



Canadian Poultry
Research Council

Le Conseil De
Recherches Avicoles
Du Canada

Call for 2019 Letters of Intent (LOI)

December 2018

Dear applicant: 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, compared to the LOI form used previously, 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.*

CPRC made changes for the 2016 call and will maintain these changes for the 2019 call. The research categories previously used were unable to accommodate some new initiatives in poultry research (i.e.: climate change, smart agriculture, precision agriculture). The CPRC Board of Directors decided that the ad hoc category that was originally designed to fill these gaps was not as effective as it had been in the past. The Board established a three-category approach for the 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 2019 call for LOIs encompasses the three categories and their priorities that are identified below. Research priorities specific to CPRC member organizations are listed by organization at the end of this document.

*Please refer to the 'Notes to Applicants' section of this document for details, including submission deadline. LOIs are due **February 1, 2019**.*

Research Categories and Priorities – 2019 Call

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-2019 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)

Please use the CPRC LOI form for your submission for both the CPRC call. Instructions on 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 **February 1, 2019**. 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 **February 1, 2019**, however signed hard copies need not arrive by that date.

Budget

Applicants should limit their requests from CPRC to a maximum total of \$60,000. Budgets exceeding \$60,000 should be discussed with the CPRC office before submitting an application for evaluation.

Industry dollars, whether from CPRC or other industry sources, must be matched with non-industry dollars at a ratio of at least 1:1. Higher leverage ratios are preferred.

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.

Future Calls

With input from academe, government and industry, the CPRC will continually review its research priority list and, if necessary, adjust it to reflect existing and emerging issues of importance to its members. Provided they remain of high importance, individual priority areas will be the subject of future LOI calls at regular intervals so as to promote continuity in existing research programs.

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 PRIORITY LISTS

As additional information, please see the following research priority lists from each of the CPRC Members.

Canadian Hatching Egg Producers

The CHEP Research Committee has designated ammonia as a top priority issue.

1. Production-based Research
 - a. Methods to increase fertility
 - Differences in fertility and paid hatch
 - When is it most beneficial to add spiking roosters?
 - b. Egg size
 - Effect of maximum protein on egg size
 - Causes of egg weight differences

2. Breeder Welfare
 - a. Ammonia control
 - Developing more accurate methods to measure ammonia on-farm, and validating existing ammonia measurement equipment (such as the ammonia meters used by auditors)
 - Establishing baseline ammonia levels on the farm, and once a consistent methodology is established, have CHEP compile national data to inform decisions going forward
 - Validating benchmarks (such as those referenced in the code, or those determined as a result of on-farm baseline data), including the study of the impacts of different levels of ammonia concentration on the health and well-being of birds and humans in order to determine appropriate level(s) of ammonia to include in the animal care program as maximum thresholds depending on climate and temperature
 - Cost-effective methods to control ammonia
 - b. Density
 - c. 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
 - d. Aggression
 - Feed energy and male aggression
 - Research linking specific genetic traits with male to female aggression
 - e. Early mortality of breeder hens (*E.coli*, staphylococci)
 - *E.coli* and staphylococci more likely to post peak mortality association
 - f. Physical alterations
 - Toe-trimming, beak trimming: ideal methods and timing for procedures
 - Cost-effective, practical management practices that can eliminate physical alterations
 - g. Transporting newly hatched chicks

- Length of time that newly hatched chicks are sustained by the yolk sac
 - Effectiveness of hydration/nutrient products used prior to and during transit
- h. Effects of vaccination programs on breeder welfare
 - Current status
 - Maximum thresholds – how much is too much?
3. Environmental Research
 - a. 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
 4. Poultry Health and Disease
 - a. Variant bronchitis-impact on breeder production and fertility
 - b. White chick syndrome
 - c. More efficient vaccination programs
 - d. Effect of probiotics
 5. Alternatives to antimicrobials
 6. Control of Food Borne Pathogens
 - a. Control of *Salmonella* vaccination (methods and effectiveness)
 - Newer *Salmonella* vaccinations or supplemental adjuvants to improve vaccine efficacy
 - b. Sources of infection
 - What is transferred to the chick? How does egg incubation affect *Salmonella* cells?
 - c. Possible barn differences, what type of construction, material, insulation, volume of air, angle to the sun (infrared radiation)
 - d. Prevalence
 - e. Population density
 - f. Control of *Campylobacter jejuni*
 - g. 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)

