

**Program Guidelines for  
“2012/13 Food Safety  
Research and Innovation Program”**

## 1.0 Program Guidelines

### 1.1 Purpose

The “Food Safety Research and Innovation Program” (FSRIP) is designed to provide funding to address research gaps or opportunities in food safety. The intent of this food safety program is to contribute to the reduction of food borne illnesses through research that supports specific pathogen reduction throughout the food production continuum. Research should be limited to investigation of the following pathogens: *Listeria monocytogenes*, *Escherichia coli* 0157:H7 and other verotoxigenic *E. coli* (VTEC), *Salmonella* spp., and *Campylobacter* spp. This research is intended to build on Alberta’s already excellent reputation in food safety, creating long-term health benefits for Alberta’s population, and continuous improvement in the safety of Alberta’s food production system.

Alberta Innovates Bio Solutions (AI Bio) and Alberta Livestock and Meat Agency (ALMA) have set aside at least \$2.5 million to invest in this initiative.

### 1.2 Participating Funding Partners and Their Mandates

AI Bio is pleased to announce this targeted research and innovation call in collaboration with ALMA. Applications will be selected on a project by project basis depending upon their alignment with the program objectives.

**AI Bio**, through this program and other initiatives, is committed to stimulating growth and diversification of Alberta’s agriculture, forest, and related life sciences sectors, and contributing to the economic, environmental, and social outcomes for Albertans. AI Bio has five strategic priority areas: Sustainable Production, Advancing the Bioeconomy, Quality Food for Health, Ecosystem Services, and Prion and Prion-Like Neurological Diseases.

This targeted call falls under the Quality Food for Health umbrella, with its overarching goal of supporting the development of healthy food products and effective food safety systems. Food safety continues to play a critical role with respect to public health, market access, and competitiveness. Safety of food products, although seen by consumers as a given, continues to be a challenge as new pathogens emerge. The ability to rapidly trace products to their origin will contribute to consumer confidence in today’s food production systems. An area of priority is to identify unique research and innovation opportunities in food safety [www.bio.albertainnovates.ca/funding/food-safety/](http://www.bio.albertainnovates.ca/funding/food-safety/).

**ALMA** stimulates new thinking, new ideas, and new approaches, as it works with their industry partners to enhance the reputation, competitiveness and profitability of Alberta’s livestock and meat industry. ALMA’s approach to food safety has been identified in the “One Health Roadmap, A New View”, in which ALMA has indicated an interest in

investing in strategic areas at the interface of human, animal, and environment health systems. ALMA has a continuing commitment to develop new knowledge through research and development, with a focus on anticipating, preventing, and preparing for and recovering from disease.

Specific priorities for research and innovation of interest to ALMA is research that incorporates a one health approach, interacting animal, human, and environmental health, building research capacity in food safety, animal care, biosecurity, diagnostics and surveillance. [www.alma.alberta.ca](http://www.alma.alberta.ca)

### 1.3 Background

AI Bio and its funding partner, ALMA, have both identified food safety as a strategic priority for their organization. In developing this program, AI Bio and ALMA consulted a number of stakeholders representing government, the research community and academia. They were asked for their views regarding critical research gaps or opportunities in food safety in Alberta, and where investments in food safety research and innovation would have the greatest impact. Their advice was used to build the objectives and areas of interest of this program.

Canada is recognized as having one of the safest food supplies in the world. Canada's strong reputation in food safety is a competitive advantage, and contributes to a positive brand for both Alberta and Canadian products. This initiative is designed to further enhance Alberta's excellent reputation for safe food through research and innovation that supports continuous improvement.

Food will never be sterile and risk-free. There are three basic types of hazards in food; biological, chemical and physical. Of the three, biological hazards are a significant cause of food borne illness outbreaks. Examples of biological hazards include: disease-causing bacteria, viruses and parasites. This call will be focused on the reduction of the following specific pathogens: *Listeria monocytogenes*, *E. coli* O157:H7 and other VTEC, *Campylobacter* spp., and *Salmonella* spp..

Food borne illness due to these microbial pathogens is a cause of morbidity and mortality in Canada. The Public Health Agency of Canada estimates that there are potentially 11 million episodes of food borne disease in Canada annually, with a cost of \$3.7 billion per year attributed to health care and lost productivity.<sup>1</sup> When industry losses are considered, the estimated burden of acute food borne illness rises to approximately \$5 billion a year.<sup>2</sup> Health professionals and scientists agree that food borne illnesses are under reported.

