

# REQUEST FOR PROPOSALS

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Grand Challenges Canada™  
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**BOLD IDEAS FOR HUMANITY.™**

## **Saving Brains**

Scaling Impact

November 2012

## Executive Summary

Children in poverty have a higher chance of adversity that risks disrupting brain development. This adversity can include malnutrition, a lack of consistent and nurturing interactions, poor management of pregnancy or birth complications, severe or chronic infections, exposure to environmental toxins and excessive fear. Failure to nurture children and protect them from these risks erodes the right of millions of child to develop to their full potential. It is also a devastating waste of human capital that leaves the next generation ill equipped to solve the enormous challenges that lock individuals, communities and societies in poverty.

Grand Challenges Canada is seeking **bold ideas for products, services, policies and implementation models that protect and nurture early brain development in a sustainable manner**, with the ultimate goal to improve human capital by eliminating threats to early brain development. Our focus is on low- and lower-middle-income countries and Canadian International Development Agency (CIDA) Countries of Focus. Specifically, proposals must provide innovative solutions relevant to low-resource settings.

Grand Challenges Canada is seeking to establish sites in eligible countries that are capable of innovating to develop, test and refine solutions that have measurable outcomes of improved early brain development, demonstrate a clear path to scale and sustainability, and can provide lessons for approaches to protect and nurture early brain development in other settings at scale. We expect to support projects that are championed by effective, results-driven leaders, build on local delivery systems, engage end users, and have the potential for real world impact. Grand Challenges Canada does not fund capacity-building initiatives alone. We are seeking evidence-based, affordable products, services, policies or implementation models that can be scaled in a sustainable manner.

Applicants are expected to take an Integrated Innovation™ approach, defined as the coordinated application of scientific/technological, social and business innovation to develop solutions to complex challenges. This approach does not discount the singular benefits of each of these types of innovation alone, but rather highlights the powerful synergies that can be realized by aligning all three.

**Through this Request for Proposals, Grand Challenges Canada has committed up to \$10 million CAD for this initiative.** We expect to fund proposals from eligible applicants working in low-resource settings, including those based in low- and lower-middle-income countries, CIDA Countries of Focus and Canada, through two funding streams:

1. **Seed grants** that support the development and validation of innovative ideas to protect and nurture early brain development, offering up to \$250,000 CAD each over a maximum of two (2) years. Proposals are expected to demonstrate proof of concept of the innovative idea.

2. **Transition-to-scale grants** to support the refinement, testing and implementation of innovative solutions that have already achieved proof of concept to bring them toward scale, offering up to \$2 million CAD each over a maximum of three (3) years. Projects are expected to demonstrate impact on early brain development.

The value of the award is expected to vary depending on project need.

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## 1. Introduction

### 1.1 GRAND CHALLENGES CANADA

Grand Challenges Canada is dedicated to supporting **bold ideas with big impact** in global health. We are funded by the Government of Canada; we fund innovators in low- and middle-income countries and Canada. The bold ideas integrate science and technology, social and business innovation (we call this Integrated Innovation); we work to catalyze scale, sustainability and impact. We have a determined focus on results, and saving and improving lives.

*“Canada has supported development innovation, pioneering new approaches to maximize impact and leverage private sector capital to address global development challenges. Canada’s strategic investments over the past several years are showing promising results...progress by Grand Challenges Canada in tackling critical barriers to solving some of the most pressing global health challenges.”*

**Budget 2012, Fostering Sustainable Global Growth**

Through the 2008 **Development Innovation Fund**, Canada was the first country to adopt a Grand Challenges approach to solving global health challenges in its official development assistance envelope. Grand Challenges Canada is the primary delivery vehicle for this fund, working alongside its consortium partners, the Canadian Institutes of Health Research and the International Development Research Centre.

Grand Challenges Canada is a significant new undertaking in Canadian foreign aid. Our vision is: **Bold Ideas. Big Impact. A Better World.** Our mission is: **Saving and improving lives in low- and lower-middle-income countries through Integrated Innovation.** Our primary priority is: **Solving critical global health challenges.**

At the core of our operating philosophy is **Integrated Innovation™**, which is the coordinated application of scientific/technological, social and business innovation to develop solutions to complex challenges, and to identify and overcome barriers in order to sustainably bring these solutions to scale. (Please see [www.grandchallenges.ca/integrated-innovation](http://www.grandchallenges.ca/integrated-innovation).)

### 1.2 BACKGROUND

#### The Problem

Over 200 million children in developing countries are unable to fulfill their developmental potential.<sup>1</sup> Restricted physical development in children accounts for a full 20% of the global disability-adjusted life years in children less than five years of age.<sup>2</sup> Inextricably

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<sup>1</sup> Grantham-McGregor et al. Developmental potential in the first 5 years for children in developing countries. *Lancet*, 2007 **36**:60-70.

