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CANADIAN FIELD CROP RESEARCH ALLIANCE | ALLIANCE DE RECHERCHE SUR LES CULTURES COMMERCIALES DU CANADA

CWRC
Canadian Wheat Research Coalition

WGRF
Advancing Agriculture through Research

Canadian National Wheat Cluster 2028-2033

Request for Letters of Intent (LOIs) and Guidelines

DUE DATE: JAN. 15, 2027



BACKGROUND

Funding organizations from across Canada are participating in the development of a Canadian National Wheat Cluster (generally called the Wheat Cluster) for submission to the next federal Agriculture Policy Framework (APF), the successor to the current Sustainable Canadian Agricultural Partnership (SCAP) programming. The current Wheat Cluster, which is funded by the wheat industry organizations and Agriculture and Agri-Food Canada through the SCAP AgriScience Cluster Program, is a $20.5 million five-year investment into wheat research that ends in March 2028. The funding partners are initiating the launch of a request for Letters of Intent (LOIs) for the next APF. The next APF is expected to be accepting funding applications by the fall of 2027 and to be launched by April 1, 2028.

The Canadian Wheat Research Coalition, a collaboration between Alberta Grains, Manitoba Crop Alliance and the Saskatchewan Wheat Development Commission, will be the lead applicant of the next Wheat Cluster. Other Funding Organizations supporting this request for LOIs include the Canadian Field Crop Research Alliance (whose members include Grain Farmers of Ontario, Producteurs de grains du Québec, Atlantic Grains Council, and SeCan Association), and Western Grains Research Foundation.

The funding organizations have worked together to identify the research challenges and opportunities of greatest importance to Canadian wheat producers and to ensure alignment with the priorities outlined in the Halifax Statement (Appendix A). The eligible research priorities provided are intended to guide researchers in the development of LOIs and to define the scope of research activities that may be considered for inclusion in the next APF Wheat Cluster funding application. Researchers are encouraged to propose research that contributes to the long-term competitiveness, sustainability, and profitability of Canada's wheat sector.

PURPOSE OF THIS LOI CALL

The funding partners are seeking Letters of Intent that identify innovative (Appendix B), collaborative and impactful wheat research activities aligned with the wheat research priorities and capable of contributing to a coordinated national wheat research program under the next APF Wheat Cluster. This LOI process will help inform the development of the full Wheat Cluster application and identify potential research activities for inclusion in the next APF Wheat Cluster funding proposal. Funding partners are seeking LOIs that demonstrate strong scientific merit, industry relevance, collaboration, and the potential to generate meaningful benefits for Canadian wheat producers.

WHEAT CLUSTER RESEARCH PRIORITIES

The Canadian Wheat Research Coalition (CWRC) administers the Canadian National Wheat Cluster (Wheat Cluster) and will be the lead applicant for the next Wheat Cluster. The following research priorities were developed collaboratively by Wheat Cluster stakeholders, including Alberta Grains, Saskatchewan Wheat Development Commission, Manitoba Crop Alliance, Canadian Field Crop Research Alliance (CFCRA), Cereals Canada and Western Grains Research Foundation. The CFCRA represents Grain Farmers of Ontario, Producteurs de grains du Québec, Atlantic Grains Council and SeCan Association.

These research priorities align with the Halifax Statement.

Driving Economic Growth & Competitiveness

- Cultivar and germplasm development to improve genetic resistance to pests and diseases and reduce associated losses in yield, grain quality and end-use quality.
- Pre-breeding research to identify and characterize new sources of pest and disease resistance, including their potential effects on wheat yield, grain quality and end-use quality.
- Cultivar and germplasm development to improve yield stability, yield potential, resilience, resource-use efficiency, harvestability and grain and end-use quality, including:

- Improved tolerance to heat, drought and excess moisture, water-use efficiency, and winter survival in winter wheat.
- Improved straw strength, lodging resistance and harvestability.
- Improved phosphorus-use and broader nutrient-use efficiency.
- Improved harvestability and resilience at maturity, including resistance to pre-harvest sprouting, more rapid grain dry-down, and reduced head drop or breakage.
- Development of variety-specific management strategies and decision support tools to optimize genetic potential through genotype x environment x management (G x E x M) interactions, including:
  - ◊ Variety-specific disease, pest and nutrient management strategies.
  - ◊ Predictive tools and models to support variety selection and agronomic decision-making.