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<sup>1</sup> Public Health Agency of Canada, Canada Communicable Disease Report "Burden of acute gastrointestinal illness in Canada, 1999 – 2007: Interim Summary of NSAGI activities", May 2008, Volume 34, Number 05, Monthly Report.

<sup>2</sup> Presentation from Dr. Samuel Godefroy, Director General, Food Directorate, Health Canada, Food Safety Standard Setting Priorities, Emerging Issues in a Global Environment, National Forum on Food Safety, Edmonton, Alberta 11-12 January 2012.

In the 2008 Listeriosis Outbreak in Ontario, there were 57 confirmed cases, with 22 deaths where listeriosis was the underlying or contributing cause. For the full article, see [www.phac-aspc.gc.ca/alert-alerte/listeria/listeria\\_2009-eng.php](http://www.phac-aspc.gc.ca/alert-alerte/listeria/listeria_2009-eng.php). The Public Health Agency of Canada indicates that there are between 100 and 140 cases of listeriosis on average reported in Canada each year.

The following statistics from the Canadian Notifiable Disease Surveillance System (CNDSS) show the information on all nationally reportable diseases in Canada that has been reported from the local public health via the provincial or territorial health authority.

**Canadian Notifiable Disease Surveillance System (CNDSS)<sup>3</sup>**

<b>Salmonellosis (non-typhoid)</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Case Counts	6007	5478	6145	6069
Rate per 100 000	18.59	16.78	18.66	18.22
<b>Campylobacteriosis</b>				
Case Counts	9949	9981	9611	9458
Rate per 100 000	30.9	30.6	29.10	28.4
<b>E.coli VTEC infections</b>				
Case Counts	801	1079	1073	760
Rate per 100 000	2.48	3.30	3.26	2.28
<b>Listeriosis (all types)</b>				
Case Counts	86	103	128	212
Rate per 100 000	0.30	0.30	0.40	0.60

\*This is preliminary data for CNDSS, the final report should be published on the PHAC website in the near future.

Food safety is complex, as contamination may occur at any stage along the food production continuum, from primary producer to food processor. Contamination can also occur during transportation, at retail, at food service or in the home. For food to be safe, each player in the supply chain and the consumer must implement appropriate food safety practices.

The challenge has become greater over the past few decades due to the globalization of our food supply. There is no single global regulatory body that is monitoring food production. Although there may be cooperation between groups of countries, many countries still have differing standards and regulations.

<sup>3</sup> Notifiable Disease Surveillance System, Surveillance and Epidemiology Division, Centre for Communicable Diseases and Infection Control, Public Health Agency of Canada (2005-2008).

In addition to whole foods, a processed food product may contain ingredients from several countries. Each of these ingredients may have originated from different primary producers and would have made their way through various processing facilities, wholesalers and transportation companies before reaching the final food processor. Thus a contaminated ingredient may end up in numerous products all over the world.

Another challenge is the difficulty in tracing a food borne illness back to the cause. The food history that consumers provide is very important in identifying the offending product. In addition, the food industry is developing efficient gate to plate systems to trace food. These systems allow the rapid removal of offending products from the food supply chain. Tracking and tracing systems along with safe food production practices enhance consumer confidence and facilitate market access.

Governments depend on scientific food safety knowledge to identify priorities and make decision on appropriate food policies and programs. The food production industry has responded by building and implementing safe food production programs. Many of these programs are based on Hazard Analysis and Critical Control Points (HACCP) or Good Manufacturing Practices (GMP), depending on the relative safety risks.

Continued investment in food safety research is critical as emerging new pathogens/food safety issues arise. Scientific and technological innovations have an important role to play in reducing the cases of food borne illness, protecting public health, and contributing to a thriving agricultural sector.

## 1.4 Objectives

This food safety research and innovation program is designed to:

- Contribute to continued improvement of Alberta's food safety system through the reduction of food borne illness of Albertans and those who consume Alberta based food products.
- Provide long-term benefits to Alberta's agricultural and food systems through the development of cost effective, pathogen reduction solutions. Projects that contribute to the triple bottom line (economic, environmental, and social outcomes) are encouraged.
- Support both conceptual and applied research in the area of food safety, within a company facility, within a public institution, and/or a combination of the two.
- Projects may be multidisciplinary in nature to solve problems across the food production continuum (from farm to retailer).
- Build on Alberta's existing agriculture and food research capacity.

### Areas of interest include:

Project proposals should be limited to the following pathogens: *Listeria monocytogenes*, *E. coli* 0157:H7 and other VTEC, *Salmonella* spp., and *Campylobacter* spp. as they relate to food borne illness.

