



## Call for 2020 Letters of Intent (LOI)

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December 2019

*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 2020 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 has been in the past. 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](http://cp-rc.ca/wp-content/uploads/2016/02/National_Research_Strategy_for_Cdn_Poultry_Sector.pdf)), have been identified within the categories. The 2020 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 January 31, 2020.*

### Research Categories and Priorities – 2020 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-2020 research categories, are available on the CPRC website ([www.cp-rc.ca](http://www.cp-rc.ca)) at the Programs section.**

### **Notes for Applicants:**

#### **Industry review of Letters of Intent (LOIs)**

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*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](mailto:info@cp-rc.ca) by 5:00 pm EST **January 31, 2020**. 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](mailto:info@cp-rc.ca) or hard copy to:

Canadian Poultry Research Council  
225 Metcalfe Street  
Suite 314  
Ottawa, ON K2P 1P9

Your electronic submission is due **January 31, 2020**, however signed hard copies need not arrive by that date.

225 Metcalfe Street, Suite 314, Ottawa, ON K2P 1P9  
Phone : (613) 714-4599      email: [info@cp-rc.ca](mailto:info@cp-rc.ca)

## **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](mailto:bruce.roberts@cp-rc.ca) or phone at 613-714-4599 ext. 101.

## CPRC MEMBER PRIORITY LISTS

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

### Canadian Hatching Egg Producers

Ammonia and *Salmonella* Enteritidis (SE) reduction have been designated as top priorities by the CHEP Research Committee.

1. Production-based Research
  - a. Methods to increase fertility and number of saleable chicks
    - Differences in fertility and paid hatch
    - When is it most beneficial to add spiking roosters?
    - Research on new and emerging technology to assess on-farm, real-time fertility
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 wellbeing 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
  - b. Effects of lighting on broiler breeder production, fertility, and bird health
    - LED lighting long-term
    - Light intensity, spectrum, colour temperature (K)
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 Foodborne Pathogens/SE
  - a. Control of *Salmonella* by 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 foodborne 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 and reduction of pathogens
  - c. Development of alternative products for the prevention of Necrotic Enteritis
  - d. Prevention strategies for Inclusion body hepatitis (IBH)
  - e. Management of opportunistic emergent E. Coli in flocks with raised without the preventive use of antibiotics
  - f. Management strategies to mitigate the impact of the absence of the preventive use of antibiotics (e.g. barn sanitation, waterline sanitation, practical early litter moisture management for proper cocci cycling).
  - g. Monitoring the emergence or resurgence of pathogens or diseases following the gradual withdrawal of antibiotics
  - h. Development of tools for the rapid diagnosis of resistance to antibiotics and anticoccidials

- i. Study of nutritional supplements in ovo in broiler chickens with the objective of providing better immunity and resistance to pathogens after hatching
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.).
  - b. On-farm control strategies to reduce the prevalence of *Salmonella* sp. and/or *Campylobacter* in broilers
3. Animal Welfare
  - a. Comparison of tools and their effectiveness in measuring environmental conditions (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) and as a management tool in flocks raised without the preventive use of antibiotics
4. Sustainability
  - a. Development of eco-efficient energy strategies in poultry production to reduce the carbon footprint and improve the welfare and productivity of farms

### **Egg Farmers of Canada**

1. End of flock management
2. Environment and sustainability
3. Animal care science
4. Innovative uses of eggs
5. Food safety
6. Human nutrition and health
7. Bird nutrition and health
8. Public policy and economics
9. Research gaps identified by the Code of Practice

## **Turkey Farmers of Canada**

1. Flock Health
  - a. Develop flock management practices that reduce the need for antimicrobial use.
  - b. Explore the use of in-feed additives on health in flocks during production.
  - c. Identify methods of disease transmission and assess the effectiveness of eradication techniques.
2. Food Safety and Quality
  - a. Assess the effect of timing, transportation distance, and finisher diet on meat quality and pathogen load.
  - b. Explore the use of in-feed additives to reduce pathogen levels in meat.
3. Turkey Welfare
  - a. Transportation
    - Assess the effect of transportation on turkeys and evaluate measures that reduce bird stress.
    - Assess the effect of 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.
    - Development potential control strategies for lameness in turkeys, including on-farm management and an evaluation of genetic effects.
    - Explore the effect of lighting programs on flock performance parameters and behavioural indicators.
  - c. Euthanasia
    - Evaluate methods for humane on-farm euthanasia for routine situations and during a mass depopulation.
    - Investigate new on-farm euthanasia methods and technologies.
4. Production Sustainability
  - a. Assess production methods to reduce environmental contaminants (e.g. phosphorus, nitrogen, ammonia, dust).
  - b. Assess the impact of turkey production on the immediate and remote environment and develop novel production methods that reduce the ecological footprint.
5. Nutrition
  - a. Explore the use of novel feedstuffs and feed additives to create more nutritionally efficient turkey diets.
  - b. Develop turkey feed formulations that meet the requirements of the “free-from” and “vegetable-grain fed” requirements.

## **Canadian Poultry & Egg Processors Council**

Food safety (namely *Salmonella* control)

Antimicrobial alternatives

Welfare improvements

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