Diversifying Markets & Increasing Trade

- Improved grain quality and protein functionality in Canadian wheat to expand market opportunities and strengthen competitiveness.
- Genetic and agronomic management research to improve grain protein content and consistency in eastern Canadian spring wheat varieties to meet market and end-use requirements.

Advancing Science, Research & Innovation

- Research to optimize plant physiological processes that contribute to productivity, yield stability and end-use quality across varying environmental conditions, including:
  - Source-sink relationships affecting nutrient-use efficiency and grain protein accumulation.
  - Photosystem efficiency and its contribution to plant productivity and yield development.
  - Root architecture and its relationship with nutrient-use efficiency, water-use efficiency, plant productivity and yield development.
- Development and validation of artificial intelligence, data science and data management tools to support genetic, breeding, phenotypic and agronomic modelling.
- Development of rapid, non-destructive tools and molecular markers to improve the efficiency of selection for wheat quality traits, including protein functionality and milling properties.
- Application of advanced breeding technologies to improve breeding efficiency and genetic gain.

Enhancing Sector Resilience

- Development of novel crop protection strategies and tools to reduce crop losses and preserve the durability of genetic resistance, including management of weeds, insects and diseases, with additional consideration of viral diseases.
- Development of innovative pest and disease surveillance methods to identify emerging threats and to inform priorities for resistance breeding, with an emphasis on improving the efficiency and co-ordination of regional surveillance efforts. Letters of intent should demonstrate how the proposed activities will complement existing regional surveillance capacity and improve efficiency or co-ordination.

Additional Guidance

LIST OF PRIORITY DISEASES AND INSECTS FOR THE WHEAT CLUSTER

	Canada-wide	Regional
Diseases	Fusarium head blight; rusts (leaf, stripe and stem); leaf spots (e.g., Septoria, tan spot); bacterial blight	*Western Canada:* ergot; loose smut; bunt; wheat streak mosaic. *Eastern Canada:* barley yellow dwarf
Insects	Wheat midge	*Western Canada:* wheat stem sawfly; wireworms; Hessian fly. *Eastern Canada:* cereal leaf beetle

GUIDANCE FOR RESEARCHERS

1. Guiding principles

- Research supported by the Wheat Cluster should contribute to wheat remaining a competitive crop choice for producers.
- Research should support at least one of the following for producers, end users and/or the wheat sector:
  - Improved economic growth outcomes
  - Improved resiliency
  - Decreased risk
- Activity proposals should include clear and measurable anticipated outcomes of the research that aligns with wheat remaining a competitive crop choice, improved economic growth outcomes, improved resiliency and decreased risk. The deliverables should be Specific, Measurable, Achievable, Realistic and Time-Based (SMART). Reporting on progress in achieving these outcomes will be required.
- Research should be pre-competitive and accessible for use in further advancement and collaboration within the scientific community.
- Research activities should demonstrate collaboration and coordination with other researchers and across organizations (regionally and nationally) to leverage and complement expertise and avoid duplication.
- This is a national wheat cluster, and while some research needs are regional, research activities can describe how relevant research learnings and outcomes may be transferred and utilized nationally.
- It is recognized that there is overlap between priorities and research activities may contribute to more than one priority area.

2. Supporting Documents

NB. Please review the following documents before completing the LOI form

- Wheat Cluster Research Priorities
- The Halifax Statement in Appendix A
- Draft Innovation Definition Appendix B
- Guidelines on Variety Development Research in Appendix C
  - E.g. Multi-site, multi-year replicated trials that also collect data to inform predictive modelling and phenotyping needed to inform earlier stage breeding efforts are permitted.

3. LOI application

- The LOI application form in some sections requires information for each of AAFC related research and/or industry /academia research to be listed separately in line with the requirements for the full proposal and the overall APF Wheat Cluster application. For LOIs that have AAFC only or industry only research and collaborators, please complete the relevant sections. This separation at the LOI stage allows for an efficient process for applicants during proposal development.
- Only researchers who will actively contribute to the research activities and have agreed to participate should be included in the LOI.
- A LOI must align with eligible Wheat Cluster Research Priorities.
- Eligible researchers include those in universities, not-for-profit research institutions, and federal and provincial research organizations.
- Research funding may be secured for up to five years from April 1, 2028, to March 31, 2033.
- Proposals that involve broad regional and national collaboration are strongly encouraged. International collaboration should be noted, where relevant.

