

REQUEST FOR PROPOSALS

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Grand Challenges Canada™
Grands Défis Canada^{MC}

BOLD IDEAS FOR HUMANITY.™

**Stars in Global Health
Round 4 Phase I**

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Executive Summary

Massive inequalities in health exist across the globe because of persistent global health challenges. The urgency to address these health disparities was reflected in the eight goals for development agreed upon by United Nations member states in the Millennium Declaration. Four of the Millennium Development Goals (MDGs) directly apply to health: MDG 1, eradicate extreme poverty and hunger; MDG 4, reduce childhood mortality; MDG 5, improve maternal health; and MDG 6, combat HIV/AIDS, malaria, tuberculosis and other diseases.

Historically, some of the greatest impacts in global health were from innovators who tried out **bold ideas**. The discovery of vaccines over 200 years ago and of antibiotics in the last century are classic examples of unorthodox thinking that resulted from **bold ideas** that have had **bold impact** and saved millions of lives.

Grand Challenges Canada, which is funded by the Government of Canada, has developed this *Stars in Global Health* program to support **Bold Ideas with Big Impact**TM from the best and brightest talent, both in Canada and in low- and lower-middle-income countries, to use scientific/technical, social and business innovation to address some of the most pressing global health problems.

A total of \$74 million CAD has been committed to this initiative, to be awarded as competitive grants through various rounds. In each round, we expect to fund approximately 50 proposals from applicants in low- and lower-middle-income countries and in Canada. Awards are initially valued at \$100,000 CAD for up to 12-18 months, to demonstrate proof-of-concept of the idea. Upon successful review of proposals at 12-18 months after the initial award is granted, scale-up grants of up to \$1 million CAD with potential linkages to private sector investments may be awarded.

Since June 2011, Grand Challenges Canada has awarded a total of 34 such grants, each at \$100,000 CAD. These projects run across the whole spectrum of global health, from drug discovery, vaccine development, health and medical education, maternal and child health, non-communicable diseases (including cancer), information communication technologies and behavioural change.

In this Request for Proposals, Grand Challenges Canada is seeking to support any **Bold Ideas with Big Impact** that improve global health, including those from agriculture and water and sanitation sectors, from talented innovators from Canada or from low- or lower-middle-income countries.

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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, and we fund innovators in low- and middle-income countries and Canada. The bold ideas integrate science, technology, social and business innovation (**Integrated Innovation™**) and we work to catalyze scale, sustainability and impact. We have a determined focus on results and saving and improving lives.

In the 2008 Federal Budget, the Government of Canada announced the creation of the Development Innovation Fund to:

“Support the best minds in the world as they search for breakthroughs in global health and other areas that have the potential to bring about enduring changes in the lives of millions of people in poor countries.”

“For example, new vaccines and cures could save millions of lives lost to tropical diseases. Higher-yield, drought-resistant crops could prevent future famines. And lower-emission energy sources could power industrial development and job creation with a minimal carbon footprint.”

Grand Challenges Canada works with the International Development Research Centre (IDRC), the Canadian Institutes of Health Research (CIHR) and other global health foundations and organizations to find sustainable, long-term solutions through integrated innovation. Grand Challenges Canada is hosted at the Sandra Rotman Centre.

The **vision** of Grand Challenges Canada is to develop a consortium of world-leading Canadian and international scientists, research organizations and leaders from the business sector, to develop breakthrough solutions to global challenges and ensure that these solutions are available to those who need them the most.

Grand Challenges Canada’s **mission** is to identify global grand challenges, fund a global community of researchers and related institutions on a competitive basis to address them and support the implementation/commercialization of the solutions that emerge.

Grand Challenges Canada adopts an **Integrated Innovation** approach to its work. Integrated Innovation is 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 innovations have a greater chance of going to scale, and achieving global impact and sustainability, if they are developed from the outset with appropriate social and business innovations. (Please see www.grandchallenges.ca/integrated-innovation.)

1.2 BACKGROUND

The Problem

Despite more than a decade of focus on the Millennium Development Goals, intolerable inequities in health between high- and low-income areas in the world persist. For example, malnutrition in children is over 10 times more prevalent in developing countries than developed countries, a newborn is over 35 times more likely to die in the first month of life in the developing world than in developed countries, a woman in a low-income region is 50 times more likely to die in pregnancy and childbirth than a woman in a high-income region, and tuberculosis is still over 100 times more prevalent in sub-Saharan Africa than it is in North America.

