

REQUEST FOR EXPRESSIONS OF INTEREST

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Grand Challenges Canada®
Grands Défis Canada

BOLD IDEAS WITH BIG IMPACT®

Sustainable Diagnostic Containment Laboratories

Request for Expressions of Interest

February 23, 2023

In partnership with

Canada



With the technical support of



With the implementation partnership of



Executive Summary

Diagnostic laboratories conduct routine disease surveillance, early detection and characterisation of disease events and support critical applied research to assist in detection, risk management, and prevention and control of infectious diseases. These laboratories handle and store pathogens potentially harmful to people, animals, or plants, thus creating safety and security risks, including the possibility of such pathogens being acquired and used as bioweapons. Outbreaks of high-consequence infectious diseases, whether naturally occurring or the result of laboratory accidents and / or deliberate release of pathogens, can have severe health, economic and security impacts. The SARS CoV-2 pandemic focused global attention on pandemic preparedness and the role of containment and diagnostic capabilities to detect and monitor outbreaks more effectively. The pandemic also highlighted how an outbreak in one country can quickly lead to outbreaks in other countries, and that national diagnostic laboratories contribute to global public good.

While cost-effective and sustainable diagnostic laboratories are essential to global health, safety, and security, diagnostic laboratories in many low- and middle-income countries (LMICs) face serious operational and capacity constraints, which undermine their performance and increase safety and security risks. In an effort to find a solution to the critical problems faced by diagnostic containment laboratories, the World Organisation for Animal Health (WOAH), Global Affairs Canada (GAC), and other members of the G7-led Global Partnership Against the Spread of Weapons and Materials of Mass Destruction have been actively pursuing the issue of diagnostic laboratory sustainability for over a decade. Several elements of many conventional laboratories are unsustainable in low-resource settings, including a physical laboratory design that has not been adapted to local contexts and cannot be maintained by local stakeholders. For example, high demands of expensive and often unreliable energy, equipment maintenance, consumables, clean water, air for laboratory operations and appropriate management of biohazardous waste and storage of biological material continue to pose significant challenges to sustainability. Extensive consultation with diagnostic laboratory stakeholders globally has made it apparent that current technological solutions are typically not fit for purpose in low-resource settings- namely, LMICs. Therefore, a Grand Challenge approach is now being pursued to address the issue of unsustainable diagnostic laboratories in a fundamentally different way.

A Grand Challenge for Sustainable Diagnostic Containment Laboratories will seek bold ideas to reimagine the physical laboratory in order to reduce ongoing operational and maintenance costs and allow sustainable, safe and secure handling of high-consequence pathogenic materials whilst maintaining and / or optimizing core functions of a diagnostic laboratory in LMICs. The purpose of this **Request for Expressions of Interest** (or “RFEI”) is to solicit innovative ideas on how to reduce the ongoing operating costs of containment laboratories, without compromising biosafety and biosecurity. Areas of focus include end-to-end laboratory concepts including design / construction, laboratory operations, and business models for ownership and utility of laboratory functions sustained by local leadership. Historically, innovation has been transferred from other fields into the laboratory sector. This Grand Challenge will promote similar

transfers, with an emphasis on sustainability. Participants from other industries are encouraged to respond to this call.

The ultimate goal of this RFEI is to create a pool of innovative ideas that may be shortlisted for funding consideration based on the overall project's review criteria. Innovators from organizations based in LMICs and / or innovators with lived experience of these contexts are highly encouraged and will be prioritized. Others are strongly encouraged to demonstrate how they plan to meaningfully engage and partner with local stakeholders in their target implementation country / countries.

APPLICATION DEADLINE: 2:00 pm EDT (6:00 pm UTC) April 19, 2023

Proposals will not be accepted after this date and time.

Due to processing times, you MUST register for a Fluxx account no later than 11:59 pm EDT April 12, 2023 (3:59 am UTC April 13, 2023). Account registrations received after this date and time will not be processed. If you have an existing Fluxx account, there is no need to re-register.

To respond to this RFEI, applicants MUST use the online application form provided, which is ONLY accessible via Grand Challenges Canada's Fluxx Portal <<https://gcc.fluxx.io>>. Existing users should login to their account and new users must register for an account on the main application portal on Fluxx. (See Section 3.2 *Instructions for Application Portal*.)

For technical assistance with registration or the online application, contact Grand Challenges Canada's Fluxx Technical Support team at: <http://www.grandchallenges.ca/fluxxsupport/>

Email sdl@grandchallenges.ca with 'Request for Expressions of Interest' in the subject line for questions not answered in the supplemental Frequently Asked Questions (FAQ) document.