4. Timelines for Submission

- The process will be carried out in two stages: i) the LOI and ii) full proposal
- **LOI submission deadline: Jan. 15, 2027**
- Successful LOI applicants will be notified of the decision and asked to provide a full proposal for further consideration.
- Full proposals will go through a robust external review process prior to final decisions.

Expected Timelines for LOIs and full proposals (dates subject to change)

ACTIVITY	DEADLINE
LOI invitations	Nov. 16, 2026
LOI submission deadline	Jan. 15, 2027
LOI decision letter and full proposal invitation	March 17, 2027
Full proposal submission deadline	May 31, 2027
Final proposal selection and full proposal decision letters	Sept. 15, 2027

5. LOI Submission Details

***Please complete the Canadian National Wheat Cluster 2028-2033 Letter of Intent Form and submit your LOI in WORD format.**

Send completed LOI (WORD format) by email to:

Constance Chiremba
Director of Research (Sask Wheat)
constance.chiremba@saskwheat.ca

All submitted LOIs will receive an email confirming receipt within 2-3 business days.'

FUNDING ORGANIZATIONS' CONTACT INFORMATION		
Alberta Grains (AG)	Jeremy Boychyn	JBoychyn@albertagrains.com
Canadian Field Crop Research Alliance (CFCRA)	Matthew Czerwinski	mczerwinski@gfo.ca
Manitoba Crop Alliance (MCA)	Lauren Gislason	lauren@mbcropalliance.ca
Saskatchewan Wheat Development Commission (SWDC)	Constance Chiremba	constance.chiremba@saskwheat.ca
Western Grains Research Foundation (WGRF)	Lisa Jategaonkar	lisajategaonkar@wgrf.ca

Appendix A:
The Halifax Statement



The Halifax Statement

Vision

A world-leading agriculture, agri-food and agri-based products sector that is competitive, innovative, resilient and drives economic growth.

The Priorities

Driving Economic Growth and Competitiveness by building domestic capacity and improving productivity and profitability.

Diversifying markets and increasing trade by seizing new, and enhancing existing, opportunities in a complex and evolving global environment.

Advancing science, research and innovation through strategic investment and coordinated action.

Enhancing sector resilience by improving the ability across the value chain to anticipate, withstand and adapt to disruptions and risks.

Guiding Principles

Flexibility, Responsiveness, and Collective Action
The framework will create conditions for success by having the flexibility to adapt to emerging needs and diversity across the country, while also providing the basis for long-term planning and advancing collective outcomes.

Respect Roles and Obligations
Governments will act in accordance with the sharing of constitutional powers and international trade obligations will be respected.

Collaboration and Coordination
Meaningful cross-government, stakeholder and partner collaboration will leverage innovation, expertise, pan-Canadian capacity and provincial and territorial strengths to support effective programs and initiatives, as well as improved regulatory clarity.

Equity, Inclusivity, and Accessibility
Build on relationships in a meaningful way with Indigenous Peoples and consider the needs of underrepresented groups to support sector diversity and participation.

Efficient Administration
Administrative processes are streamlined to improve program delivery, support effective results reporting and enhance client experience.

Accountability and Results
In order to maximize the benefits of shared investments and achieve measurable results, public funds will be managed responsibly while maintaining flexibility of program design and management.

British Columbia · Alberta · Saskatchewan · Manitoba · Ontario · Québec · Newfoundland & Labrador · Nova Scotia · New Brunswick · Prince Edward Island · Yukon · Government of Northwest Territories · Nunavut · Canada

Priorities and Focus Areas for the Next Policy Framework

Driving Economic Growth and Competitiveness

- Increase productivity, profitability and scale by supporting the adoption and integration of tools, technologies, equipment and business practices.
- Strengthen the sector's ability to attract, develop and retain labour and talent, as well as support new entrants and succession planning.
- Support business modernization and investment to enhance domestic capacity, growth, diversification and value-added processing.
- Build sector capacity and advance inclusive growth.
- Improve product quality and consistency to strengthen commercial readiness and competitiveness.