In addition, many low- and middle-income countries are now facing a double burden of disease, with non-communicable diseases and conditions such as mental health issues, hypertension, cancer and injuries (which previously were predominant only in developed nations) joining infectious diseases to magnify this health disparity.

Investigators in low- and middle-income countries can significantly contribute to global health, because they live among the target populations and understand the context through which global health interventions will be delivered. In addition, through their access to excellent, world-class training and research facilities, Canadian innovators have the potential to make a difference in the area of global health.

Historically, some of the greatest impact in global health was from innovators who tried out bold ideas. The discovery of vaccines over 200 years ago and of antibiotics in the last century are classic examples of unorthodox thinking that resulted from **bold ideas** that have had **big impact** and saved millions of lives.

We have developed this *Stars in Global Health* program to support **Bold Ideas with Big Impact** from the best and brightest talent in Canada and in low- and lower-middle-income countries who will use scientific/technical, social and business innovation to address these most pressing global health problems.

The tremendous skills and knowledge of these innovators mean that we can harness an opportunity to address these global health challenges. We will accept any **Bold Ideas with Big Impact** that improve global health, including those from agriculture and water and sanitation sectors.

2. Approach

2.1 PROGRAM GOAL AND KEY OBJECTIVES

The goal of this Request for Proposals is to support exceptional innovators from Canada and from low- and lower-middle-income countries, as classified by the World Bank (<http://data.worldbank.org/about/country-classifications/country-and-lending-groups>), and who have **Bold Ideas with Big Impact** in the area of global health.

2.2 PROGRAM SCOPE

Grand Challenges Canada seeks **proposals for innovative solutions** that could be easily implemented in developing countries to improve global health. We seek **ideas** that are **bold and creative**, and that have the potential to make a substantial impact on a global health problem. The proposed innovations would need to:

1. Have a strong likelihood of achieving substantial and measurable health gains in an under-resourced setting;
2. Maximize delivery, uptake, acceptability, sustainability and impact by integrating scientific/technological, social and business innovation. We call this “Integrated Innovation”. (See the *Integrated Innovation* white paper available at <http://www.grandchallenges.ca/integrated-innovation/>);

Desirable attributes include:

- Approaches that can be used effectively to improve health in communities with no or only basic healthcare infrastructure/personnel
- Solutions appropriate for settings with limited infrastructure (e.g., lack of electricity or clean water, etc.)
- Approaches that minimize maintenance and training
- Solutions that can be easily assimilated into cultural practices and existing health delivery mechanisms (including in communities with no or basic health clinics)
- Extreme affordability
- Approaches that reflect an understanding of the target user market and addresses the needs of this user
- Solutions that include a solid business plan to drive market penetration and uptake in poor countries.

We will *not* consider funding for solutions that are not applicable to a low-resource, developing world setting.

2.3 SIZE AND LENGTH OF AWARDS

Assuming a sufficient number of proposals of merit, a total of \$74 million CAD is available for this program through various rounds. Awards are initially valued at \$100,000 CAD for up to 12-18 months to demonstrate proof of concept of the idea. Upon successful review of proposals at 12-18 months after the initial award is granted, scale-up grants of up to \$1 million CAD with potential linkages to private sector investments may be awarded.

In this round, we anticipate awarding up to:

- 20 Canadian grants valued at \$100,000 CAD
- 30 low- and lower-middle-income country grants valued at \$100,000 CAD.

3. Activities and Deliverables

The principal investigators funded under this effort will be expected to engage in the activities and provide the specific deliverables listed below, which will help to demonstrate project progress and success:

- Progress reporting, including periodic conversations via teleconference and written reports upon request
- Dissemination of knowledge through publications in peer-reviewed literature, etc.
- A final report that captures a clear assessment of the potential impact of the project; instructions for reporting will be provided to successful grant recipients. This report will also identify social, cultural and commercialization barriers to implementation, and an initial plan for delivering the intervention at scale that addresses these barriers.

In addition to engaging in investigative activities related to their proposed project, grantees will be expected to:

- Where appropriate, actively participate in meeting(s) that bring together grantees to share learning and best practices
- Commit to Grand Challenges Canada's Global Access and Ethics policies (see <http://www.grandchallenges.ca/resources/>)
- Participate in public engagement activities.