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1. Introduction

1.1 GRAND CHALLENGES CANADA

GRAND CHALLENGES CANADA / GRANDS DÉFIS CANADA (“**Grand Challenges Canada**”) is dedicated to supporting **Bold Ideas with Big Impact®**. With funding from a variety of government partners and organizations, including Global Affairs Canada, our mission is to support innovation that saves and improves the lives of the most vulnerable in LMICs and Canada. Our vision is a world in which innovation accelerates the achievement of the United Nations’ Sustainable Development Goals.

One of the largest impact-first investors in Canada, and with a feminist investment approach, Grand Challenges Canada has supported a pipeline of over 1,400 innovations in 98 countries. Grand Challenges Canada estimates that these innovations have the potential to save up to 1.78 million lives and improve up to 64 million lives by 2030.

Grand Challenges Canada is hosted in Toronto at the Sandra Rotman Centre at the University Health Network.

For more information, please see: <http://www.grandchallenges.ca/>

1.2 THE PARTNERSHIP

For over 10 years, the UK International Biosecurity Programme, GAC, WOA, the World Health Organization (WHO) and Chatham House have partnered with a global network of animal and public health experts to improve the sustainability of diagnostic laboratories. Their scoping efforts have identified myriad interdependent factors that challenge the sustainability of laboratories, with adverse impacts for health, security, and economies. The complexity of this issue has demanded a multi-partner, multi-sectoral and multipronged program of work to devise innovative solutions.

As part of that program of work, WOA, with funding support from GAC’s Weapons Threat Reduction Program and technical support from The Pirbright Institute, are partnering with Grand Challenges Canada and our implementation partners at Science for Africa Foundation to explore the application of a Grand Challenge approach to identify innovations that seek to reinvent the laboratory, making it fit-for-purpose in resource-limited contexts globally.

This RFEI is part of a phased approach to the potential development of a full Grand Challenge for Sustainable Diagnostic Containment Laboratories. The current Phase I seeks to determine the feasibility, scope and parameters of the Grand Challenge. A potential Phase II of this work would then seek to fund proposals, such as those applying to the RFEI, to develop their innovative ideas further.

1.3 THE PROBLEM

Public and animal health systems rely heavily on infectious disease diagnostic laboratories to support routine disease surveillance, as well as early detection / characterisation and response to disease events. Such disease events are most commonly due to endemic diseases or naturally occurring outbreaks, but could also result from emerging diseases, accidental release or the deliberate spread of disease by terrorists or state-based biological weapons programs. Infectious disease outbreaks directly impact human health, animal health, food safety and food security, and can also have serious consequences for trade (in animal and plant products), tourism, the wider economy and national and international security. Sustaining the core functions of these diagnostic laboratories in a way that maintains high standards of biosafety and biosecurity is a prerequisite for continued progress against Sustainable Development Goals in health and the economy, and for maintaining international peace and security.

Health systems in LMICs are particularly vulnerable to the risks of disease events and spread. Diagnostic laboratories for high-consequence pathogens, which are critical to address this risk in LMICs, face complex and persistent technical and systemic barriers to sustainability, encompassing building design and construction as well as operational issues (including equipment maintenance and availability of reagents and other consumables, maintaining skills and competencies of staff, and policy challenges, including inadequate operating budgets and lack of political support). Specific technical challenges include interruptions to or excessively costly power supply, inadequate access controls (or lack thereof), inability to safely dispose of dangerous waste, poorly maintained or dysfunctional equipment (including lack of access to spare parts or skilled workers for certification, maintenance or repair), and an inability to safely and securely store biological material. Some of these problems have been exacerbated by the construction of facilities that are expensive to operate and difficult to maintain in low-resource environments¹.

In the past decade, there has been some evolution in the design and implementation of diagnostic laboratories. WOH and the WHO, which set international standards for diagnostic laboratories and promote compliance with these standards (including through dedicated capacity building programs, such as Laboratory Twinning), have adapted their standards to biosafety and biosecurity to embrace laboratory biological risk management. Likewise, the Maputo Declaration of 2008 advocated global stakeholder and national government commitment and support, along with harmonization of laboratory systems through development of comprehensive national laboratory strategies and policies. Accreditation initiatives, such as the WHO's 2009 Guide for the Stepwise Laboratory Improvement Process Towards Accreditation framework, have encouraged broad adherence to international standards and encouraged performance-based financing initiatives and cross-assessment for peer-to-peer learning between country laboratories and increased regional capacity. Other initiatives, such as the Signature Initiative to Mitigate Biological Threats in Africa - an innovative health-security

¹ <https://www.woah.org/app/uploads/2021/03/oie-sust-labs-report-final.pdf>

collaboration between the Global Partnership and the Africa Centres for Disease Control and Prevention- have focused efforts on biosafety, biosecurity, disease surveillance and training laboratory personnel.

