



Call for Poultry Science Cluster Letters of Intent (LOI)

May 2017

Dear applicant:

The Science Cluster Program was introduced in Agriculture and Agri-Food Canada's (AAFC) Growing Forward Agricultural Policy Framework and continued in Growing Forward II. AAFC has not confirmed that the Science Cluster Program will be renewed for the Agricultural Policy Framework presently being discussed between AAFC and its provincial government counterparts; however, CPRC expects that there will be a program similar to the Science Clusters in the next agreement due to take effect April 1, 2018.

This call is in addition to the CPRC 2017 Call for LOIs. Submissions the same as, or similar to, LOIs previously submitted for the earlier call will not be considered for the potential Poultry Science Cluster 3. Submissions to the previous call that are of interest as potential projects for funding under the 2017 Call for LOIs or for inclusion in the next cluster were identified for peer review and researchers were notified if their submissions were being peer reviewed.

Please note that the Canadian Poultry Research Council (CPRC) will continue the approach to the grant review process adopted for the 2016 call designed to provide more flexibility and efficiency to both CPRC and the research community. The approach is designed to reduce the time required to make funding decisions while ensuring CPRC and its member organizations support research that meets industry needs. The approach consists of:

- An expanded LOI that requests:
 - More detailed and additional information on project objectives and background.
 - More detailed description and explanation of the proposed research and methodology.
- LOIs will be reviewed initially by CPRC and its member organizations with a major focus on industry priority and impact. Those projects that are of strong interest to CPRC and its member organizations will move to the peer review stage.
- Principal investigators will be provided the opportunity to respond to peer review comments.
- CPRC reserves the option to request additional information, such as a detailed work plan and methodology, expansion of knowledge transfer activities, etc.

The Board established a three-category approach for the 2016 call designed to accommodate both ongoing research issues and respond to evolving areas of research. Specific priority areas and desired research outcomes, most included in the 2012 National Research Strategy for Canada's Poultry Sector (http://cp-rc.ca/wp-content/uploads/2016/02/National_Research_Strategy_for_Cdn_Poultry_Sector.pdf), have been identified within the categories. The Cluster 3 call for LOIs encompasses the three categories and their priorities that are identified below. *However, CPRC member organizations will look to fill gaps in research that reflect their specific priorities within Cluster 3 and these priority areas are listed by organization at the end of this document.*

Please refer to the 'Notes to Applicants' section of this document for details. LOIs are due July 7, 2017.

Research Categories and Priorities

Food Safety

Research Priorities Included in Category

- Food Safety
- Economic Viability
- Animal Health Products
- Genetics/Genomics
- Smart Agriculture (Not in 2012 Strategy)

Poultry Health and Welfare

Research Priorities Included in Category

- Poultry Health
- Poultry Welfare
- Economic Viability
- Genetics/Genomics
- Animal Health Products
- Smart Agriculture (Not in 2012 Strategy)

Productivity and Sustainability

Research Priorities Included in Category

- Food Security and Affordability
- Economic Viability
- Environment
- Functional and Innovative Poultry Products
- Poultry Feedstuffs
- Genetics/Genomics
- Animal Health Products
- Smart Agriculture (Not in 2012 Strategy)
- Precision Agriculture (Not in 2012 Strategy)
- Climate Change (Not in 2012 Strategy)

Examples of previously funded projects, grouped by the pre-2017 research categories, are available on the CPRC website (www.cp-rc.ca) at the Programs section.

Notes for Applicants:

Industry review of Letters of Intent (LOIs)

Instructions for completing the form are included in that document.

Please email your completed LOI in **Word** format to info@cp-rc.ca by 5:00 pm EST July 7, 2017. If you do not receive email confirmation of your submission within two business days, contact the CPRC office.

If your completed LOI does not already include a signature, please also forward a signed electronic scan with a signature to info@cp-rc.ca or hard copy to:

Canadian Poultry Research Council
350 Sparks Street, Suite 1007
Ottawa, ON K1R 7S8

Your electronic submission is due July 7th, however signed hard copies need not arrive by that date.

Budget and Funding Sources

The Science Cluster Program allows the poultry industry to broaden its research scope to longer research projects (up to five years) and potentially more in-depth research. Industry funds are matched at a rate to be determined by AAFC. **CPRC urges researchers to obtain industry funds from other sources in addition to CPRC and/or its Member Organizations.** CPRC expects AAFC to maintain its practice of allowing industry (not university) in-kind (e.g.: materials and supplies, birds, etc.) for a portion of its funding contribution.

Review process

LOIs will be reviewed on the following criteria:

- **Scientific concept and approach:** The proposal must be scientifically sound, technically feasible, and promise either to generate new knowledge or to apply existing knowledge in an innovative manner.
- **Industry impact:** The proposal must identify how the work will benefit the poultry industry, especially in terms of helping industry reach its research target outcomes, and should outline any additional potential social and/or economic benefits that will be realized in Canada.
- **Knowledge transfer and commercialization:** The proposal should describe how outcomes of the work will be shared with the research community and how it might be utilized by industry, including suggestions on how the resulting technology might be commercialized.

Collaboration among scientists and institutions is encouraged and will be a consideration during the review process.

All applicants will be informed of the CPRC Board decision to accept or reject the LOI after each of the internal and peer review steps identified above.

Questions?