- Research that will lead to cost effective **prevention** strategies and safe food assurance systems throughout the food production continuum.

For example research that supports the development of innovative food processing or packaging technologies that improve food safety and that can be used to address food safety risks.

- Research that will lead to cost effective **intervention** strategies at various points along the food production continuum.

Preference would be given to those technologies that might control multiple pathogens. Intervention strategies may include farm level management aimed at pathogen reduction.

- New **detection** strategies and/or new laboratory methods for detection of pathogens including research that would result in improvements in rapid identification of the source of contaminating pathogens.
- Research that could remove trade barriers and improve market access, including development of base line information, surveillance, and monitoring.
- Research that contributes to science-based policy and reduction of regulatory burden.

### Out of scope:

- Marketing activities

## 1.5 Guiding Principles:

- **Aligned:** Letters of Intent (LOIs) and the subsequent full proposal must be aligned with the program purpose and objectives.
- **Uniqueness:** Preference may be given to those projects demonstrating a potential to be transformative for the industry and/or lead to commercialization.

- **Rigor and Due Diligence:** All proposals will be evaluated for research excellence by pre-established criteria by the Funders.
- **Collaboration:** Proposals should identify opportunities for effective collaboration to ensure best use of resources, highly qualified personnel and infrastructure. Project teams should include the appropriate expertise in all aspects of the project.
- **Leveraging:** Proposals should identify opportunities to maximize project financing through leveraging and industry engagement.
- **Knowledge translation:** The proposed research and innovation must clearly demonstrate how the research knowledge and innovation will be translated into practice, programs, or products, and inform policy development. The proposals should clearly identify knowledge translation activities and/or collaboration with either commercialization or program delivery partners.
- **Competitive Solutions/Jurisdictional Advantage:** Preference will be given to projects that provide a competitive or jurisdictional advantage to Alberta.

## 1.6 Process and Timelines

Grants will be up to 3 years in duration, for eligible expenses, and should commence within 6 months of the grant being awarded.

LOI's are invited from researchers wishing to participate in the program. Information can be found at the AI Bio website at [www.bio.albertainnovates.ca/funding/food-safety/](http://www.bio.albertainnovates.ca/funding/food-safety/). Each LOI must be submitted through the on-line system, which can be found at [www.fundingconsortium.gov.ab.ca/aibio/account](http://www.fundingconsortium.gov.ab.ca/aibio/account). Applicants who submit LOI's that are of interest to the funders will then be invited to submit a full proposal.

The following steps and deadlines are planned:

- **May 1, 2012:** Program announcement.
- **June 21, 2012, 2:00 p.m. MDT:** Deadline for LOI submission, using the guidelines in described in this document. Late submissions will not be accepted.
- **June 22 – July 29, 2012:** Review of the LOIs submitted and identification of the projects for which full proposals will be requested.
- **July 30, 2012:** Request for submission of full proposals.
- **September 27, 2012, 2:00 p.m. MDT:** Deadline for submission of full proposals. Late submissions will not be accepted.
- **September 27 – November 22, 2012:** Complete due diligence process including peer review.

- **November 26 - 28, 2012:** All applicants notified of funding decisions.

## 2.0 Guidelines for Submissions

### 2.1 Format and Forms

LOI and Full Proposal submissions are to be made through the automated on-line forms. The on-line system can be found at [www.fundingconsortium.gov.ab.ca/aibio/account](http://www.fundingconsortium.gov.ab.ca/aibio/account). The program guidelines and instructions for using the on-line system can be found at the AI Bio Website at [www.bio.albertainnovates.ca/funding/food-safety/](http://www.bio.albertainnovates.ca/funding/food-safety/) in the funding programs section. Once the LOI portion of the process is complete, the full proposal form will be made available to those who have been shortlisted.

### 2.2 Eligible Applicants

Expected applicants include qualified researchers or a team of researchers within private industry, academic institutions, provincial and federal research centres, and non-profit research establishments. The research must have a strong Alberta connection, with preference given to those projects that include an Albertan researcher.