There remains great opportunity, however, for open innovation around laboratory infrastructure itself to enhance sustainability in LMICs². Existing initiatives addressing laboratory safety and security in LMICs have to date been unsuccessful in fundamentally reducing the reliance on expensive, complex and difficult-to-maintain infrastructure that exceeds available local financial and technical resources for operation and may not meet local epidemiological needs. Innovation in the physical laboratory space to sustain the functions of diagnostic laboratories to operate safely and securely in low-resource settings would not only strengthen global health security but could also contribute to increased agricultural productivity, food security, livelihoods, economic prosperity, and animal and human health.

2. Program Scope

2.1 AREAS OF FOCUS

A Grand Challenge for Sustainable Diagnostic Containment Laboratories will seek bold ideas to reimagine the physical laboratory in order to reduce ongoing operational and maintenance costs and allow sustainable presence of safe and secure handling of high-consequence pathogenic materials³, whilst maintaining and / or optimizing core functions of a diagnostic lab in LMICs.

With this Request for Expressions of Interest, Grand Challenges Canada wishes to identify innovations in the following potential areas that result in sustainable, cost-effective means to handle high-consequence pathogens safely and securely in resource-limited contexts:

1. Laboratory end-to-end concepts and design, including innovations that reduce reliance and demand on the resource-intensive components (energy, clean water and air, waste disposal and bio banking) of current diagnostic laboratories
Examples include human-centred design and architecture, ways to minimize power demands of high containment facilities, use of inactivation methods to reduce biosafety requirements, waste reduction, air filtration etc.
2. Laboratory operation that delivers the functions required for high-consequence pathogens to be handled safely and securely, bridging the need for high intensity operation in crisis times with business-as-usual operations in standard local operating conditions

² While the emphasis is on identifying sustainable solutions for LMIC, there is potential for the resulting solutions to be applied in developed countries as well.

³ For the purposes of this RFEI, “high-consequence pathogenic materials” refers to materials listed in the Australia Group (AG)’s Human and Animal Pathogens and Toxins Control List, the AG’s Plant Pathogens Control List, plus “Pathogen X”.

Examples include innovation in operation flow, space requirements, reduction of maintenance cost and / or expertise as well as improvement of existing operations.

3. Business models for ownership and utility of laboratory functions sustained by local leadership

Examples include business models to improve financial sustainability, alternate uses of space and facilities that match the local needs and priorities.

While a proposed solution may address only part of the system, reimagined laboratories will ultimately need to be able to provide the following functions:

- Safe and secure cold storage (-4°C, -20°C and -80°C) of biological material (diagnostic samples, pathogens, cell lines, reagents), or alternative solutions;
- Receipt, handling and processing of various sample specimens;
- Conduct a minimum range of diagnostic and characterization procedures according to national, regional / international disease situations and priorities;
- Safe shipment of samples and biological material to reference labs in compliance with international standards;
- Safe inactivation and disposal of contaminated waste; and
- Meet applicable quality assurance and safety requirements.

Applicants will be required to describe how the proposed innovation improves sustainability of diagnostic containment laboratories in the scope described above.

2.2 INNOVATION

As we expect applicants to address issues that are multifaceted, interconnected, and complex, we do not expect all proposed ideas to be entirely unique. Rather we understand that many of the Expressions of Interest may consist of more standard innovations that are, for the first time, being approached from an explicitly intersectoral perspective. If the solution itself is not particularly novel or bold, the applicant will be expected to satisfactorily describe why implementing it in a new context would be beneficial or how the implementation approach itself is particularly original and promising.

Projects are encouraged to adopt an Integrated Innovation® approach that coordinates scientific / technological, social and / or business innovation, to develop solutions to complex challenges. This does not discount the singular benefits of each of these innovation types, but instead highlights the powerful synergies of aligning any of the three. Therefore, your solutions should include any combination of the following three areas:

- **Scientific / technological innovation** – has a base in the psychological, natural, health or behavioral sciences or in engineering or economics; can be simple as there is no requirement for high-tech solutions.

- **Social innovation** – recognizes and / or addresses the broader social, structural and / or political determinants of health, with a particular focus on gender and intersectional inequalities; addresses local and / or cultural contexts that factor into implementation and scaling.
- **Sustainability / business innovation** – maximizes the value, relevance and unique quality of the solution to create demand and financial sustainability; addresses barriers to affordability and accessibility.

2.3 FUNDING AND COSTS

The RFEI does not constitute an application for immediate funding. However, Expressions of Interest will be used to inform the feasibility and scope of a full Grand Challenge under a Phase II which may include funding specific projects. In such a potential Phase II, innovators that surface as top ranked innovations will be considered for funding.

