



Department of Biotechnology
Government of India



IC-IMPACTS
Centres of Excellence
Canada

DBT – IC-IMPACTS JOINT CALL ON PORTABLE DIAGNOSTICS AND ANALYZERS

January, 2016

The Department of Biotechnology (DBT) and IC-IMPACTS Centres of Excellence (IC-IMPACTS) of Canada will jointly fund Indian-Canadian research and innovation collaborations.

Implementing Agencies

The Department of Biotechnology (DBT) and IC-IMPACTS Centres of Excellence, Canada, are the implementing organizations from the Indian and Canadian sides respectively. IC-IMPACTS Centres of Excellence is a not-for-profit organization established by the Federal Government of Canada through the Networks of Centres of Excellence Program to serve as a pan-Canadian agency responsible for the delivery of research programs in the areas of safe and sustainable infrastructure, integrated water management, and public health: disease prevention and treatment between Canada and India.

Potential projects will be funded by IC-IMPACTS in Canada, and by DBT in India. The joint projects must meet the requirements of the funding organizations. In India, the general funding terms of DBT will be applied. In Canada, the general funding terms of IC-IMPACTS and the tri-agency granting councils of Canada will be applied.

Cooperation Objectives

The DBT IC-IMPACTS partnership has been designed to strengthen existing, and stimulate new, innovation collaborations between researchers working in India and Canada and to stimulate entrepreneurial deployment of research outcomes into community contexts. Through this collaboration, IC-IMPACTS and DBT will support the innovation communities of Canada and India by each committing \$1.5 million (Canadian dollars / equivalent Indian Rupees) to the joint funding of collaborative research projects submitted through this joint call for proposals.

The partnership between DBT and IC-IMPACTS aims to achieve four objectives:

- To foster international research and innovation partnerships focused on initiatives that will have direct, deployable outcomes and technologies to benefit citizens in communities in India and Canada;
- To showcase Canadian and Indian research and industrial innovation to each nation and accelerate the transfer of knowledge and technologies;
- To develop innovation and knowledge transfer skills through the training of graduate, doctoral and post-doctoral students participating in research projects and through extended skill development activities focused on research excellence, entrepreneurial training, and knowledge transfer and commercialization expertise, thus producing the next generation of research innovators who have the essential skills to move research discoveries from laboratories into the community; and,



Department of Biotechnology
Government of India



IC-IMPACTS
Centres of Excellence
Canada

-
- To strengthen overall research and innovation relationships between Canada and India and through these partnerships extend Canadian and Indian innovation leadership.

Timetable for Call for Proposals

Launch of the Call: January 12, 2016

Deadline for Project Proposal Submissions: March 7, 2016 (4:30 pm PST)

Joint Research Projects – Priority Areas for Collaboration

There is a need for portable assays which bring the high quality diagnostics associated with a central lab to the patient. This call for proposals will focus on automated assays which can multiplex tests for a range of diseases in to a simple portable test. Tests should be based on easily collected sample types such as a finger stick of blood, saliva or urine.

A complete blood count measures multiple components and features within a blood sample and is a routine test to monitor overall health, as part of a medical diagnosis or to monitor treatment. In the developed world a CBC is a routine part of an annual medical exam. In emergency room admissions more than 50% of patients have some type of blood work carried out. White blood cell counts can give an indication of bacterial vs viral infection, and red blood cell counts can give an indication of anemia. Despite the real benefits of the CBC the instrumentation needed requires central laboratory facilities, trained technical support and is time consuming. This makes it unsuitable for deployment in a rural or remote setting.

Other bodily fluids, such as saliva can also be extremely effective in disease diagnosis. Saliva contains a number of biomarkers which make it particularly useful and amenable for multiplexed assays that can be used in point-of-care devices. Saliva has been well known to for indications of oral infections and oral cancers, but recent discoveries have led to its application in a growing number of areas including detection of antibodies to the Human Immunodeficiency Virus (HIV) and systemic diseases. Many interesting projects are unfolding exploring the ability of oral biomarkers now for chronic obstructive pulmonary disease, cystic fibrosis, TB, and Malaria, for instance. The collaboration between nanotechnology, microfluidic techniques and oral biology is yielding exciting and dynamic results and has the potential for major breakthroughs in providing portable and rapid diagnostics to improve care.