<sup>2</sup> Black et al. Maternal and child undernutrition: global and regional exposures and health consequences. *Lancet*, 2008 **371**:243-60.

linked with this restricted physical development is the impact on early brain development. While different areas of the brain develop at different times and continue to adapt throughout life, most of the brain's development takes place within the first 1,000 days of development – during the fetal and early childhood period – making this a fundamentally important time. Furthermore, the brain's neural circuits are formed and strengthened with repeated use, and lost if not used. Significant adversity early in life can produce physiological disruptions to the developing circuits that persist into adulthood. Experiences and environments in the early years, therefore, substantially shape the developing brain architecture and the range of abilities and learning capacities a child accumulates. All of these set the trajectory towards long-term health. For example:

- A child with stunted growth by two years of age is at increased risk for cognitive and educational deficits, translating into less time spent in school and less learned per school year<sup>3</sup>. Cognitive and educational deficits accumulated by stunted children are estimated to result in a 22% loss of annual income in adulthood<sup>3</sup>.
- A child born at low birth weight is at increased risk of developing non-communicable diseases, such as cardiovascular disease and diabetes<sup>4</sup>.
- A child who lacks consistent access to a sensitive and responsive caregiver is at increased risk of sustained activation of the brain's stress responses, which can both disrupt neural circuits responsible for learning and memory<sup>5</sup>, and lead to greater susceptibility to stress-related disorders affecting both mental and physical health<sup>6</sup>.

Children in poverty have a higher chance of adversity that risks disrupting brain development. This adversity can include malnutrition, a lack of consistent and nurturing interactions, poor management of pregnancy or birth complications, severe or chronic infections, exposure to environmental toxins and excessive fear. Failure to nurture children and protect them from these risks erodes the right of millions of child to develop to their full potential. It is also a devastating waste of human capital that leaves the next generation ill equipped to solve the enormous challenges that lock individuals, communities and societies in poverty.

The Grand Challenges Canada Saving Brains program promotes the fulfillment of human capital potential by focusing on interventions that nurture and protect early brain development in the first 1,000 days. **Human capital** is defined as the productive wealth

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<sup>3</sup> Grantham-McGregor et al. Developmental potential in the first 5 years for children in developing countries. *Lancet*, 2007 **36**:60-70.

<sup>4</sup> Barker and Bagby. Developmental antecedents of cardiovascular disease: a historical perspective. *J Am Soc Nephrol*, 2005 **16**: 2537-44.

<sup>5</sup> Shonkoff et al. Neuroscience, molecular biology and the childhood roots of health disparities: building a new framework for health promotion and disease prevention. *JAMA*, 2009 **301**: 2252-9.

<sup>6</sup> McEwan. Central effects of stress hormones in health and disease: Understanding the protective and damaging effects of stress and stress mediators. *Eur J Pharmacol*, 2008 **583**: 174-85.

embodied in the cognitive abilities, social functioning (e.g., behaviour and psychological functioning), physical capacity and health status that allow an individual to be a contributing member of society.

**The goal of this Request for Proposals is to test and scale up bold ideas for products, services and implementation models that protect and nurture early brain development in a sustainable manner.** This is the third call for proposals issued under the Grand Challenges Canada Saving Brains program.

The first Saving Brains call was launched in May 2011, with a goal of determining the long-term impact of bold ideas to improve child development and human capital formation. Through this call's competitive process, 24 finalists were selected to attend a Proposal Development and Core Outcome Metrics Workshop and, on September 13, 2012, Grand Challenges Canada announced \$11.8 million CAD in support of the 11 projects that were selected as the most promising bold ideas with big impact. These 11 projects are assessing the long-term impact of interventions that promote adequate nutrition, rapid treatment of infection, healthy management of birth and newborn complications, and nurturing and cognitive stimulation. The second Saving Brains call was launched in October 2011, with a goal of determining the economic impact of poverty-related risk factors to cognitive development and human capital. The project selection has been made and will be announced in 2013. To see selected projects from previous calls, please see: [www.grandchallenges.ca/savingbrains-grantees-en/](http://www.grandchallenges.ca/savingbrains-grantees-en/).

### **The Opportunity**

A strong foundation for healthy brain development begins with the future mother's health before she becomes pregnant and continues to be built as biological systems develop in the first years of her child's life. Providing safe, nurturing environments (e.g., adequate nutrition, prevention and treatment of infections, safe birthing practices, physical spaces free of toxins, protection from fear) and positive experiences (e.g., consistent and responsive interactions with caring adults) that are conducive to healthy brain development in the early years is a powerful way to set children on a trajectory towards a healthy, productive life. The growing body of knowledge about how the brain develops and what disrupts the process<sup>7</sup> allows for a scientific rationale to drive development of impactful approaches to protect and nurture early brain development.

Children across the world grow up in diverse contexts. It is possible to identify general types of interventions – products, services, policies – that can be expected to mitigate relevant risks to early brain development across contexts. However, many vital questions remain that limit the current impact of known interventions and invite further product, service and policy innovation, including: Who benefits from the intervention? What is the extent of the benefit? How much of the intervention is needed for an effect? Is it cost-effective? How are the answers to the above questions influenced by other risk factors or contextual factors (e.g., political, social, cultural, economic)? Furthermore,

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<sup>7</sup> See *The Science of Early Childhood Development* and other reports by the National Scientific Council on the Developing Child, available at: [http://developingchild.harvard.edu/index.php/resources/reports\\_and\\_working\\_papers/](http://developingchild.harvard.edu/index.php/resources/reports_and_working_papers/)

innovative implementation models are needed to ensure effective solutions reach the children and families who could benefit most, and to enable scale and sustainability.

There is also tremendous opportunity for local leadership to champion innovative approaches to protect and nurture early brain development that leverages the actions of multiple influencers and ensures that impact at scale can be achieved.