No compensation of any kind will be advanced by Grand Challenges Canada or by any of the funding partners listed above to applicants under the RFEI. The applicant will be responsible for all costs and expenses incurred in the preparation and submission of an Expression of Interest.

2.4 GEOGRAPHIC SCOPE

To be considered under this RFEI and eligible for any potential funding in Phase II, proposed innovations must be suitable for and intended to be implemented / tested in LMICs⁴, with an initial emphasis on Africa.

2.5 TARGET USERS

The target users of solutions funded through this call are unserved and underserved communities in LMICs.

2.6 TEAM LEADERSHIP

To achieve impact at scale, bold ideas need to be championed by effective, results-driven leaders with the capacity to convene and engage with key influencers. Multidisciplinary and cross-sector teams are strongly encouraged. Effective project teams need experience, or a plan to engage relevant expertise, in:

- The issue they are seeking to address;
- Monitoring and evaluation;

⁴ <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

- Data analysis and statistics;
- Business and / or public sector engagement; and
- Working in or partnership in the implementation region / country.

Applicants responding to the RFEI should ensure they have the legal capacity to enter into a contract with Grand Challenges Canada, or where applicable a supporting partner government or organization, in the event they are invited to submit a proposal for funding in the context of a potential Phase II Grand Challenge for Sustainable Diagnostic Containment Laboratories program. Grand Challenges Canada does not fund individuals, sole-proprietorships, partnerships, unincorporated trusts or any entity that does not have the legal capacity to enter into a contract.

2.7 WHAT WE WILL NOT CONSIDER

We are NOT looking for innovations in:

- Laboratory personnel training; or
- Specific diagnostic equipment or assays for specific pathogens.

Grand Challenges Canada will not consider Expressions of Interest detailing:

1. Projects establishing proof-of-concept of innovations for which the core intellectual property rights are owned by a third-party institution, unless, in the event that the applicants are invited to submit a proposal for funding in the context of a potential Phase II Grand Challenge for Sustainable Diagnostic Laboratories program, that third party:
 - a. Grants the applicant sufficient license rights to the innovation to permit eventual scaling in LMICs; or
 - b. Signs an undertaking to comply with Grand Challenges Canada's Sharing and Access for Impact Strategy.
2. Projects similar to ones Grand Challenges Canada has already funded – please review our searchable database of funded innovations for more information on previously funded projects.
3. Projects NOT intended to be implemented in an LMIC⁵.
4. Projects that are focused strictly on capacity building and / or advocacy and do not involve the testing of an innovative proof-of-concept.

3. Application and Review Process

3.1 APPLICATION AND REVIEW TIMELINE

All Expressions of Interest submitted in response to this RFEI will undergo a multi-step expert review process. This review process will yield an analysis of the landscape of

⁵ <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

potential innovative solutions to the problem of sustainable diagnostic containment laboratories, which will inform the decision to implement a full Grand Challenge for Sustainable Diagnostic Containment Laboratories. The review process will also yield a shortlist of most promising innovations based on criteria outlined in this RFEI. Grand Challenges Canada and its partners may invite innovators to submit full proposals for funding on the basis of this analysis and shortlist, once the Phase I feasibility study has concluded and upon the decision to implement a full Grand Challenge for Sustainable Diagnostic Containment Laboratories in Phase II.

Key Dates	Event
April 12, 2023 at 11:59 pm EDT (3:59 am UTC April 13, 2023)	Deadline to <u>register for a Fluxx account</u> (https://gcc.fluxx.io) Note: If you have applied for funding in the past, you already have an account. If you do not remember your password, you can reset it and gain immediate access to the Portal. Simply click on <u>Reset or create password</u> .
April 19, 2023 at 2:00 pm EDT (6:00 pm UTC)	Expression of Interest submission deadline
Fall 2023	Anticipated decision on Phase II of a Grand Challenge for Sustainable Diagnostic Containment Laboratories program Feedback on Expressions of Interest and potential notification of top-ranked innovations for funding discussions, subject to Phase II decision

3.2 INSTRUCTIONS FOR APPLICATION PORTAL (FLUXX)

Applicants must use the online application provided, which is only accessible via the Grand Challenges Canada’s Fluxx Portal (<https://gcc.fluxx.io>). You **MUST** register for an account by 11:59 pm EDT April 12, 2023 (3:59 am UTC April 13, 2023).

Grand Challenges Canada cannot provide Expression of Interest questions via email and Expressions of Interest submitted through email will **not** be considered. Google Chrome is the recommended browser (DO NOT use Internet Explorer).

Please note: The application form must be submitted using the account of an eligible individual and an eligible organization / entity. Once an application is created, the details from the account used will be displayed (as Project Lead and applicant entity) on the application form; these cannot be changed without contacting Grand Challenges

Canada. Only applications submitted by accounts that meet eligibility criteria will be considered and reviewed.