4. Rules and Guidelines

The Canadian Institutes of Health Research oversees the peer review process, and the Grand Challenges Canada Board of Directors makes the final funding decisions.

4.1 Eligibility Criteria

	Canadian Based Innovators	Low- and Lower-Middle-Income
Academic qualification	<ul style="list-style-type: none"> • PhD • Health professional degree (MD, RN, ND, Chiropractor); MDs must have completed residency training at the time of application • DVM • LLB • LLM • MPH • MBA 	<ul style="list-style-type: none"> • Masters degree • PhD • Health professional degree (MD, RN, ND, Chiropractor); MDs must have completed residency training at the time of application • DVM • LLB • LLM • MPH • MBA
Stage in Career	Open	Must be within 10 years of any degree shown above at the time of taking up the award (Degree must have been received after September 1, 2002).
Affiliation	Mandatory Primary institution based in Canada	Mandatory Primary institution based in a low or lower middle income country
Collaborator	Mandatory Must have a collaborator based in a low- or lower-middle-income country (existing and/or new collaborations are equally encouraged, particularly those that will bring additional components of Integrated Innovation to your project: scientific/technological, social and business innovation)	Encouraged Existing and/or new collaborations are encouraged, particularly those that will bring additional components of Integrated Innovation to your project (scientific/technological, social and business innovation).
Mentor	Encouraged	Mandatory (mentor can be from any country)

	Canadian Based Innovators	Low- and Lower-Middle-Income
Public Engagement	Mandatory Be willing to engage the public on their project and, more generally, on global health topics. Must submit a video	Mandatory Be willing to engage the public on their project and, more generally, on global health topics. Video preferred but other visual representation including power point acceptable.
Co-Funding	Not required but encouraged	Not required but encouraged (applicants from G20 countries who apply must have at least 50 % co-funding).

4.2 APPLICATION INSTRUCTIONS

The full proposals will consist of:

- a brief written proposal
- applicant *curriculum vitae* (CV)
- two-minute video explaining the target global health problem, the proposed solution, and why it is a creative, bold and innovative approach. Applicants from low and lower middle income countries may submit other visual representation including power point in place of video.

Application instructions and forms are posted on the Grand Challenges Canada website (<http://www.grandchallenges.ca/grand-challenges/gc1-stars-program-information/>). Applicants can apply online through the application website, which will become available at a later date.

Both the application and the video can be submitted in either English or French, or both. We will put the videos on a public website for public viewing and voting.

The video must not exceed two minutes; **any videos that are longer than two minutes will be truncated at the two-minute mark.**

These videos will be submitted to Grand Challenges Canada as applications for its *Stars in Global Health* program. Grand Challenges Canada does not endorse the content of these videos and takes no responsibility for the accuracy of their content or the process by which they were filmed.

Please note the applicants are responsible for notifying their affiliated organization/institution(s) upon application to the Stars in Global Health program.

4.3 REVIEW PROCESS

The peer review process will be overseen by the Canadian Institutes of Health Research (CIHR). Each Peer Review Committee will include science/technology, social and business experts from high-, middle- and/or low-income countries. Each Committee will advise on the merit of proposals based on the evaluation criteria (see Section 4.5). Proposals will be evaluated and ranked only with respect to the other proposals submitted to the same stream of funding. The Committee's funding recommendations will be forwarded by CIHR to Grand Challenges Canada. The final selection decisions will be made by the Board of Directors of Grand Challenges Canada.

4.4 APPLICATION SCHEDULE

Please see www.grandchallenges.ca for application guidelines and submission instructions. Completed proposals must be submitted by 3:00 p.m. Eastern Daylight Time on September 5, 2012.

4.5 EVALUATION CRITERIA

1. **Boldness and Creativity**

Is the proposed idea innovative and bold? Is it "outside the box"? Does it have the potential to leap-frog conventional approaches? Can the innovation and delivery mechanisms be readily implemented in developing countries to improve global health? Is the proposal creative enough to have the potential to tackle the problem from a different angle, in order to make a substantial impact on a global health problem?

2. **Integrated Innovation**

Does the proposed solution integrate scientific/technological, social and business innovation? Is the approach truly novel and a departure from incremental or evolutionary improvements over current approaches?

3. **Global Health Impact**

Is the proposal likely to have a significant impact on global health? Does the proposal address a concern of priority of resource-poor countries? Are the proposed activities likely to have a positive impact on the health of the proposed target population? Does the proposal clearly explain the pathway to impact, including how it will save lives or reduce disability?