## 2. Approach

### 2.1 PROGRAM GOAL

The goal of this Request for Proposals is to solicit innovative solutions for protecting and nurturing early brain development from individuals or teams capable of championing systemic change in low-resource settings in eligible low- or middle-income countries.<sup>8</sup> Bold, innovative, transformational, outside-the-box solutions are encouraged to address the product, practice, policy and implementation gaps for providing equitable, evidence-based, high-quality environments and experiences conducive for early brain development.

### 2.2 PROGRAM SCOPE

Grand Challenges Canada is seeking to establish sites in eligible countries<sup>8</sup> that are capable of innovating at scale to develop, test and refine solutions that have measurable outcomes of improved early brain development, demonstrate a clear path to scale and sustainability, and can provide lessons for approaches to protect and nurture early brain development in other settings.

This Request for Proposals is offering two streams of funding:

1. **Seed grants** that support the development and validation of innovative ideas to protect and nurture early brain development
2. **Transition-to-scale grants** that support the refinement, testing and implementation of innovative solutions that have already achieved proof of concept, to bring them toward impact at scale.

Solutions should acknowledge the main risks to early brain development. This will require consideration of the context in which the solutions are being developed, validated and implemented. Where solutions consist of multiple components, plans to evaluate the outcomes of key components are critical to being able to identify shortcomings and optimize impact.

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<sup>8</sup> Eligibility is based on considerations such as the World Bank's classification of low- and lower-middle-income countries and the Canadian International Development Agency's Countries of Focus. A full list of eligible countries is outlined in Section 4.1.

A child's early experiences are influenced in multiple ways: the family and dwelling; local communities; early childhood health and development programs and services; and regional, national and global environments<sup>9</sup>. Therefore, it is anticipated that caregivers, families, communities, businesses, healthcare providers, policy-makers, governments and international agencies have a role to play in providing a positive environment for young children.

Where they exist, **local systems** that either support child health, reach the target population or address broader determinants of health, including poverty, inequity (including gender inequity) and access to water and sanitation resources should be leveraged for efficiency and increased likelihood of sustainability.

To achieve impact at scale, any bold idea needs to be championed by an **effective, results-driven leader** with the capacity to convene and engage with the key influencers and align activities towards a shared goal. Furthermore, **end users of the solution** and those who will ultimately make decisions about the use of the solution should be engaged in the project at the outset and throughout, to ensure that the solution is poised for initial adoption and subsequent adaptation for greater impact.

Grand Challenges Canada is looking for solutions that have the potential for **real world impact**, and demonstrate **a clear path to scale and sustainability**. Proposals must therefore take an Integrated Innovation approach, defined as the coordinated application of scientific/technological, social and business innovation, to develop solutions to complex challenges. This approach does not discount the singular benefits of each of these types of innovation alone, but rather highlights the powerful synergies that can be realized by aligning all three. Integrated Innovation recognizes that scientific/technological innovation has a greater chance of going to scale and achieving global impact and sustainability if it is developed from the outset with appropriate social and business innovations. Similarly, it recognizes that social or business innovations will not be effective for global health challenges on their own. (Please refer to [www.grandchallenges.ca/integrated-innovation](http://www.grandchallenges.ca/integrated-innovation)).

Proposed solutions should therefore include a combination of:

- **Scientific/Technological Innovation:** Has a base in the psychological, natural, health or behavioural sciences or in engineering or economics. It can be simple, i.e., there is no requirement for high-tech solutions.
- **Social Innovation:** Recognizes and/or addresses the broader social, structural and/or political determinants of health. It address local and/or cultural contexts that factor into implementation and scaling

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<sup>9</sup> Irwin LG, Siddiqi A, Hertzman C. Early child development: a powerful equalizer – final report of the early child development knowledge network of the Commission on Social Determinants of Health. Geneva: World Health Organization, 2007. <http://whqlibdoc.who.int/hq/2007/a91213.pdf>. (accessed Nov. 2, 2012).

- **Business Innovation:** Maximizes the value, relevance and unique quality of the solution to create demand. It addresses affordability and accessibility barriers.

Multidisciplinary/cross-sector teams are encouraged where this is necessary to ensure relevant scientific, social and business expertise. Grand Challenges Canada does not fund capacity-building initiatives alone.

The Saving Brains program is designed to support an incremental accumulation of critical components and capabilities to sustain continual innovation at scale so an ambitious yet achievable goal to improve early brain development in low-resource settings can be met.

**Success for seed grants** is defined as:

- Demonstrated proof of concept of the idea
- Demonstrated capacity to monitor progress and evaluate project impact
- Identification and engagement of key stakeholders/influencers
- Identification of barriers to scale and possible approaches to addressing the barriers
- Demonstrated capacity to harvest and apply learning, generate and absorb best practices, and contribute to a learning community.

**Success for transition-to-scale grants** is defined as:

- Demonstrated impact on early brain development through delivery of a comprehensive solution
- Demonstrated ability to identify and adapt aspects of the solution that need improvement for greater impact
- Identification of a path to sustained impact at scale.