1. Go to <https://gcc.fluxx.io>.
Existing users:
 - a. If you have applied for funding in the past, you **already** have an account and do not need to register for a new one.
 - b. If you do not remember your password, you can reset it and gain immediate access to Fluxx – simply click on the *Reset or create password* link.
 - c. If your email address or organization affiliation has changed since you last registered, you will need to register for a new account.*New users:*
 - a. If you are a new user, click the *Create an account* button. It will take at least one (1) business day but could take up to three (3) business days to process your request. Be sure to do this as soon as possible, so you have sufficient time to review and complete the application.
 - b. Once your information has been processed, you will be emailed a username and a URL link to set up a password of your choice. If you do not receive your login email, check your junk / spam folder. Click on the URL link provided in the email to input a password of your choice.
2. Once you have your account details, input your username and password. Click *Sign in*.
3. Click on the *Welcome/Bienvenue* link on the left menu, navigate to the Sustainable Diagnostic Containment Laboratories section, click on the *Start an Application* button.
 - a. You can *Save* your work at any time and return to it later by logging into your account and clicking on *Drafts*, then clicking on *Edit*.
 - b. When you are done editing, save your form and click the *Submit* button. Once you submit, you will no longer be able to edit.
 - c. **You MUST submit your Expression of Interest via Fluxx by 2:00 pm EDT (6:00 pm UTC) April 19, 2023.**

The steps above (including screen shots), are detailed in the **Fluxx Quick Reference Guide**. The Fluxx Quick Reference Guide describes how to create a Fluxx account, how to reset the password on an existing account and other helpful tips on navigating Fluxx and the application form. If you still require technical assistance with registration or the online application, you may also *Submit a Ticket*. Please visit <https://www.grandchallenges.ca/fluxxsupport/> to access the **Fluxx Quick Reference Guide** and / or to *Submit a Ticket* to Grand Challenges Canada's Fluxx Technical Support Team.

Innovator Toolbox

To inform their Expressions of Interest, applicants are encouraged to access Grand Challenge Canada's online [Innovator Toolbox](#), which contains materials to help researchers and innovators to develop their projects and to plan for how their innovation can be sustainably scaled and have global impact.

3.3 ELIGIBILITY CRITERIA

Grand Challenges Canada will screen Expressions of Interest on the basis of the eligibility criteria outlined below. Expressions of Interest that do not meet the eligibility criteria will be removed from the review process.

1. Entities eligible under this Request for Expression of Interest include social enterprises and other legally recognized organizations (such as non-governmental organizations, non-profit, for-profit, and limited liability companies, as well as research / academic institutions, or any other appropriately registered legal entity) that:
 - Is active (status) and in good standing with their respective registration body, if applicable⁶;
 - Is capable of entering into a funding agreement with Grand Challenges Canada or, where applicable, a supporting partner government or organization;
 - Can receive foreign funding and administer grant funding; and
 - Can successfully perform activities in their technical area.These are ineligible:
 - Individuals;
 - Sole proprietorships;
 - Unincorporated trusts and partnerships;
 - Government organizations; and
 - United Nations country offices.
2. Applications must be submitted by the eligible applicant entity.
3. Applications must include all required information and address all questions.
4. Applications must be submitted in either English or French.
 - Note that quality of the English or French language will not play a factor in the evaluation of the Expression of Interest unless it affects the clarity of the information.
5. The Project Lead listed on the application must be affiliated with the applicant organisation.
 - The Project Lead should be the person with the highest level of responsibility working directly on the project and will be the point of contact for Grand Challenges Canada during the review and negotiation process, unless another contact is added to the application ('reporting contact' field).
6. A Project Lead can only be listed on one (1) application.

⁶ The following must apply to the entity under its current name:

- Where relevant, required filings (such as regular reports or tax filings) related to institutional incorporation or registration are up to date.
- The registration body in question should be, in jurisdictions where relevant, the governing authority for your entity type according to the country's laws.

- Single institutions can submit multiple applications, but each needs a different Project Lead.
7. Grand Challenges Canada may, at any time and at their sole discretion, modify eligibility criteria with respect to an applicant, Project Leads and / or eligible countries, to the extent that such modifications do not materially undermine the review process.

Please note:

- Project Leads must get their affiliated institution's sign-off before submitting any Expression of Interest.
- Grand Challenges Canada must approve any change in Project Lead, applicant organization or country of implementation from the originally submitted application.
- Given the inextricable linkage of sustainability with localization (how solutions are locally owned, contextualized, operated and/or designed), Grand Challenges Canada particularly encourages Expressions of Interest from the following:
 - Innovators from locally-led organizations based in LMICs;
 - Innovators with lived experience of the context;
 - Innovators with meaningful partnerships with local partners; and
 - Innovators who are able to successfully demonstrate a plan to meaningfully engage local stakeholders in their target implementation country / countries.

