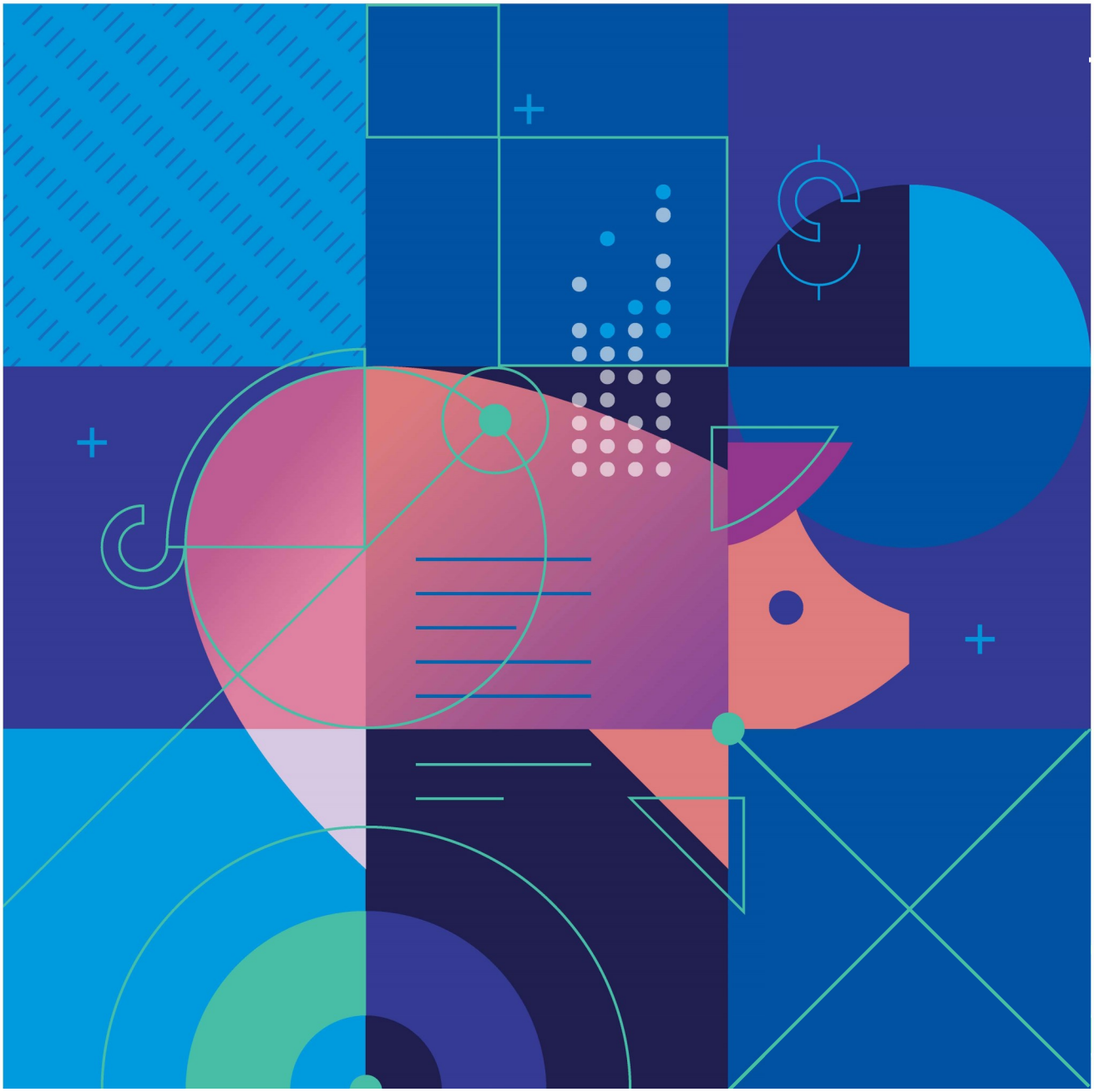

SWINE CLUSTER 4: CALL FOR LETTERS OF INTENT

Swine Innovation Porc

CALL FOR LETTERS OF INTENT

Swine Cluster 4: 2023-2028

1. Background

Swine Innovation Porc (SIP) is a national, not-for-profit organization made up of nine members, including the Canadian Pork Council and eight provincial pork producer associations. SIP's mission is to provide national leadership in research, development and knowledge transfer to enhance the competitiveness of the Canadian swine sector. Our main objectives are to:

- Determine national research priorities
- Develop multi-institutional and multi-disciplinary R&D programs
- Act as coordinator for the research community and industry partners
- Deliver timely and effective knowledge transfer programs
- Encourage the development of highly qualified personnel and research skills
- Leverage producer dollars

Our current national research program Swine Cluster 3: Innovating for a Stronger Pork Sector was designed to accelerate the pace of innovation, drive sustainable growth and strengthen competitiveness and maximize resilience of the swine sector. To lean more about our activities and current research program, please visit us at www.swineinnovationporc.ca.