Grand Challenges Canada is concurrently developing a Saving Brains Platform that will serve as a mechanism to enable learning across projects, nurture leadership development for impact, enhance linkages among funding partners and leverage resources to enhance the field of early child development. With input from the Saving Brains community, the Platform will articulate a common theory of change that elaborates causal pathways based on scientific knowledge and practical experience. Articulating a theory of change enables diverse players to understand how the pieces fit together to achieve global impact and contribute to an ongoing learning community.

To establish a shared language with which to discuss successes and lessons, the Platform will also seek to enable the use of a shared metrics and evaluation framework. Use of metrics to capture core outcomes should therefore be incorporated into the project plans from the proposal stage for both seed and transition-to-scale grants. As defined in July 2012 by the existing Saving Brains community, the current set of core outcome metrics are:

1. Height for age, using WHO standards with a measure of self-reported puberty for participants aged 10–18 years

2. Estimate of general intelligence, based on Kaufman Assessment Battery for Children or Wechsler scales
3. Years of school, with indication of school access and, as is feasible, a measure of school quality
4. Indication of literacy, using a locally/regionally appropriate measures
5. Measures of executive function:
  - i. Working memory
  - ii. Cognitive flexibility
  - iii. Inhibitory control
  - iv. Sustained attention
6. Presence of behavioural and emotional problems and, as is feasible, criminality or its risk factors.

These core outcome metrics will evolve as the community expands and additional outcome metrics (e.g., adverse childhood events) may be added. This set of core outcome metrics serves as a minimum set and does not limit the scope of outcomes that can be captured. Measurement of additional outcomes relevant to specific hypotheses is encouraged.

## 2.3 SIZE OF GRANTS

The total funding available to support this competition is up to \$10 million CAD. We expect to fund proposals through two funding streams:

1. **Seed grants** to support the development and validation of innovative ideas to protect and nurture early brain development, offering up to \$250,000 CAD each over a maximum of two (2) years. Projects are expected to demonstrate proof of concept of the idea.
2. **Transition-to-scale grants** to support the refinement, testing and implementation of innovative solutions that have already achieved proof of concept, to bring them toward scale, offering up to \$2 million CAD each over a maximum of three (3) years. Projects are expected to demonstrate impact on early brain development.

The value of the awards is expected to vary and will be commensurate to the proposed project. The level of funding requested should be sufficient to assure completion of the goals in the stated timeframe. Grand Challenges Canada reserves the right to fully or incrementally fund selected application(s), to partially fund selected applications(s), and to increase or decrease budgets as it deems appropriate at its sole discretion.

## 3. Activities and Deliverables

In addition to engaging in activities related to their proposed project, the Project Leads and team members funded under this effort will be expected:

- Participate in a community of innovators that will meet twice yearly

- Contribute to and apply learning from the Saving Brains Community, including where moderated by the Grand Challenges Canada Saving Brains Platform
- Actively participate in defining a common theory of change to achieve common goal of protecting and nurturing early brain development
- Incorporate the core outcome metrics into project plans and actively participate in optimizing the set of core outcome metrics
- Actively engage with the Grand Challenges Canada Saving Brains Platform to develop capacities to create systems change for impact, including leadership development and evaluation frameworks
- Commit to the Grand Challenges Canada Global Access, Data and Ethics policies (see [www.grandchallenges.ca/resources/](http://www.grandchallenges.ca/resources/)), including entering into a Global Access Agreement with Grand Challenges Canada, as described below in Section 4.9
- Engage the end users throughout the project
- Engage stakeholders to enable impact, scale and sustainability
- Provide regular progress reports and a final report, and participate in site visits to evaluate progress against project milestones – instructions for the reports will be provided to grant recipients
- Disseminate knowledge through publications in peer-reviewed literature, conferences, social media, etc.

## 4. Rules and Guidelines

### 4.1 ELIGIBILITY CRITERIA

1. Eligible applicants include non-profit organizations, for-profit companies and other recognized institutions that can successfully execute the activities in their respective technical area, and are capable of receiving and administering grant funding. All applicants are encouraged to secure co-funding.
2. Applicants from the following list of countries are eligible to apply to this Saving Brains Request for Proposals. For the purposes of determining eligibility, Grand Challenges Canada may consider both the applicant's home jurisdiction and any other jurisdiction within which grant project activities will take place. The list of countries is based on considerations such as the World Bank's classification of low- and lower-middle-income countries, the Canadian International Development Agency's Countries of Focus and also includes Canada.

This list is subject to revision by Grand Challenges Canada without notice. Notwithstanding inclusion below, all eligible jurisdictions remain subject to approval by Grand Challenges Canada on the basis of compliance with all relevant Canadian and international laws and policies. Whenever possible, Grand Challenges Canada will provide reasonable notice of a determination of ineligibility for applicants located within jurisdictions listed below.