Eligibility criteria for this RFEI reflect a minimum set of eligibility criteria for innovators to receive funding from Grand Challenges Canada, in the event they are invited to submit a full proposal for funding in the context of a Phase II Grand Challenge for Sustainable Diagnostic Containment Laboratories program. Eligibility criteria for Phase II funding is not yet finalized. Eligibility to respond to the RFEI does not guarantee an innovator / institution will be eligible to receive funding from Grand Challenges Canada in a potential Phase II.

3.4 INNOVATION SCREEN

Expressions of Interest that are deemed eligible will move forward to the Innovation Screen stage. During this stage, the Project Summary section of the Expression of Interest will be assessed by Grand Challenges Canada staff and external volunteers, based on the below criteria. ONLY a subset of questions (identified in the application form) will be read at this stage to determine if Expressions of Interest will proceed to the next evaluation step, so applicants should ensure these questions are adequately addressed.

Expressions of Interest are scored against the below criteria using only a subset of questions (identified in the application form). 'Relevance' and 'Innovation' criteria categories carry equal weight.

1. Relevance (Yes/No)

- Does the proposed idea address the sustainable operation of diagnostic containment laboratory infrastructure, as defined in this RFEI?
 - Does the Expression of Interest clearly explain how the proposed solution laboratory will ensure biosafety and biosecurity of diagnostic containment laboratories?
 - Does the Expression of Interest explain how the proposed solution will enable and / or maintain the core functions of a diagnostic containment laboratory, as articulated in this Request for Expressions of Interest?
 - Is the proposed idea designed for laboratories in LMICs that are not served by current approaches?
2. **Innovation** (Scored 1–5)
- Is the proposed idea bold and does it demonstrate more than an incremental improvement over current approaches?

3.5 EXTERNAL PEER REVIEW

Expressions of Interest that are deemed relevant and score highly at the Innovation Screen stage will move forward to the External Peer Review stage. At this stage, an independent expert peer review panel of external scientific / technological, social and business / sustainability experts will review the full applications using the criteria below. This review will yield a shortlist of most promising innovations which may inform specific invitations for funding in a potential Phase II Grand Challenge program.

1. **Impact** (weighted for 30% of score)
 - Does the proposed solution have the potential to address the lack of sustainability of diagnostic containment laboratory operations and maintenance, as defined in this RFEI?
 - Is the proposed idea designed for and with communities in LMICs that are not served by current approaches?
 - Does the proposed idea have the potential to fundamentally transform sustainability of diagnostic containment laboratory operations?
 - Is there potential for scale and sustainability after proof-of-concept is established?
2. **Innovation** (weighted for 40% of score)
 - Is the proposed innovation bold and does it demonstrate more than an incremental improvement over current approaches?
 - Does the proposed idea integrate scientific / technological, social and / or business innovation?
 - How clearly does the proposed solution address at least one of the barriers to the sustainability of diagnostic containment laboratories as defined under Areas of Scope in this RFI (Section 2.1)?
3. **Localization** (weighted for 10% of score)
 - Does the Project Lead self-identify as local to the context for which the innovation has been designed / in which the innovation is proposed to be

- delivered, and / or is the institution at which the Project Lead is based local to this context?
- Is there lived experience of the problem being addressed represented among the project team?
 - Are the project team and collaborators meaningfully engaged with local partners and / or stakeholders for sustainable implementation of the proposed solution?
4. **Leadership Capability to Champion Change** (weighted for 10% of score)
- Does the Expression of Interest convey the team's understanding of the value of an inter-sectoral approach to sustainability of diagnostic containment laboratories?
 - Are the Project Lead and key team members appropriately experienced to carry out the proposed scope of work?
5. **Project Execution Plan** (weighted for 5% of score)
- Is the project designed to demonstrate the innovative idea within the innovators' proposed implementation period?
 - Does the Expression of Interest describe how to engage local implementation partners to enable successful implementation of this project?
 - Is the project technically sound and feasible within the scope of sustainable diagnostic containment laboratories?
 - Does the project recognize potential risks and present potential mitigation strategies?
6. **Value for Effort** (weighted for 5% of score)
- Is the scope of the proposed work and the funds requested reasonable and commensurate with the proposal goals?

