

COBB RESEARCH INITIATIVE (CRI)

REQUEST FOR APPLICATIONS

2023

PRE-PROPOSAL APPLICATION DEADLINE: APRIL 3, 2023

Purpose and Research Priorities

Cobb's primary purpose is to serve our customers using innovative research and technology to make protein available, healthy, and affordable worldwide. Cobb harnesses scientific research and innovative technology to select the best genetics for continuous improvement in each generation of breeding stock.

The Cobb Research Initiative (CRI) is a new program that seeks partnerships with researchers to further our genetic progress and answer key issues facing the global poultry industry. Leaders in basic and applied research are sought to provide solutions and advance poultry care, health, and welfare by leveraging advanced technology and innovative thinking. Projects with external partners will assist Cobb with controlling and preventing poultry diseases, improving animal health and welfare outcomes, reducing production costs, and/or enhancing product quality while advancing sustainability needs.

The goals of the Cobb Research Initiative (CRI) include:

1. Enhance the genetics of Cobb products with improved management and analytics for each primary research area.
2. Improve animal health and welfare outcomes of poultry flocks and reduce the economic impact of avian pathogens.
3. Develop tools and methods to accelerate genetic progress across all traits. This includes development of new traits and improved measurements of existing traits.
4. Identify and develop an advanced understanding of nutrition, health, fertility, and hatchability relevant to Cobb broiler breeder genetics.

Research Components to Consider

Science and Technology Integration

Research projects that promote the convergence of science, automation, and technology to solve Cobb's challenges are highly encouraged. The CRI seeks partnerships with researchers who consider how technology and automation could be used to support solutions within the key focus areas identified in this request for applications. Artificial intelligence, data systems collection, data systems management, robotics, and/or automation are technologies Cobb is seeking to leverage to improve our genetic products and production efficiency. Research with strategies that include the application of biotechnology for breed improvement is highly encouraged.

Global Engagement

Cobb is a global genetics company that has been advancing science around the world for over 125 years. Cobb welcomes pre-proposals from researchers around the globe and encourages researchers to consider our worldwide presence and extensive customer network. We recognize that some solutions may not be universal. However, we encourage researchers to propose solutions that may be adapted to fit regional needs.

Research Priorities for 2023

Cobb has identified **four (4) research priorities** for the current funding cycle: Broiler breeder livability, Broiler livability, Hatchability/Chick Quality, and Fertility/Egg Production. We are accepting research applications that address these priority areas. Further descriptions of each priority and key questions/focus are given.

(1) BROILER BREEDER LIVABILITY

Background

Life-of-flock livability is a critical item for the productivity of a broiler breeder flock. In both the rearing phase and the laying phase, the overall livability of a broiler breeder flock greatly impacts the quantity and quality of hatching eggs produced and the ability of the company to have a regular supply of day-old chicks. During the last 4 years, industry reports show that brooding mortality (day 1 to 14) is increasing, grow-out mortality is higher, and overall production mortality has also increased. In a recent survey of the broiler breeder industry, key areas were identified that require more research to help determine the cause of the increased mortality and to help resolve the issue for future broiler breeder flocks.

KEY QUESTIONS AND FOCUS AREAS FOR INVESTIGATION

- What are the key reasons for culling and mortality in each critical phase of breeder management (brooding, grow-out, pre-peak, peak, and post-peak)?
- Using existing tools, can new application and management strategies be developed to control coccidiosis during the rearing period?
- Using existing tools, can new application and management strategies be developed to improve the prevention of bacterial infections during the brooding and rearing phases?
- What is the best feeding strategy to prevent bird losses due to piling while also optimizing flock uniformity during the rearing phase?
- What feeding applications and management strategies can be used to reduce hen losses due to peritonitis and lameness during the pre-peak phase in the breeder house?
- What feeding applications and management strategies can be used to reduce hen losses due to peritonitis, metabolic disease, and lameness during the peak and post-peak phases in the breeder house?
- What are the key reasons for metabolic disease in breeder flocks and what strategies can be used to mitigate these from a management perspective?