<i>Afghanistan</i>	<i>Guatemala</i>	<i>Papua New Guinea</i>
<i>Albania</i>	<i>Guinea</i>	<i>Paraguay</i>
<i>Antigua and Barbuda</i>	<i>Guinea-Bissau</i>	<i>Peru</i>
<i>Armenia</i>	<i>Guyana</i>	<i>Philippines</i>
<i>Bangladesh</i>	<i>Haiti</i>	<i>Rwanda</i>
<i>Belize</i>	<i>Honduras</i>	<i>Samoa</i>
<i>Benin</i>	<i>India</i>	<i>São Tomé and Príncipe</i>
<i>Bhutan</i>	<i>Indonesia</i>	<i>Senegal</i>
<i>Bolivia</i>	<i>Iraq</i>	<i>Sierra Leone</i>
<i>Burkina Faso</i>	<i>Jamaica</i>	<i>Solomon Islands</i>
<i>Burundi</i>	<i>Kenya</i>	<i>Somalia</i>
<i>Cambodia</i>	<i>Kiribati</i>	<i>South Sudan</i>
<i>Cameroon</i>	<i>Kosovo</i>	<i>Sri Lanka</i>
<i>Canada</i>	<i>Kyrgyz Rep.</i>	<i>St. Lucia</i>
<i>Cape Verde</i>	<i>Lao PDR</i>	<i>St. Vincent and the Grenadines</i>
<i>Central African Rep.</i>	<i>Lesotho</i>	<i>Sudan</i>
<i>Chad</i>	<i>Liberia</i>	<i>Suriname</i>
<i>Colombia</i>	<i>Madagascar</i>	<i>Swaziland</i>
<i>Comoros</i>	<i>Malawi</i>	<i>Tajikistan</i>
<i>Congo, Dem. Rep.</i>	<i>Mali</i>	<i>Tanzania</i>
<i>Republic of Congo</i>	<i>Marshall Islands</i>	<i>Timor-Leste</i>
<i>Côte d'Ivoire</i>	<i>Mauritania</i>	<i>Togo</i>
<i>Djibouti</i>	<i>Micronesia, Fed. Sts</i>	<i>Tonga</i>
<i>Dominica</i>	<i>Moldova</i>	<i>Uganda</i>
<i>Egypt, Arab Rep.</i>	<i>Mongolia</i>	<i>Ukraine</i>
<i>El Salvador</i>	<i>Montserrat</i>	<i>Uzbekistan</i>
<i>Ethiopia</i>	<i>Morocco</i>	<i>Vanuatu</i>
<i>Fiji</i>	<i>Mozambique</i>	<i>Vietnam</i>
<i>Gambia, The</i>	<i>Myanmar</i>	<i>West Bank and Gaza</i>
<i>Georgia</i>	<i>Nepal</i>	<i>Yemen, Rep.</i>
<i>Ghana</i>	<i>Nicaragua</i>	<i>Zambia</i>
<i>Grenada</i>	<i>Niger</i>	<i>Zimbabwe</i>
	<i>Nigeria</i>	
	<i>Pakistan</i>	

3. Collaborations between eligible applicants (from countries listed above) and Canadian applicants are encouraged but not required. In order to be considered eligible, Canadian applicants must apply with an applicant in an eligible country

listed above (outside of Canada) and a majority of the budget must be spent in the partner country in order to be eligible.

4. It is not the intention of this Request for Proposals to exclude existing productive collaborations between applicants in eligible countries and non-eligible countries. If justified, these collaborations may be part of a proposal. However, the applicant in the eligible country must be the primary applicant and Project Lead of the project, and a majority of the budget must be spent in an eligible country listed above (outside of Canada).
5. Project Leads are permitted to submit only one (1) application to *either* the seed grant or the transition-to-scale competition.
6. Grand Challenges Canada may, at any time and at its sole discretion, modify eligibility criteria with respect to individual applicants, Project Leads or the Saving Brains program, to the extent that such modifications do not materially undermine the review process. (See Section 4.3.)

## 4.2 APPLICATION INSTRUCTIONS

Application instructions and forms will be made available on the Grand Challenges Canada website via a link from [www.grandchallenges.ca/grand-challenges/womens-childrens-health/saving-brains/](http://www.grandchallenges.ca/grand-challenges/womens-childrens-health/saving-brains/).

**For a seed grant** (up to \$250,000 CAD), applicants will submit a proposal that describes their innovative idea, goal, objectives and activities, approach, framework for measuring success, and budget as outlined in the detailed instructions (see [www.grandchallenges.ca/grand-challenges/womens-childrens-health/saving-brains/](http://www.grandchallenges.ca/grand-challenges/womens-childrens-health/saving-brains/)). Please note: Project Leads of proposals nominated for funding will be expected to attend a Saving Brains Community Meeting that will focus on developing and scaling innovative solutions for early brain development.

**For a transition-to-scale grant** (up to \$2 million CAD), applicants will submit a Letter of Intent that describes their innovative solution, goal, objectives and activities, approach, framework for measuring success, and budget as outlined in the detailed instructions (see [www.grandchallenges.ca/grand-challenges/womens-childrens-health/saving-brains/](http://www.grandchallenges.ca/grand-challenges/womens-childrens-health/saving-brains/)). Successful applicants at the Letter of Intent stage will be invited to submit a full proposal that expands upon these same components. Instructions will be provided at the time of invitation. Project Leads of successful Letters of Intent will also be invited to a Proposal Development Workshop to enable the success of their proposals: the proposal development component of the Workshop will provide Project Leads from low- and middle-income countries an opportunity to further develop and hone their proposals by learning grant writing techniques, with guidance from experienced grant writers, mentors and peers. The Workshop will be held in conjunction with the Saving Brains Community meeting that will include a focus on developing and scaling innovative solutions for early brain development. Costs to attend the Workshop will be covered by Grand Challenges Canada.