4. General Policies and Terms

4.1 SUBMISSION MATERIALS AND PRIVACY NOTICE

To assist in the evaluation and analysis of projects, all Expressions of Interest, proposals, documents, communications, and associated materials submitted to Grand Challenges Canada (collectively, "Submission Materials") may be shared with funding partners GAC, WOH, and / or with other funding partners, and may be publicly disclosed. By submitting any Submission Materials to Grand Challenges Canada, each applicant thereby grants to Grand Challenges Canada, GAC, and His Majesty the King in right of Canada ("His Majesty"), and WOH a worldwide, perpetual, irrevocable, non-exclusive, non-commercial, free of charge and royalty free license to use, reproduce, adapt, modify, improve, develop, translate, publish, disseminate, distribute, communicate to the public by telecommunication and display the Submission Materials, in whole or in part, in any form, media, or technology now known or later developed, including the right to authorize others to do such acts and the right to sublicense such rights to others, on the same terms. Each applicant also thereby waives any and all

moral rights that it has in the Submission Materials in favor of Grand Challenges Canada, GAC, His Majesty, WOAHA and each of their sub-licensees, successors, representatives, assigns, employees and agents.

The proposals will be subject to external review by independent subject-matter experts, advisors, and potential co-funders (the results of which will be confidential), in addition to analysis by staff. Please be advised that a copy of the external reviews for each submitted proposal will be shared with Grand Challenges Canada staff and may be disclosed to Grand Challenges Canada's Investment Committee.

Please carefully consider the information included in the Submission Materials. If you have any concerns about the disclosure of confidential or proprietary information (including information related to inventions), please advise as soon as possible and in any event prior to disclosure of such materials to Grand Challenges Canada. It is recommended 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.

Grand Challenges Canada will attempt in good faith to respect the confidentiality of information that is received in Submission Materials, if it is clearly marked "Confidential". Nonetheless, notwithstanding your characterization of any information as "Confidential", Grand Challenges Canada reserves the right to publicly disclose all information contained in Submission Materials as may be required by law, and as is necessary for potential co-funders, advisors, 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. Grand Challenges Canada expressly disclaims any and all liability that may arise from disclosure of confidential information contained in Submission Materials.

Privacy Notice

In the course of the submission, Grand Challenges Canada may collect personal information about some of a successful applicant's directors and officers, employees, Project Lead(s), and others engaged on the project. Grand Challenges Canada's Privacy Policy explains how Grand Challenges Canada collects, use, discloses, and protects the personal information that it collects and receives. By submitting any personal information about others, you represent and warrant that you are authorized to do so. If applicable law allows or requires you to supply the information without authorization, you represent and warrant that you have abided by that law and that it allows Grand Challenges Canada to receive and disclose the information under the Privacy Policy without any further action on the part of Grand Challenges Canada. You agree to indemnify and hold harmless Grand Challenges Canada against any failure by you to comply with the requirements set out here.

4.2 WARRANTY

By providing any Submission Materials, applicants represent and warrant to Grand Challenges Canada that they have the right to provide the information submitted.

4.3 INTELLECTUAL PROPERTY SHARING AND ACCESS FOR IMPACT STRATEGY

Grand Challenges Canada's Sharing and Access for Impact Strategy guides the organization's approach to intellectual property. The purpose of the Strategy is to outline how Grand Challenges Canada will work with innovators to: (1) help innovators achieve the greatest possible impact through sustainable, affordable, and as widespread as is appropriate, access to their innovations for the public good; and (2) enable responsible sharing of new knowledge and data they generate, in a manner that enables scale and sustainability, addresses (rather than perpetuates) inequities and power imbalances, and honours the diverse needs, priorities and values of self-determination of innovators and their communities.

Successful applicants in Phase II will be required to commit to compliance with the Grand Challenges Canada Sharing and Access for Impact Strategy; to develop an Access Plan for making their innovations meaningfully accessible to target beneficiaries in LMICs, meaning broadly and quickly available at costs that are reasonable in the context; and to sign a Sharing and Access for Impact Agreement with Grand Challenges Canada, in line with the guiding principles, applicable to the innovative solutions and project outputs supported by this program.

Furthermore, GAC (and other funders) shall retain the ability to use the intellectual property associated with a funded innovation for non-commercial purposes and receive an irrevocable, perpetual, world-wide license to that effect. Also, as the applicant's proposed project is part of an international assistance program, any intellectual property rights created by virtue of any contribution should only be asserted in a manner that promotes the interests and objectives of the overall project and maximizes the use of the products created.

4.4 RESEARCH ETHICS POLICY

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 by Grand Challenges Canada. For further details, please see the [Grand Challenges Canada Ethics policy](#).

4.5 COMMITMENT TO ENVIRONMENTAL SUSTAINABILITY, GENDER EQUALITY AND HUMAN RIGHTS

Grand Challenges Canada is committed to furthering the principles of environmental sustainability, gender equality and human rights-based approach as follows:

Environmental Sustainability: Grand Challenges Canada requires that applicants commit to ensuring that the innovation will not have significant adverse environmental effects including, but not limited to, long-term and cumulative effects. Applicants shall ensure that the management of environmental effects, including any analysis, is carried out in accordance with the environmental processes and requirements of Grand Challenges Canada. Where possible, applicants should incorporate having positive environmental effects throughout the project.