SIP supports the renewal of another Canadian Agri-Science Clusters Initiative, as part of Agriculture and Agri-food Canada's next policy framework. In the anticipation of another potential round of funding, SIP is currently putting together a five-year Swine Cluster 4 research and knowledge transfer program, starting in 2023.

2. Swine Cluster 4 Letters of Intent: Objectives and Priorities

This call for letters of intent (LOIs) encourages the Canadian research community to submit innovative and integrated research projects that will be relevant and beneficial to the resiliency, sustainability and competitiveness of the pork industry, which are even more crucial elements for success following the COVID-19 pandemic.

The Canadian Agri-Science Clusters Initiative is expected to support projects that address the following three priority areas:

- Economic growth
- Industry resiliency
- Environment and climate change

Projects supported within the Swine Cluster 4 research program should target industry priorities, as indicated in the **Appendix found on pages 5 to 7,** and have a major impact on the pork sector by:

- Finding solutions through innovative approaches
- Application of cutting-edge research technologies and concepts
- Considering market and societal pressures and diversity aspects
- Promoting the development of highly qualified personnel
- Demonstrating a knowledge transfer component

Projects that have a multi-disciplinary and multi-institutional approach are encouraged.

While research projects in any field may also be considered, preference will be given to LOIs that fall within the SIP's identified research priorities.

3. Project Length and Funding Information

Length of projects:

- Project start date: April 1, 2023 (or later)
- Project completion date: December 31, 2027 (or earlier)

All activities should be completed and funds spent by December 31, 2027.

Project budgets:

- Maximum project budget for a 5-year term: $2 million
- Equipment purchase: Maximum of $5,000 per piece of equipment
- Maximum overhead fees: 15% of the total budget

Matching funds:

If approved for funding, SIP will provide up to 70% of the project budget, and a minimum of 30% of the total project budget is requested to come from industry/other partners.

Eligible funding partners may include:

- Industry associations and networks, not-for-profit organizations
- For-profit business enterprises
- All government (except Agriculture and Agri-Food Canada), up to a maximum of 15% of overall budget

Please note that in-kind contributions from industry/other partners are eligible but must not exceed 10% of the total budget.

4. How to Submit LOIs

Deadline for submissions: **Monday, February 21, 2022 at 4:00 pm Eastern Standard Time**.
The following documents must be part of the application:

- Letter of intent – please complete all sections. This form may be found at : www.swineinnovationporc.ca.

Completed forms should be sent to info@swineinnovationporc.ca

5. Next Steps & Important Dates

A SIP evaluation committee will review the LOIs. The evaluation criteria will include:

- Benefit to the pork industry
- Demonstrated links with the goals of the Swine Cluster 4 program, as stated above
- Budget and sources of funding
- Feasibility of the proposed research

Leaders of selected LOIs will be invited to submit a detailed proposal. Further details on how to submit will be shared with the leaders of retained LOIs.

Important dates:

- Deadline to submit LOIs: February 21, 2022
- Evaluation of LOIs by SIP committee: April 2022
- Response regarding retained LOIs: April 2022
- Detailed proposals submission deadline: June 2022
- Review of scientific merit: Summer/early Fall 2022
- Anticipated final decisions regarding retained projects: Spring 2023

One of SIP's primary roles is to enhance collaboration across Canada for the pork sector. Therefore, for this call for LOIs, it is possible that some project leaders may be asked to consider combining projects with other researchers in order to increase overall collaboration or the project's impact/scope, as well as to avoid any unnecessary duplication.

6. Questions?

For more information regarding this call for LOIs, please contact Marie Vachon by email at mvachon@swineinnovationporc.ca or by phone at (418) 650-4317.