(2) BROILER LIVABILITY

Background

Broiler mortality results in a direct loss of profits for growers and integrators and is a key welfare indicator that is regularly assessed as part of the broiler production system. Some causes of mortality include disease challenges and mobility issues leading to culling. Changes in management practices and genetics, as well as providing growers and integrators with improved tools can promote flock livability and enhance welfare outcomes of broilers. Across the broiler industry, Cobb identified gaps in knowledge that research can fill to potentially reduce broiler mortality.

KEY QUESTIONS AND FOCUS AREAS

- Can methods be identified and/or developed in broiler breeders to reduce the susceptibility of broiler progeny to bacterial and viral disease challenges?
- What are the routes of transmission of relevant broiler pathogens on farms and in hatcheries? What are some control strategies for the transmission routes?
- How can leg health be improved and culls for mobility issues be reduced in broilers?
- How can methods and management strategies for coccidia control be improved?
- What are the best methods and practices to optimize foot pad health and good welfare outcomes?
- What are the impacts of management practices on gut health, correlated with livability?
- What hatchery and brooding strategies can be implemented to reduce early chick mortality related to colibacillosis?

(3) HATCHABILITY/CHICK QUALITY

Background

Good hatchability and chick quality are two prerequisites to ensure good overall flock performance. There are many factors influencing hatchability and chick quality from the incubation and hatching process. These include such areas as egg size, egg storage length and condition, egg position during storage, eggshell quality, hatch temperature, embryonic temperature, genetics, nutrition of the breeder flock, and age of the breeder flock.

In a recent survey of the broiler breeder industry, key areas were identified that require more research to help determine the cause of decreased hatch, challenges with chick quality, and to improve the hatchability and egg quality for future breeder flocks.

KEY QUESTIONS AND FOCUS AREAS FOR INVESTIGATION

- What are the key reasons for poor hatch rate?
- What innovative strategies and ideas should be implemented pre-incubation and during incubation to improve embryo viability and quality?
- What is the impact of current egg quality sanitation protocols on embryo viability and quality?
- What are the key reasons for poor chick quality at hatch? Using innovative hatchery equipment and technology, can chick quality be more objectively and quickly assessed during processing in the hatchery?
- Using existing tools, can new application and management strategies be developed to enhance the uniformity of the hatch window and improve overall hatch rates?
- Using existing tools, can new application and management strategies be developed to better identify issues leading to poor chick quality at hatch?

(4) FERTILITY/EGG PRODUCTION

Background

Fertility and hatchability have a direct impact on production and profitability within the industry. In a recent survey of the broiler breeder industry, key areas were identified that require more research to help provide solutions to improve fertility and egg production.

KEY FOCUS AREAS

- What feed management strategies can increase egg production? How should nutritional profiles be implemented to improve male fertility and female productivity?
- What is the best strategy/trait to select for male fertility? How can innovative technology be used to identify and assess rooster quality and fertility during the life of the flock?
- How does semen quality relate to hatch? What are the best semen traits to evaluate that improve fertility/hatchability?
- Using existing tools, can new application and management strategies be developed to bring hens into lay earlier, as well as achieve persistency in lay post-peak?
- Can broiler breeder reproductive performance be improved using new tools, applications, and management strategies?

Cobb Research Areas

Cobb has identified **four (4) research priorities** described earlier in this 2023 RFA. However, we recognize that other areas of poultry research are also important. The CRI will accept and review pre-proposals outside the **research priorities** that are relevant to Cobb and the broiler breeder industry. We encourage researchers to provide *sufficient justification and evidence of need* for projects that are outside the scope of our **research priorities**.