Gender Equality: Grand Challenges Canada is committed to furthering principles of gender equality in the innovations it funds and across the organization. Specifically, Grand Challenges Canada is supportive of the following objectives: (1) advancing women, girls, boys, men and LGBTQI+ people's equal participation as decision-makers in shaping the sustainable development of their societies; (2) promoting the realization of the human rights of all genders; and (3) reducing gender inequalities in access to and control over the resources and benefits of development. It is believed that supporting gender equality is an important objective in and of itself, and that by using a gender lens in the sourcing and management of development innovations, sustained impact will be bolstered.

Human Rights Based Approach: Grand Challenges Canada is committed to furthering a Human Rights Based Approach. This includes the recognition that inequality and marginalization deny people their human rights. This particularly includes the promotion of principles of participation, inclusion, equity, transparency, and accountability in an applicant's project.

4.6 RIGHTS OF GRAND CHALLENGES CANADA

This RFEI is part of a discretionary granting program. Submission of an Expression of Interest does not create a contractual relationship between the applicant and Grand Challenges Canada.

Furthermore, all applicants acknowledge that this may evolve and that all terms are subject to change. In particular, Grand Challenges Canada reserves the right, in its sole discretion and without notice, to:

1. Cancel this RFEI at any time and for any reason.
2. Amend and re-issue the RFEI at any time and for any reason. This RFEI is valid commencing on February 23, 2023 and supersedes any previous RFEIs of this nature. The terms and conditions of this RFEI apply to all Expressions of Interest submitted from February 23, 2023, going forward and may be replaced by a

- revised RFEI in the future. Grand Challenges Canada recommends checking for any revisions to the RFEI prior to the submission of your application materials.
3. Accept or reject any Expression of Interest that is non-conforming 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. No costs are allowable under this RFEI.
 4. Not consider an Expression of Interest based on performance on a previous Grand Challenges Canada grant or project or based on the award of a grant to the applicant for the same or similar research by one of Grand Challenges Canada's partners or collaborating institutions.
 5. Disqualify any Expression of Interest at any stage where there is an indication that the Expression of Interest was, in any way, plagiarized.
 6. Accept or reject any or all Expressions of Interest, regardless of an Expression of Interest's rating based on the evaluation criteria, with or without providing an explanation.
 7. Verify any information provided by applicants through independent research or by contacting third parties deemed to be reliable by Grand Challenges Canada and use that information to inform any of Grand Challenges Canada's eventual funding decisions.
 8. Modify eligibility and evaluation criteria, including but not limited to criteria assessed at the triage stage, at any time.
 9. Use video or other visual representation submitted by applicants on Grand Challenges Canada's website for public engagement.
 10. Not provide critiques or feedback regarding the reasons an Expression of Interest was or was not selected.

4.7 GOVERNING LAW

This RFEI and any resulting agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein. Each applicant agrees that this any and all disputes, actions or proceedings relating to this RFEI whether as to interpretation, validity, performance or otherwise, shall be subject to the exclusive jurisdiction of the courts of the Province of Ontario and each applicant and Grand Challenges Canada irrevocably attorn to the jurisdiction of the courts of such province.

4.8 RISK MANAGEMENT, SAFETY, ANTI-TERRORISM, ANTI-CORRUPTION AND ANTI-BRIBERY

Expressions of Interest must comply with all relevant Canadian legislation, as well as any applicable international anti-bribery and anti-terrorism legislation. Any person or organization named in Canadian or United Nations Security Council sanctions will not be funded. We may add to this list as more partners join the challenge. Innovators are to manage material risks.

Expressions of Interest for projects that include work in insecure locations must detail how they will manage the safety and security risks faced by people and assets. If selected for funding in Phase II, during negotiations innovators will be required to explain how they will avoid corruption and the diversion of funding from its intended purpose.

For example, during negotiations for funding in Phase II innovators will be asked to provide a description of the organization's policies and procedures to address conflicts of interest and financial or other irregularities, including without limitation, adequate procedures:

- Requiring the organization and its representatives to declare any personal or financial interest in any matter concerning the funded activities, and exclude that individual from the matter concerned;
- Identifying steps to investigate an irregularity; and
- A timely and appropriate plan of action to recover any funds that have been subject to proven fraud.

During negotiations for funding in Phase II, innovations will also be required to include a description of the organization's policies and procedures to adequately implement internal controls for preventing bribery, corruption, fraud, and other situations of misuse of funds.