APPENDIX

National Pork Research Priorities

MAIN GOAL: Continued sustainable economic growth of the pork industry with increased resilience to global challenges due to economics, animal health, international trade, environment, and societal demands; This includes climate change mitigation and environmental sustainability.

Animal Care

Expected Outcome:
Novel scientific tools or approaches to support continuous improvement and assessment of practical animal care and wellbeing on and off the farm.

Key Research Areas:

- Enrichment (physical, social and cognitive)
- Euthanasia methods and ethics
- Handling, transportation and lairage; aggression in group housing
- Objective (or practical subjective) assessment of animal care and wellbeing
- Pain management and avoidance

Animal Health

Expected Outcome:
Novel technologies and approaches to mitigate risk of infectious disease and enhance emergency preparedness.

Key Research Areas:

- African swine fever and other foreign animal diseases that could affect the pork industry
- General areas such as biosecurity, disease control, disease resilience, mass euthanasia, euthanized carcass utilization or disposal, antimicrobial usage / resistance, diagnostics, vaccination, microbiomes, etc.
- Other emerging and endemic production limiting diseases
- Regulatory agility e.g. approval of prophylactic products, alternatives to antibiotics and heavy metals such as zinc oxide
- Small-scale production/back yard farming (e.g. biosecurity, production, communication)
- Wild pigs as a disease reservoir and biosecurity risk

Buildings and Equipment

Expected Outcome:

Novel designs, materials and technologies to reduce capital and operating costs, and improve energy efficiency, productivity and animal care at different phases of growth and production.

Key Research Areas:

- Alternative housing designs considering pig wellbeing, economics and societal pressures
- Automatic capture and use of data (e.g. smart sensors, digital technologies, artificial intelligence) for barn and pig management
- Consideration of comfort and safety for pigs and workers
- Lowering capital (e.g. novel materials, 3D printing) and operational costs (e.g. robotics, labour savings)
- Reduced emissions, manure handling/storage, solid/liquid separation, N/P management

Emerging Technologies and Other Research Areas

Expected Outcome:

Readiness to apply emerging technologies such as genomics, metagenomics, metabolomics, gene editing, precision farming, artificial intelligence or other areas that could benefit the industry.

Key Research Areas:

- Breeding and reproduction
- Data governance and exchange for the pork sector
- Economics (macro or micro)
- Emerging technologies to address labour challenges, create more value-added products, and increase productivity
- Ensuring market access
- Genetic improvement of traits such as robustness, longevity, behaviour and pork quality
- Improve productivity, develop new or improved production systems
- Improve sector resilience in response to market and societal pressures, including mental health
- Other applications of genomics or metagenomics e.g. for traceability, product verification, pathogen detection (such as a pen side test), studying antimicrobial resistance genes
- Understanding industry and public perspectives related to current and emerging priorities (e.g. barriers to adoption of improved practices)
- Any other area that could benefit the pork industry

Environment and Climate Change

Expected Outcome:

Scientific tools to assess environmental impact, to identify priorities and practices to improve sustainability (carbon, water, soil/soil erosion, methane, manure, energy and adaptability).

Key Research Areas:

- Adaptation to changing environmental conditions (e.g. heat stress)
- By-product opportunities (e.g. manure, biogas, composting, recycling, feed ingredients)
- Monitoring/benchmarking and further reduction of greenhouse gas emissions
- Opportunities for barn construction/modernization considering energy and water efficiency
- Whole life cycle assessment

Feeding and Nutrition

Expected Outcome:

More ingredient choices as well as nutritional formulations and processes that maximize nutrient assimilation, enhance pig robustness and have positive environmental impact.

Key Research Areas:

- Alternative feed crops and ingredient sources, considering economic and environmental impact
- Alternatives to antimicrobials for enhanced disease resistance and gut health
- Enhanced nutrient efficiency and impact on reduced environmental footprint
- Enhanced welfare and lifetime productivity
- Nutritional strategies during transition phases (e.g. gestation to lactation, piglets at weaning)

Pork Quality and Food Safety

Expected Outcome:

New methods to measure, control and promote the quality and safety of pork.

Key Research Areas:

- Consumer perspectives and support (e.g. how to cook fresh pork)
- Create more and higher value-added products
- Develop new or improved product attributes
- Foodborne pathogen control and enhanced shelf-life
- Opportunities to enhance pork carcass and meat quality assessment and control