Applicants are encouraged to access Grand Challenge Canada's Online Proposal Development Resource at [www.grandchallenges.ca/proposaldevelopment](http://www.grandchallenges.ca/proposaldevelopment), which is updated regularly and contains material to help researchers and innovators around the world develop their project proposals and plan for how their innovation will go to scale, be sustained and have impact globally.

## 4.3 REVIEW PROCESS

The Canadian Institutes of Health Research is responsible for conducting the peer review of all submissions. A review committee of external reviewers, including experts from low- and middle-income countries, will advise on the merit of proposals, based on the evaluation criteria (see Section 4.5). In some circumstances, the peer review committee may recommend transition-to-scale applications for seed grants. Final selection decisions will be made by the Board of Directors of Grand Challenges Canada at the Board's sole discretion.

#### 4.4 APPLICATION SCHEDULE

##### Seed grants (up to \$250,000 CAD):

Key Deadlines	Event
February 11, 2013	Application deadline for seed grant proposals at 11:59 p.m. ET
May 2013	Notification of award
Week of June 17, 2013	Saving Brains Community meeting for those nominated for award

##### Transition-to-scale grants (up to \$2 million CAD):

Key Deadlines	Event
February 11, 2013	Application deadline for Letters of Intent at 11:59 p.m. ET
May 2013	Invitation to submit a full proposal
Week of June 17, 2013	Proposal Development Workshop and Saving Brains Community meeting for those invited to submit a full proposal
July 15, 2013	Application deadline for full proposals at 11:59 p.m. ET
October 2013	Notification of award

#### 4.5 EVALUATION CRITERIA

Seed grants and transition-to-scale grants have different evaluation criteria, as outlined separately below.

Evaluation Criteria	Seed Grant	Transition-to-scale Grant (Letters of Intent & Full Proposals)
<b>Impact</b>	<ul style="list-style-type: none"> <li>• Is the proposed idea aligned with the Program Scope, Section 2.2?</li> <li>• Does the idea have the potential to be transformational?</li> <li>• Will the project have clear outcomes that demonstrate proof of concept of the idea to protect and nurture early brain development in low-resource settings?</li> <li>• Is the proposed idea appropriate for wider implementation and scaling in low-resource settings?</li> </ul>	<ul style="list-style-type: none"> <li>• Is the proposed solution aligned with the Program Scope, Section 2.2?</li> <li>• Does the solution have the potential to be transformational?</li> <li>• Has the proposed solution already achieved proof of concept and is it ready for refinement, testing and implementation toward scale?</li> <li>• Is it clear that the outcomes of this project will promote healthy early brain development in low-resource settings?</li> <li>• Is the proposed solution appropriate for wider</li> </ul>

		implementation and scaling in low-resource settings?
<b>Integrated Innovation</b>	<ul style="list-style-type: none"> <li>• Is the proposed idea bold, truly novel and/or a departure from incremental improvements over current approaches? Innovative approaches to the implementation and delivery of known interventions are also encouraged.</li> <li>• Is there a plan or approach to identify the barriers to scale and sustainability?</li> <li>• Does the proposed idea integrate scientific/technological, social and business innovation?</li> <li>• Will key stakeholders and/or potential users of the knowledge/goods/services be engaged in the proposed project?</li> </ul>	<ul style="list-style-type: none"> <li>• Is the proposed solution bold, truly novel and/or a departure from incremental improvements over current approaches? Innovative approaches to the implementation and delivery of known interventions are also encouraged.</li> <li>• Is there an Integrated Innovation approach to overcome the barriers to scale and sustainability?</li> <li>• How feasible is the anticipated plan for taking this solution to scale and achieving sustainability?</li> <li>• Will key stakeholders and potential users of the knowledge/goods/services be engaged in the proposed project?</li> </ul>
<b>Technical Merit/ Execution Plan</b>	<ul style="list-style-type: none"> <li>• Is the plan to execute the project clearly articulated, feasible and technically sound? Has the project scope been clearly defined?</li> <li>• Are the proposed goals and objectives based on sound scientific analysis, technical rigour and/or existing evidence?</li> <li>• Are there appropriate, feasible and technically sound metrics of success/milestones to measure and evaluate progress toward the achievement of proof of concept?</li> <li>• Is there a feasible plan to identify and apply learning for improved outcomes as the project unfolds?</li> <li>• Are the timelines proposed appropriate and feasible?</li> <li>• Is there evidence provided to indicate the likelihood of success, and a rigorous assessment of</li> </ul>	<ul style="list-style-type: none"> <li>• Is the plan to execute the project clearly articulated, feasible and technically sound? Has the project scope been clearly defined?</li> <li>• Are the proposed goals and objectives based on sound scientific analysis, technical rigour and/or existing evidence?</li> <li>• Are there appropriate, feasible and technically sound metrics of success/milestones to evaluate and measure progress on protecting and nurturing early brain development?</li> <li>• Is there a feasible plan to identify and apply learning for improved outcomes as the project unfolds?</li> <li>• Are the timelines proposed appropriate and feasible?</li> <li>• Is there evidence provided to indicate the likelihood of</li> </ul>