Diversifying Markets and Increasing Trade

- Build on local, domestic and international market development efforts to expand opportunities and further strengthen Canada's food systems.
- Advance diversification of sectors, products, participants and markets, and unlock opportunities for all in the domestic and global marketplace.
- Support market readiness and capacity to ensure Canadian companies are well-positioned for growth and success.
- Enhance coordination and collaboration across both orders of government to strengthen trade promotion and advocacy.

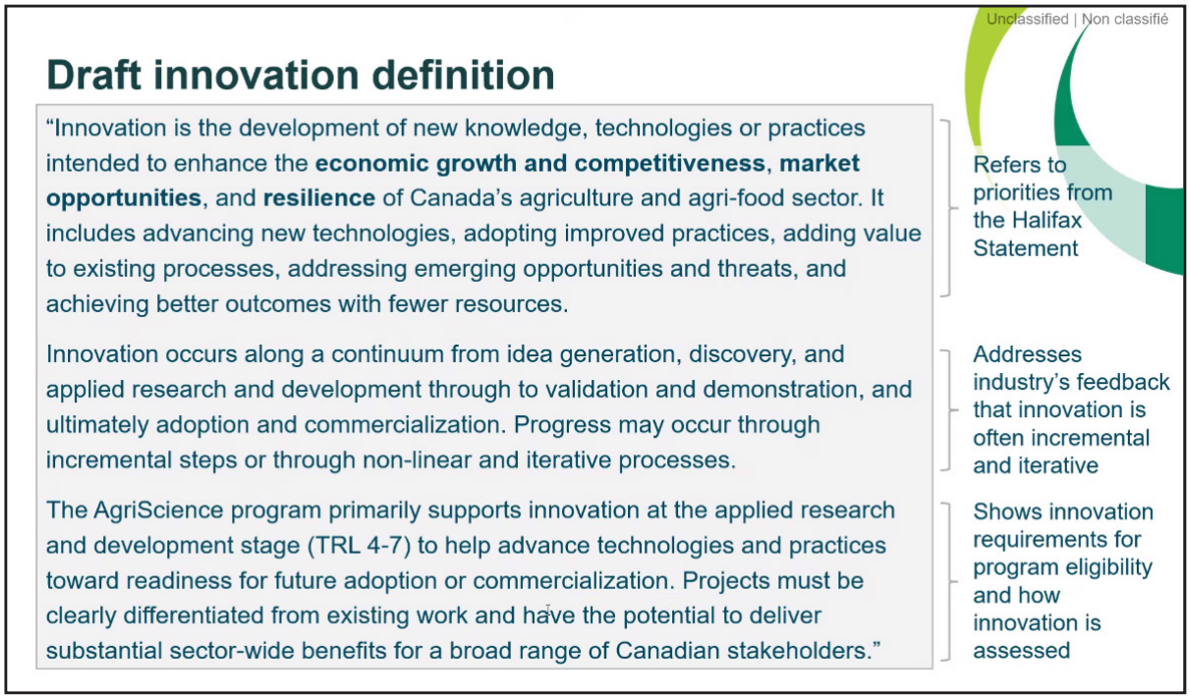
Advancing Science, Research and Innovation

- Strengthen science and research capacity and partnerships across the sector.
- Expand digital agriculture by supporting the development, demonstration and validation of new tools and technologies, including artificial intelligence, and enabling data-informed decision-making.
- Accelerate product innovation through research, development and testing of new or adapted products.
- Support knowledge transfer to advance the adoption and scaling of research outcomes, technologies and best practices.
- Advance inclusive research pathways.

Enhancing Sector Resilience

- Recognize the value of diverse risk management approaches in supporting the sector.
- Advance proactive risk management and climate adaptation.
- Enable sector prosperity and environmental stewardship through sustainable resource management, biodiversity and ecosystem services and reducing greenhouse gas emissions.
- Strengthen public trust and market confidence by enhancing food safety, transparency and assurance systems.
- Enhance disease surveillance, prevention, control and collaboration to safeguard plant health and animal health and welfare, including efforts to reduce antimicrobial resistance.
- Improve value-chain preparedness and continuity through strong emergency planning and support reliable infrastructure.
- Promote workplace safety, health and well-being.
- Continue to improve BRM programs to be responsive and equitable to support producers to manage risks beyond their control.

