progression
☐ Progression – objective measure of disease progression
☐ Prediction to response to therapy – identify individuals likely to respond (favourably or unfavourably) to a specific treatment
☐ Response to therapy: indicate that biological response has occurred after receiving a therapeutic intervention (e.g., a surrogate for a clinical end point)

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3. If a tool is being developed, please specify the type of tool being proposed in the project. If the proposed tool is a biomarker, please provide one sentence to answer the following question, being as specific as possible: What biomarker in what tissue/fluid/location are you measuring, using what technique, for what purpose, in which disease? If you are not developing a tool, please type "None".

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4. If a therapeutic is being developed as the primary goal of the project, what phase(s) of development does the project cover?
(Please select only those that apply. There is no benefit to selecting more phases than fewer phases.)

☐ Target validation ☐ Efficacy in animals
☐ Assay development ☐ Phase I clinical trial
☐ Screening and hits to leads ☐ Phase II clinical trial
☐ Lead optimization ☐ None
☐ Safety and toxicity in animals ☐ Other *Please specify:*

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5. Research will have a significant impact in which neurodegenerative disease(s) of aging?
(Select only those that apply. There is no benefit to selecting more diseases than fewer diseases.)

☐ Alzheimer's disease ☐ Vascular contributions to the listed
☐ Dementia with Lewy bodies diseases
☐ Frontotemporal dementia (not stroke-mediated vascular disease)
☐ Multiple system atrophy ☐ Prodromes to the listed diseases (please
☐ Parkinson's disease also check the disease(s) to which your
☐ Progressive supranuclear palsy condition is a prodrome)

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6. Relevance of proposed work to the Institute's mandate: using the Institute's definitions (above), explain how the primary tool or therapeutic or complementary approach being developed in this project (as identified in question 2 above) is translational research, and will accelerate the development of therapeutics for neurodegenerative diseases of aging. For tools, this requires addressing how the tool will have direct impact on accelerating translational research on therapeutics or complementary approaches*. (maximum 200 words.)*

7. What type of tool(s) and/or therapeutic(s) and/or complementary approach(es) is being developed aside from the primary goal of the project?
(E.g., do not select "Animal model" unless you are developing a new animal model. There is no benefit to selecting more items than fewer items. Select "None" if there are no tool(s) and/or therapeutic(s) and/or complementary approaches being developed aside from the primary goal of the project.)

Tool
☐ Animal model
☐ Assay/screen
☐ Biomarker
☐ Cell line
☐ Clinical assessment instruments
☐ Diagnostic
☐ Imaging technique or reagent
☐ New method of drug delivery
☐ Probe
☐ Other   *Please specify:*

Therapeutic
☐ Biologic
☐ Cell therapy
☐ Electrical brain stimulation
☐ Magnetic brain stimulation
☐ Medical device
☐ Small molecule
☐ Surgical intervention
☐ Vaccine
☐ Other   *Please specify:*

Complementary approaches
☐ Sleep intervention
☐ Exercise intervention
☐ Diet intervention
☐ Nutritional supplement
☐ Other complimentary approaches *Please specify:*
☐ None

If you selected 'biomarker' above, what is the primary purpose of the biomarker?
☐ Diagnostic – identify individuals with a particular disease or disease subtype/subset, or correctly rule out those who do not have the disease
☐ Prognostic – indicate future clinical progression
☐ Progression – objective measure of disease progression
☐ Prediction to response to therapy – identify individuals likely to respond (favourably or unfavourably) to a specific treatment
☐ Response to therapy: indicate that biological response has occurred after receiving a therapeutic intervention (e.g., a surrogate for a clinical end point)

8. Have you applied to the Weston Brain Institute previously with similar proposed work? If so, specify the previous LOI title and program applied to. Please briefly explain how this LOI is different than the previously submitted work.
(This information will not be used to assess the application.)

☐ Yes *Please specify:*
☐ No

9. Have you applied to other funding agencies with the same proposed work?
(This information will not be used to assess the application.)

☐ Yes *Please specify:*
☐ No

10. Is this your first time applying for a neuroscience grant from the Weston Brain Institute?
(This information will not be used to assess the application.)

☐ Yes
☐ No

11. Is this your first application for a research grant specifically in the area of neurodegenerative diseases of aging?
(This information will not be used to assess the application.)

☐ Yes
☐ No

The adjudication committee for this program does not include Canadians. Please list the full names of any individuals located outside of Canada who are competitive with you and therefore, should not review your application. Please do not exclude individuals for other reasons as we are unable to honour those requests. Type "None" if you have no reviewer exclusion. *(This information will not be used to assess the application.)*

Project Information

Central hypothesis, goals and specific aims of the project: *(maximum 200 words.)*

Background and significance: Why is it important that the proposed work be carried out? Evaluate existing knowledge and identify gaps that this project is intended to fill. *(maximum 200 words.)*

Experimental approach: Outline how the proposed work will be carried out and interpreted, including clear go/no-go criteria. Please do not include background information (e.g., pathology, etiology or incidence/prevalence) of neurodegenerative diseases of aging. Include power calculations, if applicable. *(maximum 600 words.)*

How will a successful outcome accelerate the development of therapeutics for neurodegenerative diseases of aging? *(maximum 200 words.)*

List of publications cited in the application: Please include <u>full citations</u> with a complete author list and PMID

Preliminary data: *(A maximum of 1 page of preliminary data that best supports the application can be uploaded as a PDF file, e.g., figures or tables.). Note, preliminary data is not required.*