	<p>risks and associated mitigation strategies?</p> <ul style="list-style-type: none"> <li>• Is there sufficient time dedicated for proper execution of the plan?</li> </ul>	<p>success, and a rigorous assessment of risks and associated mitigation strategies?</p> <ul style="list-style-type: none"> <li>• Is there sufficient time dedicated for proper execution of the plan?</li> </ul>
<p><b>Leadership Capability to Champion Change</b></p>	<ul style="list-style-type: none"> <li>• Does the Project Lead have the potential for commitment and leadership needed to bring solutions to scale, as demonstrated by letters of support for the Project Lead and other evidence?</li> <li>• Are the proposed Project Lead and key team members appropriately trained, experienced and positioned in the local community to carry out the proposed work (i.e., scientific, social and business expertise)?</li> <li>• Have the Project Lead and key team members demonstrated the ability to convene necessary stakeholders who can influence systems change (e.g., business, academic and public sectors), including those new to the project and its goals, as demonstrated by letters of support for the project?</li> </ul>	<ul style="list-style-type: none"> <li>• Has the Project Lead demonstrated the commitment and leadership needed to bring solutions to scale, as demonstrated by letters of support for the Project Lead and other evidence (i.e., a track record of successfully scaling innovations and making them sustainable)?</li> <li>• Are the proposed Project Lead and key team members appropriately trained, experienced and positioned in the local community to carry out the proposed work (i.e., scientific, social and business expertise)?</li> <li>• Do the proposed partnerships and composition of multi-disciplinary teams increase the likelihood of success?</li> <li>• Have the Project Lead and key team members demonstrated the ability to convene necessary stakeholders who can influence systems change (e.g., business, academic and public sectors), including those new to the project and its goals, as demonstrated by letters of support for the project?</li> <li>• Do influencers/key stakeholders required for systems change and/or to sustain innovation at scale have an active role in the project?</li> <li>• Is there commitment of a strategic partner institution capable of supporting the</li> </ul>

		scaling of the solution?
<b>Value for Effort</b>	<ul style="list-style-type: none"> <li>• Is the scope of the proposed work and the funds requested reasonable and commensurate with the proposed study goals?</li> <li>• Does the proposal represent a particularly thoughtful and efficient use of resources?</li> </ul>	<ul style="list-style-type: none"> <li>• Is the scope of the proposed work and the funds requested reasonable and commensurate with the proposed study goals?</li> <li>• Does the proposal represent a particularly thoughtful and efficient use of resources?</li> <li>• How much cash (preferred) or in-kind resources have been leveraged to provide confidence that the solution will be sustainable on its own after the successful completion of Grand Challenges Canada grant funding?</li> </ul>

#### 4.6 ALLOWABLE COSTS

Grant funds may be used for the following cost categories:

1. Personnel: *Please note that salary support is an allowable cost.*
2. Travel
3. Consultants
4. Direct Supplies
5. Equipment: *Please note that partial or full support for equipment may be requested. Funding for infrastructure will be limited.*
6. Other Research Costs
7. Sub-grants/Subcontracts
8. Indirect costs: *Please note that Grand Challenges Canada will provide a limited amount of indirect costs based on the nature of the applicant organization, to a maximum of 13% of direct costs of the grantee's administered grant value (1–7 outlined above).*

Please provide budget estimates according to the categories outlined above and detailed application instructions (see [www.grandchallenges.ca/grand-challenges/womens-childrens-health/saving-brains/](http://www.grandchallenges.ca/grand-challenges/womens-childrens-health/saving-brains/)).

#### **4.7 PRIVACY NOTICE**

To help us in the evaluation and analysis of projects, all proposals, documents, communications and associated materials submitted to the Grand Challenges Canada (collectively, “Submission Materials”) will become the property of Grand Challenges Canada and will be shared with other members of the Grand Challenges Canada consortium (the International Development Research Centre and Canadian Institutes of Health Research). We will report publicly on the number of applications received and the countries from which they originated. The proposals will be subject to confidential external review by independent subject matter experts and potential co-funders, in addition to analysis by our staff. Please carefully consider the information included in the Submission Materials. If you have any doubts about the wisdom of disclosure of confidential or proprietary information, we recommend you consult with your legal counsel and take any steps you deem necessary to protect your intellectual property. You may wish to consider whether such information is critical for evaluating the submission, and whether more general, non-confidential information may be adequate as an alternative for these purposes.

We respect confidential information we receive. Nonetheless, notwithstanding your characterization of any information as being confidential, we may publicly disclose all information contained in Submission Materials to the extent as may be required by law, and as is necessary for potential co-funders and external reviewers, such as government entities, to evaluate them, and the manner and scope of potential funding, consistent with appropriate regulations and their internal guidelines and policies.

#### **4.8 WARRANTY**

By providing any Submission Materials, the sender warrants Grand Challenges Canada that they have the right to provide the information submitted. Applicants with questions concerning the contents of their Submission Materials may contact Grand Challenges Canada by email at [savingbrains@grandchallenges.ca](mailto:savingbrains@grandchallenges.ca).

#### **4.9 INTELLECTUAL PROPERTY**

Since the output of this program may lead to innovative technologies and/or products for those that need them most in the developing world, the successful development of these products may require involvement and support of the private sector, and may also involve collaborations with multiple organizations, including academic and/or non-profit research institutions. It is the intent of this program to support the formation of appropriate public-private partnerships that are essential to meet these urgent global health needs. Intellectual property rights and the management of intellectual property rights are likely to play an important role in achieving the goals of this program. Grand Challenges Canada’s Global Access Strategy will guide our approach to intellectual property and we urge all applicants, even at the application stage, to consider their willingness to submit a full proposal in compliance with the Grand Challenges Canada Global Access Strategy, the guiding principles of which are as follows:

- Breakthrough solutions to global challenges are made accessible to those in need, particularly in the developing world. Accessibility relates to both price and availability.
- Knowledge gained through discovery is broadly, and as promptly as possible, distributed between related projects and to the global scientific community.
- Commercialization of resulting outputs is encouraged, as long as the first two principles are achieved.