Appendix B:
Draft Innovation Definition



Appendix C: Guidelines on Variety Development Research

VARIETY DEVELOPMENT

In plant breeding, the program's primary focus on TRL 4–7 generally corresponds to germplasm enhancement and variety development as defined in the Plant Genetics Improvement Continuum. This means supporting innovative applied R&D that develops and characterizes germplasm and applies the results of germplasm enhancement to further refine and deploy varieties in response to shared sector priorities. Activities primarily focused on foundational discovery, pre-market evaluations, advancing late-stage breeding lines toward commercialization, would generally be beyond the program's eligibility.

To better illustrate this:

AAFC developed a graphic, using the work of Field Crop Table - Public/Private Research and Innovation Ecosystem Working Group — that overlays TRLs with the Plant Genetic Improvement Continuum.



Strong rationale ← AgriScience Primary Focus → Strong rationale

TRL	1	2	3	4	5	6	7	8	9	–
Description	Idea generated	Feasibility studies	Basic components validated through models or in the laboratory under controlled conditions	Partially-integrated components validated in the lab under controlled conditions	Integrated components validated in a simulated environment under controlled but realistic conditions	Pilot-scale prototype in a simulated environment under controlled but realistic conditions	Full-scale prototype in an operational environment under limited but realistic conditions	Final technology in an operational environment under all expected conditions across crops & regions	Final technology further refined and successfully deployed	Technology openly available on the market
Stage in Plant Genetics Improvement Continuum	**Foundational Science** Generating knowledge and tools to be used in germplasm enhancement			**Germplasm Enhancement** Applying foundational science to develop and characterize germplasm		**Variety Development** Applying the results of germplasm enhancement to refine and develop commercially-ready varieties		**Pre-Market Evaluation** Adaptation testing for registration and commercialization requirements (crop specific)		**Commercialization** Activities related to seed production/plant multiplication of varieties through release partnerships
Activity description	**Prerequisite Science** Feeds into germplasm enhancement. Involves gaining crop and/or trait specific knowledge, i.e., the biological basis of traits. • Plant physiology • Plant pathology • Entomology • Plant/seed chemistry **Discovery Science** Science that feeds into germplasm enhancement but can also serve as a foundation for activities outside of crop genetic improvement. • Phenomics • Transcriptomics • Metabolomics • Genomics • Epigenetics **Tool Development** Advancement of tools or novel techniques, that may have applications beyond the crop or research program • Robotics • Artificial intelligence • Marker development • Prediction models			**Preservation of Genetic Diversity** • Germplasm preservation • Germplasm collection **Introduction of Genetic Diversity** Introduction of genetic diversity into germplasm. • Crossing • Gene editing • Mutation breeding **Germplasm Evaluation** Characterizing germplasm and/or early generations resulting from a cross. Activities involved may include: • Phenotyping • Genotyping • Validating the effectiveness of a tool **Methodology Improvement** Work that can be directly applied to the germplasm enhancement of the crop, in the areas of phenotyping methods, crossing, or methods for improving efficiencies in the cycle		**Elite Germplasm/Lines** Assessment and enhancement of elite germplasm. Enhancement may involve: • Targeting genes with molecular tools and technologies to incorporate enhanced germplasm • Creating targeted crossings **Nursery** Testing of germplasm (early or elite lines) for trait validation. Tests may also involve: • Resistance validation • Agroecological studies • End point quality assessments **Replicated Trials of Early Breeding Materials** • Single -year/ multilocation trials for the purpose of preliminary agronomic testing • Broad adaptation **Replicated Trials of Advanced Breeding material** • Multi-year/location trials for the purpose of preliminary agronomic testing • Broad adaptation (GXE) • Resistance validation		**Adaptation Testing** Testing of candidate varieties for key traits important to producers and industry. May occur under parameters set by a crop-specific committee. • Broad adaptation (GXE) • On farm trials • Registration Trials • Merit Testing		**Licensing** • Exclusive/non-exclusive market access • Royalty management streams **Seed Increase or Plant Propagation** • Seed increase • Nuclear stock management **Marketing** • Knowledge transfer • Demonstration trials • Websites • Seed catalogues **Variety Performance Trials for Producers** • Standardized variety performance testing for farmers

Tool development
Advancement of tools or novel techniques such as robotics, AI, marker development, and prediction models

DRAFT