4. **Technical Merit/Execution Plan**

Is the proposed concept and approach based on sound scientific analysis and technical rigour? Is the proposed proof of concept appropriate, feasible and technically sound? Are feasible activities set out for the 12-month timeline of a Phase I grant? Does the approach represent an efficient use of resources? Does the environment in which the work will be performed contribute to the probability of success? Does the approach take advantage of unique opportunities, including partnerships with industry?

5. Public Engagement

Is the applicant able to present their approach to the public in an engaging manner? Does the applicant state their willingness to engage the public on global health issues and their research in an ongoing and creative manner?

6. Investigator Potential

Does the applicant demonstrate the potential to be a world leader in global health? Scientific contributions to date, linkages with resource-limited countries and evidence of excellence in scholastic activities will be used as metrics of career potential. Are the proposed activities appropriate to the training and experience level of the principal applicant (and collaborators)? Does the applicant have the support of a mentor who is capable of facilitating career development in global health research?

4.6 Allowable Costs

Grant funds may be used for the following cost categories:

1. Personnel: *Please note, salary support is an allowable cost.*
2. Travel
3. Consultants
4. Direct Supplies
5. Equipment: *Please note, partial or full support for equipment may be requested. Funding for infrastructure will be limited.*
6. Other Research Costs
7. Sub-grants/Sub-contracts
8. Indirect costs: *Please note, 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 (Items 1 to 7 outlined above). This amount will be in addition to the \$100,000 CAD of direct costs (i.e., total value of the grant will be \$100,000 + 13% = \$113,000 CAD).*

Please provide a budget estimate according to the categories outlined above. At least 30% of the budget and activities **MUST** be spent/carried out in a developing country/countries.

Also note that proposals with thoughtful and efficient use of resources will be preferred over proposals representing comparable efforts that do not have the same value for the investment. In some circumstances (e.g., rapidly changing technologies), subcontracting specific project activities to an outside institution with the infrastructure and expertise to deliver results may be considered advantageous over establishing in-house capacity.

4.7 PRIVACY NOTICE

To help us in the evaluation and analysis of projects, all proposals, documents, communications and associated materials submitted to 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 Letters of Intent 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 at stars@grandchallenges.ca.

4.9 INTELLECTUAL PROPERTY

The outputs of this program may lead to innovative solutions, such as technologies, services and/or products, to promote global health in developing countries. The successful development and deployment of these outputs 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. Accordingly, 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 that develop may play an important role in achieving the goals of this program. Grand Challenges Canada’s Global Access Policy will guide our approach to intellectual property, and we urge all applicants, even at the Letter of Intent stage, to consider their willingness to submit a full

proposal in compliance with the Grand Challenges Canada Global Access Policy, the guiding principles of which are as follows:

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

Grantees will be required to commit to Grand Challenges Canada's Global Access Policy for all outputs relating to this program. For further information, please refer to Grand Challenges Canada's Global Access Policy at <http://www.grandchallenges.ca/resources/>.

4.10 RIGHTS OF GRAND CHALLENGES CANADA

Grand Challenges Canada reserves the right, in its sole discretion, to:

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. If insufficient quality proposals are received, award a fewer number of grants than set out above.
4. Award grants with different funding amounts and with different durations than set out above.
5. Verify any information provided by applicants through independent research or by contacting third parties deemed to be reliable by Grand Challenges Canada.
6. Use video or other visual representation on the Grand Challenges Canada website for public engagement.
7. Design Phase II to link it 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.¹
2. Research involving animals must be conducted in a manner that ensures their humane care and treatment.
3. Certain research endeavours, 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 subgrantee 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 the grantee to agree that no funds will be expended to enrol human subjects until the necessary regulatory and ethical bodies' approvals are obtained. For further details, please see the Grand Challenges Canada Ethics policy at <http://www.grandchallenges.ca/resources/>.

Questions about the *Stars in Global Health* program or the application process should be addressed to stars@grandchallenges.ca. Responses to frequently asked questions will be posted on our website [grandchallenges.ca](http://www.grandchallenges.ca) periodically.

¹ Modified from the core principles articulated in the draft second edition of the Tri-Council Policy Statement (TCPS), <http://www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/chapter1-chapitre1/#toc01-1b>