### 2.3 Eligible Expenses

Category	Eligible
<b>Personnel – Project team</b>	<ul style="list-style-type: none"> <li>• Additional manpower specifically required to deliver program outcomes, at usual annual salary rates.</li> <li>• Time for specific activities on the project for project team members and consultants may be acceptable as in-kind contribution.</li> <li>• Salaries of ongoing employees of an institution are not eligible.</li> </ul>
<b>Travel</b>	<ul style="list-style-type: none"> <li>• Travel to project sites</li> <li>• Travel to present to discuss project with stakeholders</li> <li>• Travel for information dissemination purposes</li> </ul>
<b>Capital Assets/Equipment</b>	<ul style="list-style-type: none"> <li>• Equipment directly required for the project, as specified in the program guideline documents, not to exceed 15% of the overall project costs.</li> </ul>
<b>Supplies</b>	<ul style="list-style-type: none"> <li>• Cost of supplies directly required for the project</li> </ul>
<b>Communication, Dissemination, Linkage</b>	<ul style="list-style-type: none"> <li>• Cost of communicating to knowledge partners, funders, etc.</li> <li>• Cost of publishing if appropriate.</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li>• Indirect overhead is <b>not</b> an allowable expense.</li> <li>• Incremental administrative expenses, directly required to achieve project outcomes are eligible.</li> <li>• Cost of services.</li> </ul>

## **2.4 Funding Sources**

Applicants are encouraged to obtain other sources of financial support for the project from groups, organizations or companies that are likely to benefit from the results of the proposed research and innovation. Information should be provided in the application form on other sources of support, including those applied to or otherwise contacted for assistance.

The Funders will require written confirmation of contributors and their investment to the research outlined in the full proposals. This confirmation will be required once applicants are notified that they have been successful and the offer letter has been accepted, and must be received prior to the development of the grant. Upon completion of the project, the applicant is required to provide confirmation of receipt of financial contributions, including details of the contribution (e.g. copy of cheque or deposit slip).

## **2.5 Progress Reports and Financial Reporting**

If successful in obtaining funding, the Funders will require the applicant to submit progress and financial report every 12 months as per the schedule contained in the contract to the Funders. A final report will be required within three months of completion of the project.

## **2.6 Intellectual Property Principles**

Intellectual property developed and owned by the applicant must be managed by the applicant.

## **2.7 Confidentiality**

The Funders are committed to keeping application details confidential, and are subject to the protection and disclosure provisions of the Freedom of Information and Protection of Privacy (FOIP) Act. External experts who act as reviewers must sign a confidentiality agreement. The Funders will maintain the confidentiality of the material submitted, and will ask the Principle Investigator's permission before sharing proposals with other funders outside of the ones described in this program guideline document.

Personal information is collected pursuant to Section 33(c) of the Freedom of Information and Protection of Privacy Act as it relates directly to and is necessary for the Alberta Quality Food for Health program. Should you have any questions about the collection of this information, you may contact Ms. Joan Unger, Director, AI Bio at 780-422-5737.

## 2.8 Evaluation Criteria

Proposals will be evaluated using the following mandatory administrative criteria and if the proposal does not meet all the criteria, no further rating will be conducted.

<b>Mandatory Administrative Criteria</b>	<b>Yes</b>	<b>No</b>
LOI is received on time		
LOI is complete as per the on-line LOI template		
LOI is submitted by an eligible applicant		

**LOIs meeting all of the mandatory criteria will then be evaluated using the following:**

<b>No.</b>	<b>Letter of Intent Evaluation Criteria</b>	<b>Max Score</b>
<b>A</b>	<b>Quality of Proposal: 55%</b>	
	1. Background (including literature)	15%
	2. Objectives and deliverables	20%
	3. Project Description (methodology and activities)	20%
<b>B</b>	<b>Expected Benefits of the Project: 15%</b>	15%
<b>C</b>	<b>Project Budget: 15%</b>	15%
<b>D</b>	<b>Project Team: 15%</b>	15%
	<b>TOTAL SCORE</b>	<b>100%</b>

LOIs of interest to any of the funders will be invited to submit a full application.

**Full Proposals will then be evaluated using the following:**

<b>No.</b>	<b>Full Proposal Evaluation Criteria (based on Funding Consortium)</b>	<b>Max Score</b>
<b>A</b>	<b>Quality of Proposal: 20%</b>	
	1. Background	5
	2. Objectives and deliverables	5
	3. Innovation and Uniqueness	5
	4. Project Design and Methodology	5
<b>B</b>	<b>Benefit to Industry</b>	5
<b>C</b>	<b>Knowledge/Technology Transfer Plans and Plans for Commercialization</b>	5
<b>D</b>	<b>Project Team</b>	5
<b>E</b>	<b>Ability to complete project (technical resources and rights to the technology)</b>	5
<b>F</b>	<b>Budget</b>	5
	<b>TOTAL SCORE</b>	<b>45</b>

***For more information please contact:***

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