We are particularly interested in technologies, which can lead to miniature, portable, and cartridge based diagnostics and analyzers using bodily fluids such as blood, saliva or urine. In particular portable, field deployable devices and technologies which:

- Can perform a complete blood count at the point of
- Differentiate between viral and bacterial infection
- Provide portable detection system for Dengue, HIV, Hepatitis, Malaria and TB
- Aid in the detection of systemic disease
- Monitor the nutritional state of a patient (vitamin D, ferritin etc)
- Require low sample volume for application in infant health care



Department of Biotechnology
Government of India



IC-IMPACTS
Centres of Excellence
Canada

- Bring together multiple disciplines for innovative results

The Joint Call for Collaborative Research Innovation Projects in the area of “Portable Diagnostics and Analyzers” will support collaborative research projects focused on the development and evaluation of new diagnostics and analyzers in each of the following areas:

- Infectious Diseases
- Maternal and Infant Health
- Nutritional Deficiency
- Interdisciplinary Approaches and Platform Technologies

Joint Research Projects –Evaluation Criteria

The research projects funded in this call are expected to be of a high international standard that will lead to a technology or solution directly impacting the lives of Indian and Canadian citizens.

Indian-Canadian joint projects must be based on meaningful engagement, include a common project plan, and involve at least one researcher from Canada and one researcher from India. Student and HQP training is a mandatory component of all funded projects.

Research project proposals submitted to the Department of Biotechnology and IC-IMPACTS Centres of Excellence for funding through the “India-Canada Portable Diagnostics and Analyzers Call for Collaborative Research Innovation Proposals” competition will be evaluated against the following selection criteria:

- Alignment with priority areas for collaboration identified above under “Joint Research Projects – Priority Areas for Collaboration”;
- Relevance to Indian and Canadian national and community health challenges;
- Potential for research outcome to be deployed in remote and low-resource settings in India and Canada;
- Quality and originality of research program;
- Qualification and excellence of research team and proven record of successfully delivering prior research project objectives (Note: there must be a lead Indian and lead Canadian researcher for each research project submitted);
- Expected results and outcomes and appropriateness of budget strategy to achieve them;
- Potential for successful commercialization and/or community adoption of research outcomes;
- Training of highly qualified professionals;
- Inclusion of multidisciplinary aspects of the research program; and,
- Engagement of partners from academic, industrial, government, community sectors (Note: it is not a requirement to have non-academic partners on the research project however multi-sector partnerships will be evaluated more favorably. All partners participating in a research project must demonstrate meaningful engagement and commitment to the project).
- partnerships will be evaluated more favorably. All partners participating in a research project must demonstrate meaningful engagement and commitment to the project).



Department of Biotechnology
Government of India



IC-IMPACTS
Centres of Excellence
Canada

Application Instructions:

Research projects of **one (1) or two (2) years** in duration are eligible for funding.

Funding beyond the first year of the project will be contingent upon successful progress being made in the previous year as determined by the review processes in place by each funding organization.

Each project application must consist of a Canadian and Indian applicant (Principal Investigators) who together have developed a joint project proposal and project budget. The joint project proposal along with all supporting documentation required by each funding organization will be submitted to the “DBT-IC-IMPACTS Joint Call for Proposals” online application website at:

<http://ic-impacts.com/dbt/>

All document submission forms and information materials are accessible online at this same website address.

The online application will be automatically sent to both DBT and IC-IMPACTS together with all funding organization specific documents submitted as part of the online application process.

The budget documentation must clearly delineate funding being requested from DBT in support of Indian researcher participation and funding being requested from IC-IMPACTS for Canadian research participation. Cash and In-kind contributions from other collaborating partners, if any, must be clearly identified in the budget documentation.

Applicants are encouraged to contact their national funding organization before submitting their applications if they have any questions regarding the Call for Proposal or budget eligibility.