Chicken Farmers of Canada

1. Animal Health/AMU
 - a. Development of new vaccines for viruses that have developed virulent resistant strains (e.g. Reovirus)
 - b. Examining dietary strategies/effective alternatives to antibiotics (e.g. prebiotics, probiotics, oils etc.) to reduce the impact of the elimination of the preventive use of Category III antibiotics
2. Food Safety
 - a. Examining the impact of management practices, beyond biosecurity, to reduce *Salmonella enteritidis* throughout the chicken value chain (e.g. organic acids, vaccines, downtime etc.)
Conducting baseline surveillance for SE prevalence nationally
3. Animal Welfare

- a. Comparison of tools and their effectiveness in measuring environmental conditions in barns (e.g. ammonia levels) in barns.
- b. Development of indicators of thermal comfort and health of chickens based on environmental variables (temperature, relative humidity, air velocity and gaseous and particulate emissions) correlated to bird physiological, behavioral and production parameters.
- c. Assessing the welfare status of current poultry genetics through investigating the prevalence of lameness, associated causes and potential mitigation measures.
- d. Impact of lighting on bird health and welfare
 - Focusing on the new Code requirements for lighting
 - Impact of lighting programs on mash fed broiler chickens
- e. Development and/or evaluation of mechanical cervical dislocation tools for use in broiler chickens.
- f. Impact of stocking density on bird health and welfare (e.g. optimal stocking density for broilers)

Egg Farmers of Canada

1. Animal Care science
2. Food Safety
3. Human nutrition and health
4. End of flock management
5. Non-food uses of eggs
6. Environment and sustainability
7. Bird nutrition and health
8. Public policy and economics

Research gaps identified by the Code of Practice

Turkey Farmers of Canada

1. Flock Health
 - a. Evaluate and further develop flock management practices that reduce the need for antimicrobial use in turkey production.
 - b. Identify methods of disease transmission (e.g. avian influenza) amongst flocks and from wild sources, and assess the effectiveness of eradication techniques.
 - c. Explore the use of in-feed additives that reduce the levels of harmful pathogens (i.e., Campylobacter, Salmonella) in flocks during turkey production.
2. Food Safety and Quality
 - a. Assess and manage feed withdrawal processes to determine the effect of timing, transportation distance, and finisher diet on meat quality and characteristics (e.g. water loss), and bacterial load.
 - b. Explore the use of in-feed additives to reduce the prevalence of food-borne pathogens in turkey flocks and in turkey meat.
3. Turkey Welfare
 - a. Transportation
 - Assess the effect of short and long distance transportation on market-age turkeys and evaluate measures that reduce bird stress.

- Assess the effect of turkey loading equipment and trailer design on bird stress and welfare during loading and transportation.
- b. Housing and Management
 - Assess the effect of stocking density on flock performance parameters, behavioural indicators and environmental conditions to develop sound recommendations related to flock welfare.
 - Development and evaluation of potential new control strategies for lameness in turkeys, including both the application of on-farm measures (e.g., feeding practices, slow early growth) and an evaluation of genetic effects.
 - Explore the effect of various lighting programs on flock performance parameters and behavioural indicators to develop sound recommendations related to flock welfare
 - c. Euthanasia
 - Evaluate and further develop methods for humane on-farm euthanasia to be used in routine situations and during a mass depopulation.
 - Investigate new and emerging on-farm euthanasia methods and technologies to evaluate humaneness and effectiveness of various techniques.
4. Production Sustainability
 - a. Assess and validate farm production methods that promote the reduction of environmental contaminants from turkey farms (e.g. phosphorus, nitrogen, ammonia, dust).
 - b. Assess the impact of turkey farming on the immediate and remote environment (including inputs and outputs) and develop novel farming methods that reduce the ecological footprint of the Canadian turkey industry.
 5. Nutrition
 - a. Explore and develop turkey feed formulations that meet the requirements of the “free-from” and “vegetable-grain fed” marketing requirements.
 - b. Explore the use of novel feedstuffs, feed additives, and/or the modification of existing feedstuffs to create more nutritionally efficient turkey diets.