Grantees will be required to sign a Global Access Agreement with Grand Challenges Canada, in line with the Guiding Principles, for the use of intellectual property and other outputs arising from this program, including a non-exclusive, perpetual, irrevocable, royalty-free, fully-paid, sub-licensable and assignable license in respect of all outputs arising from the work carried out by grantee, or at the grantee's direction, in connection with this Grand Challenges Canada grant, to permit Grand Challenges Canada (and its sub-licensees) to use, educate, conduct research, develop, make, have made, import, export, sell, offer for sale or distribute products, processes or solutions in developing markets for the purposes of global access. For further information, please refer to Grand Challenges Canada's intellectual property policy at [www.grandchallenges.ca/resources/](http://www.grandchallenges.ca/resources/).

#### **4.10 DATA ACCESS**

Grand Challenges Canada is committed to optimizing the use of data to translate knowledge into life-saving solutions. To fulfill this objective, data must be made widely and rapidly available to the Grand Challenges Canada research community and the broader global health community through ethical and efficient data access practices. In accordance with global access, data access represents an elaboration of the second guiding principle of the Global Access Policy, which states that knowledge gained through discovery is broadly, and as promptly as possible, distributed between related projects and to the global scientific community.

Grantees may be required to develop and submit a Data Access Plan (DAP) that specifies how data access will be implemented and the timeframe for data release. Data refers at a minimum to final, annotated quantitative and qualitative datasets and accompanying information, such as metadata, codebooks, data dictionaries, questionnaires and protocols.

Grand Challenges Canada recognizes the value of intellectual property and commercialization, and the benefits of first and continuing use of data, but not prolonged or exclusive use. In some cases, intellectual property protection, laws or regulations may delay or preclude access to data. In such cases, the grantee will provide justification to warrant a partial or complete waiver of the data access requirement.

#### 4.11 NATURE OF THIS PROGRAM

This Request for Proposals is part of a discretionary granting program. Submission of an application does not create a contractual relationship between the applicant and Grand Challenges Canada. As a result, Grand Challenges Canada may:

1. Cancel this Request for Proposals at any time and for any reason
2. Reissue the Request for Proposals at any time and for any reason
3. Accept or reject any application that is nonconforming because it does not meet the eligibility criteria, does not comply with the application instructions, and/or does not comply with the instructions for allowable costs
4. At Grand Challenges Canada's sole discretion, accept or reject any or all applications, regardless of an application's ranking based on the evaluation criteria, with or without providing an explanation
5. Award a fewer number of grants than set out above
6. Award grants with different funding amounts, different durations and/or different conditions than set out above
7. Verify any information provided by applicants through independent research or by contacting third parties deemed to be reliable by Grand Challenges Canada
8. Use video or other visual representation submitted by applicants on the Grand Challenges Canada website for public engagement
9. Not provide critiques or feedback regarding the reasons a proposal was or was not selected
10. Design grant awards to link to possible funding partners, including private sector investors.

## 5. Research Assurances

It is the policy of Grand Challenges Canada that research involving human subjects, research with animals and research subject to additional regulatory requirements must be conducted in accordance with the highest internationally recognized ethical standards. In order to receive funds from Grand Challenges Canada, initially and throughout the course of a research project, researchers must affirm and document compliance with the guiding ethical principles and standards outlined below:

1. Research involving human participants must be conducted in a manner that demonstrates, protects and preserves respect for persons, concern for the welfare of individuals, families and communities, and justice.<sup>10</sup>
2. Research involving animals must be conducted in a manner that ensures their humane care and treatment.

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<sup>10</sup> Modified from the core principles articulated in Tri-Council Policy Statement 2 ([www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/chapter1-chapitre1/#toc01-1b](http://www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/chapter1-chapitre1/#toc01-1b)).

3. Certain research endeavors, including but not limited to research with recombinant DNA, biohazards and genetically modified organisms, may be subject to enhanced regulation and oversight.

While not necessary for the Letter of Intent, and as applicable to the individual project, Grand Challenges Canada will require that for each venue in which any part of the project is conducted (either by your organization or a sub-grantee or subcontractor), all legal and regulatory approvals for the activities being conducted will be obtained in advance of commencing the regulated activity. We will further require you to agree that no funds will be expended to enroll human subjects until the necessary regulatory and ethical bodies' approvals are obtained. For further details, please see the Grand Challenges Canada Ethics policy at [www.grandchallenges.ca/resources/](http://www.grandchallenges.ca/resources/).

Questions about the Saving Brains program or the application process should be addressed to [savingbrains@grandchallenges.ca](mailto:savingbrains@grandchallenges.ca). Responses to frequently asked questions will be periodically posted on our website at [www.grandchallenges.ca/grand-challenges/womens-childrens-health/saving-brains/](http://www.grandchallenges.ca/grand-challenges/womens-childrens-health/saving-brains/).