Research areas relevant to the CRI:

Animal Welfare	All aspects of animal welfare as they relate to improving and/or monitoring poultry health and welfare outcomes.
Breeder Broiler Management	Flock management best practices to improve production performance and health and welfare outcomes.
Biosecurity	Best practices on the farm and/or in the hatchery to prevent the introduction of pathogens, mitigate risk of disease spread and enhance early disease detection. .
Disease	Epidemiology, risks, treatment, prevent and control of diseases relevant to meat-type chickens.
Nutrition	Identify nutritional factors (ingredients, nutrient inclusion levels, processing methods, feed quality, feed form, feed presentation, etc.) that impact broiler or broiler breeder production performance (feed conversion, weight gain, livability, etc.).
Environmental management	All aspects of poultry house management (litter quality, humidity, ventilation, water sources, lighting, etc.) as it relates to production performance, behavior, and welfare outcomes
Hatchery Management	All aspects of hatcheries including egg sanitation, egg storage, incubation, and hatching, that impact chick quality.
Egg production	Improving egg quality and production with respect to equipment, collection, sanitation, etc.
Meat quality	Any tools or technology to improve meat quality analysis in a non-invasive and/or automated manner. Genetic and management factors that can affect meat quality.

Pre-Proposal Application Process

The CRI program is accepting research pre-proposals beginning January 24, 2023 and will close on April 3, 2023. Researchers (defined below) must submit their applications electronically using the fillable form at [Cobb Research Initiative » Cobb \(cobb-vantress.com\)](https://cobb-vantress.com) and must upload the pre-proposal form to complete the application process. Ideally, research projects should be completed within 18 to 24 months.

Researchers will be notified of the outcome of the pre-proposal selection process by April 18, 2023. Researchers who have approved pre-proposals will have the opportunity to partner with a Cobb subject matter expert to refine and expand their application before submitting the full application proposal.

Pre-Proposal Application Content

Project Overview (Use fillable PDF available on website)

1. Primary research category addressed
2. Date Submitted
3. Project Title
4. Primary Researcher
5. Research Institution / Academic Institute (collectively referred to herein as “Researcher”)
6. Project Abstract (see form for details)
7. Estimated Project Start Date
8. Estimated Duration of the Project
9. Estimated Total Cost of Project
10. Primary and Co-researcher name and affiliation

Full-Proposal Application Process

Researchers selected from the pre-proposal application process may partner with a Cobb subject matter expert to refine their research proposal before submitting the full application. The full application must be submitted in PDF format by May 19, 2023.

Full-Proposal Application Content

Executive Project Overview

1. Total Amount Requested
2. Date Submitted
3. Project Title
4. Primary Researcher (name and email address)
5. Research Institute / Academic Institute (collectively herein referred to as “Researcher”)
6. Abstract – Please limit to 700 words or less
7. Project Start Date and Estimated Project Completion Date
8. Total Duration of the Project

Executive Research Summary

1. Overall, Purpose of Research (expected accomplishments relative to the Cobb research priorities)
2. Key Objectives/Deliverables (expected research outcomes to be achieved within duration of project)
3. Justification of Potential Benefit to Cobb and Wider Poultry Industry

Introduction and Background

1. Provide background on the project as it relates to Cobb’s research priorities.
2. Provide insights into current research gaps and how this project can address those.
3. Is this project part of a larger program or is it a continuation of a prior research study? If yes, how does this project fit into the objectives of that program or how will it further the existing research?

Materials, Methods, and Experimental Design

1. Describe the experimental design in detail, including management details where possible.
2. If available, substitute text with illustrations, diagrams, and citations of published literature.
3. Research timetable with clearly defined steps and progress checkpoints

References

Provide a list of scientific publications cited in prior sections of the proposal.

Researcher Team Information (include brief CV for each primary researcher and co-researcher)

Research Budget

1. Detailed explanation of expected salary, wages, benefits
2. Costs and details for equipment that will be purchased for the study
3. Costs and details for materials and supplies
4. Costs and details for rental or use of research facilities (including animal housing, feed, etc.)
5. Explanation of other direct costs
6. Explanation of indirect costs (cannot exceed 25%)
7. Explanation of costs related to possible publication and/or meeting travel to present data

Cobb Review and Selection Process for Full Proposals

A panel of Cobb subject matter experts will evaluate the full proposals. Reviewers will consider the strengths and weaknesses of the proposal, the overall likelihood that the study will have significant outcomes and impact for Cobb, and the alignment of the project with current research initiatives. The panel will select the full proposals for funding and all researcher applications will receive notice from Cobb.