Inquiries regarding this call for Grant Applications should be directed to Dr. Bruce Roberts via email at bruce.roberts@cp-rc.ca or phone at 613-566-5916

CPRC Member Organization Poultry Science Cluster Research Priorities

Chicken Farmers of Canada

Flock Health

There is an on-going need to help the industry prepare and implement for the reduced use of antibiotics/elimination of the preventive use of antibiotics. Immunosuppression caused by pathogens predisposes chickens to issues such as necrotic enteritis. The three basic strategies for controlling immunosuppression are vaccination, pathogen reduction and dietary modifications.

- Focus of Necrotic enteritis (e.g. vaccine development, enhancement of immune protection against *Clostridium perfringens*)
- Vaccine development to reduce immunosuppression (e.g. Chicken Anemia Virus)
- Assessment of dietary modifications (e.g. acidifiers, prebiotics, probiotics)

Welfare

With the Code of Practice just finalized in June 2016, the welfare research requests will focus on the research gaps that have been highlighted in the Code of Practice.

- Stocking density – Optimal stocking densities for broilers
- Lameness – Methods to mitigate lameness
- Lighting – Assessing source of lighting and the effects of nighttime light intensity
- Transport – Assessment of optimum feed withdrawal prior to transport at processing and the effectiveness of hydration/nutrient products for chicks. Assessment of optimal loading densities for broilers in varying weather conditions, including bird sizes, duration of trip/lairage and bird condition

Food Safety

This will be a combination of research looking at pathogen reduction on-farm and at processing (as per the mandate of the FPT Pathogen Reduction Committee) and bringing forward questions about CFC's OFFSAP.

- Explore production practices and methods on-farm and at the processing plant to reduce pathogen loads of chicken.
- Development of diagnostic tools to help reduce pathogen levels on farm.
- Asses the effectiveness of on-farm cleaning and sanitation protocols for “Raised without the Use of Antibiotics” flocks

Canadian Poultry and Egg Processors Council

Welfare

- during transport

Food safety

- *Salmonella* and *Campylobacter* control/reduction throughout the supply chain

Support all parts of the poultry industry in reduction of the use of antimicrobials while maintaining healthy flocks and high quality, safe poultry products.

Egg Farmers of Canada

Hen welfare

- Hen behaviour and health in alternative (enriched cage, non-cage) housing systems
 - Housing system design
 - Management and production practices
 - Pullet rearing
- End of flock management
 - Catching, loading, and transport
 - On-farm depopulation

Hen Health

- Disease
- Gut health
- Dietary ingredients

Environment and sustainability

- Production practices and technologies that decrease environmental impact and increase sustainability

Research should focus on enriched cage and non-cage housing systems to align with the egg industry's transition out of conventional housing.

Turkey Farmers of Canada

Turkey Welfare

- Transportation – assess the effect of catching, loading, and transportation on bird stress and welfare
- Stocking density – assess the effect of stocking density on flock performance parameters, behavioural indicators and environmental conditions to develop sound recommendations related to flock welfare
- Lighting – explore the effect of various lighting sources and programs on flock performance parameters and behavioural indicators to develop sound recommendations related to flock welfare

Flock Health

- Antimicrobial use – evaluate and further develop flock management practices that reduce the need for antimicrobial use, with a focus on preventive use, in turkey production

Sustainability

- Life cycle assessment – assess the impact of turkey farming on the immediate and remote environment (including inputs and outputs) as well as the social and socioeconomic impacts of production and consumption

Canadian Hatching Egg Producers

Production-based Research

- Methods to increase fertility
 - Differences in fertility and paid hatch
 - When is it most beneficial to add spiking roosters?
- Egg size
 - The ability to be able to set eggs below 52 grams if required
 - Effect on maximum protein on egg size
 - Causes of egg weight differences

Breeder Welfare

- Stocking density
 - Feeder space and water space
 - Focusing either on a per kg basis or detailed age categories
- Euthanasia
 - Methods for birds > 3kg, including low atmospheric pressure stunning (LAPS)
 - Is LAPS practical for on-farm application?
 - Efficient and quick way to euthanize breeder flocks in an emergency situation
- Feed energy and male aggression
- Early mortality of breeder hens (E.coli, staphylococci)
 - E.coli and staphylococci more likely to post peak mortality association
- Feather pecking and licking problems
 - Link between feather licking and wheat based diets
- Ammonia control
 - Control ammonia via barn ventilation, barn design, structural and equipment changes, and additives (e.g. Cathedral vs. flat ceilings, belt/scrapper systems for manure removal under slats) as related to ammonia and animal care

Environmental Research

- Effects of temperature control on egg handling and holding, and egg transfer vehicles, including egg sweating and links to rots after eggs leave the farm

Poultry Health and Disease

- Variant bronchitis-impact on breeder production and fertility
- White chick syndrome
- More efficient vaccination programs
- Effect of probiotics

Food Safety

- Alternatives to antimicrobials

Control of Food Borne Pathogens

- Control of *Salmonella* vaccination (methods and effectiveness)
 - Newer *Salmonella* vaccinations or supplemental adjuvants to improve vaccine efficacy
- Sources of infection
 - What is transferred to the chick? How does egg incubation affect *Salmonella* cells?
- Possible barn differences, what type of construction, material, insulation, volume of air, angle to the sun (infrared radiation)
- Prevalence
- Population Density
- Control of *Campylobacter jejuni*
- On-farm strategies to reduce and prevent *Salmonella* while birds are in production
 - Reduce/prevent *Salmonella* via competitive exclusion (probiotics and antagonistic bacterial species for controlling food borne pathogens)