Eligibility

All Canadian Researchers eligible to receive funding from IC-IMPACTS and tri-council agencies in Canada are eligible to apply as Principal Investigators from Canada with an Indian Principal Investigator.

All Indian Researchers normally eligible to apply to DBT funding opportunities are eligible to apply as Principal Investigators from India with a Canadian Principal Investigator.

Review Process for Evaluation

All applications will be handled strictly confidentially. Proposals will be reviewed by experts.

Administration of Funded Projects

Successfully funded Canadian applicants will receive their funding from IC-IMPACTS; distributed using normal funding flows to researchers at Canadian universities by IC-IMPACTS. Canadian recipients of funds from IC-IMPACTS will be governed by the terms and conditions of IC-IMPACTS, the NCE Program and the tri-council granting councils rules and regulations for use of research funds.



Department of Biotechnology
Government of India



IC-IMPACTS
Centres of Excellence
Canada

Successfully funded Indian applications will receive their funding through the normal funding flow mechanisms of projects supported by DBT. Indian recipients of funds will be governed by the general terms and conditions of DBT.

Intellectual Property

DBT and IC-IMPACTS funded participants to the projects shall agree upon the ownership, access rights and exploitation of the intellectual property generated during the cooperation. The agreements shall be made in writing. The guidelines of the funding organizations should be followed when making the agreements. In minimum, a letter of intent between the collaborators should be included in the application stating the desire for cooperation and acknowledging that each participant has understood the general terms and conditions of the other project parties.

Further Information

INDIA

Dr. Shailja Gupta
Director

International Cooperation
Department of Biotechnology
Ministry of Science and Technology
Room No. 605, Block-2
CGO Complex, Lodhi Road
New Delhi-3 Tel: 91-11-24363748
Email: shailja@dbt.nic.in

Or

Dr. Sanjay Kalia
Scientist-D
Room No. 814, Block-2
CGO Complex, Lodhi Road
New Delhi-3
Email: sanjay.kalia@nic.in

CANADA

Dr. Nemy Banthia
CEO & Scientific Director
IC-IMPACTS Centres of Excellence
Tel: 604-822-9541
Email: banthia@civil.ubc.ca



Department of Biotechnology
Government of India



IC-IMPACTS
Centres of Excellence
Canada

Overview of Funding Organizations

Department of Biotechnology, Ministry of Science and Technology, Government of India <http://dbtindia.nic.in/>

DBT is one of the leading research organisations for biotechnology in India, and an important funding source for biotechnology. The mandate of DBT includes

- Promote large scale use of Biotechnology
- Support R&D and manufacturing in Biology
- Responsibility for Autonomous Institutions
- Promote University and Industry Interaction
- Identify and Set up Centres of Excellence for R&D
- Integrated Programme for Human Resource Development
- To serve as Nodal Point for specific International Collaborations
- Establishment of Infrastructure Facilities to support R&D and production
- Evolve Bio Safety Guidelines, manufacture and application of cell based vaccines
- Serve as nodal point for the collection and dissemination of information relating to biotechnology

IC-IMPACTS Centres of Excellence

<http://www.ic-impacts.com>

IC-IMPACTS (the India-Canada Centre for Innovative Multidisciplinary Partnerships to Accelerate Community Transformation and Sustainability) is the first, and only, Canada-India Research Centre of Excellence established through the Canadian Networks of Centres of Excellence (NCE). Created through the vision of three of Canada's leading universities - The University of British Columbia, the University of Alberta, and the University of Toronto - IC-IMPACTS is a pan-Canadian Centre that brings together a large international team of researchers, industry innovators, community leaders, government agencies, and community organizations from India and Canada, to work hand-in-hand to find solutions to the key challenges that affect the quality of life of millions of people in Indian and Canadian communities. The Centre's novel "partner-community" strategy strives to facilitate the effective and rapid mobilization of new technologies that will ensure holistic solutions are developed to improve water quality, increase the safety and sustainability of critical civil infrastructure, and improve health across both nations.