SF4C Sustainable Food Systems for Canada
Systèmes alimentaires durables pour le Canada

INNOVEAT » Hackathon Information

Welcome to the InnovEAT Hackathon

SF4C is proud to host the InnovEAT Hackathon. This event is designed to spark collaboration, creativity, and bold thinking around some of the most pressing challenges facing our food system today.

Over the course of this hackathon, students, researchers, and community partners like you will brainstorm, design, and pitch innovative solutions to issues like food insecurity, climate change, nutrition, and food supply resilience. With the guidance of mentors, the support of workshops and resources, and the insights of our judges, participants are encouraged to transform fresh ideas into practical pathways for impact.

InnovEAT is a space for learning, teamwork, and leadership. We are so excited to welcome you to this year's hackathon and to introduce the incredible facilitators, mentors, and judges who will be guiding and inspiring participants along the way.

» Facilitators

Jessie Kennedy
Manager, John F. Wood Centre

Amy Lowther
Intern, John F. Wood Centre

Aaron Misener
Communications Manager, Arrell Food Institute

Jonathan Parkes
PhD Candidate, Sessional Lecturer in Management, University of Guelph

Jeanna Rex
Education Lead, Arrell Food Institute

» Emcee

Tyler Zemlak
Manager, Innovation Strategy, Research Innovation Office (RIO), University of Guelph

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Hackathon Information

Judges

Laura Arrell
Managing Director, The Arrell Family Foundation

Jessica Bowes
Assistant Vice-President, Research, University of Guelph

Dean Chudleigh
Co-Owner, Chudleigh Farms

Mohamad Yaghi
Vice President of Innovation Hub and AgExpert, FCC

Nevin McDougall
Board Chair, Agricultural Research and Innovation Ontario

Mentors

Sara Edge
Chair in Food, Policy, & Society Arrell Food Institute, Associate Professor University of Guelph

Evan Fraser
Director, Arrell Food Institute, Professor, University of Guelph

Janice Leboeuf
Sustainable Agriculture Lead, Arrell Food Institute

Andrew MacDougall
Professor, Integrative Biology, University of Guelph

Sadaf Mollaei
Chair in Business of Food, Arrell Food Institute, Assistant Professor University of Guelph

Amy Proulx
Professor and Academic Program Coordinator, Niagara College

Alex Sawatzky
Creative Advisor Arrell Food Institute

Elizabeth Shantz
Knowledge Mobilization Manager, Arrell Food Institute

Wanhong Yang
Professor Geography, Environment and Geomatics, University of Guelph

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Community Partner - ALUS

ALUS

Jen Hoesen
Director of Data and Analytics, ALUS

ALUS Canada (Alternative Land Use Services) is a national, community-led organization dedicated to supporting farmers and landowners in restoring and enhancing ecosystem services across Canada. By providing innovative solutions that integrate agriculture with environmental stewardship, ALUS helps landowners and communities implement projects that restore natural habitats, improve biodiversity, and contribute to climate resilience. Founded in 2007, ALUS works with farmers, ranchers, Indigenous communities, and municipalities to create "net new nature" on the landscape. This is achieved through voluntary participation in ALUS's restoration programs, where landowners adopt sustainable practices that enhance ecosystem services like carbon sequestration, water filtration, soil health, and wildlife habitat restoration.

Challenge: *Communicating Biodiversity Value: Influencing Policy and Investment*

Despite decades of ecological research and restoration efforts, biodiversity outcomes remain difficult to track and translate into concrete economic and environmental benefits. This, in turn, means it can be challenging to communicate the value of biodiversity outcomes and secure investment for programs and practices that support ecosystem services. While projects like New Acre by ALUS are already generating carbon credits, there is no similarly trusted, scalable model for valuing biodiversity gains.

Validating biodiversity improvements often requires starting from scratch—re-counting species, collecting new data, and investing heavily in monitoring. Yet the science is clear: restored ecosystems consistently support greater biodiversity, which in turn supports improved soil and water quality, pollination services, nutrient retention and overall food system resiliency.

ALUS, in partnership with farmers and rural communities, has successfully restored significant natural habitat across Canada. Its vision is to grow a marketplace where businesses, governments, and municipalities can finance ecosystem restoration—not just for carbon, but for broader ecological benefits, including biodiversity. However, despite scientific consensus about the benefits of biodiversity, the policy and funding landscapes remain cautious, often requiring redundant and costly data. ALUS is interested in learning about research, best practices and case studies that can help to inform their approach in communicating the value of biodiversity to decision-makers.

Challenge Statement: ***How can ALUS effectively measure and communicate the established value of biodiversity outcomes to decision-makers—such as policymakers, program designers, and funders—to support their inclusion in environmental policy and funding programs across Canada?***

Biodiversity is critical to Canada's food system sovereignty, safety, and resilience—it supports healthy soils, clean water, pollination, and natural pest control. Restored ecosystems help farms adapt to climate change and reduce reliance on costly external inputs. By recognizing and valuing biodiversity outcomes, Canada can build a stronger, more self-reliant and future-ready food system.

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Community Partner - Agriculture and Agri-Food Canada: Strategic Policy Branch (SPB)

Kevin Norris
Director, Resilient Agriculture Policy Division, Agriculture and Agri-Food Canada

Jason Baillargeon
Director, Food Policy Division, Agriculture and Agri-Food Canada

Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada

Agriculture and Agri-Food Canada is the federal department responsible for supporting the agricultural and agri-food sector through initiatives that promote innovation and competitiveness. Its mandate spans everything from farm-level production to global market strategies. The Strategic Policy Branch (SPB) acts as AAFC's central hub for policy development, setting long-term direction and actions to achieve the department's vision and objectives. It supports complex, cross-cutting initiatives that align with departmental and federal priorities by coordinating multi-stakeholder policy design and developing evidence-based policy advice.

Challenge: *Unlocking the Potential of Controlled Environments: Strengthening Canada's Food Resilience*
Canada relies on imports for 80% of fruits and 60% of vegetables, making its food supply vulnerable to seasonal gaps, global market shifts, and various shocks like climate events, trade disruptions, geopolitical uncertainty, and disease outbreaks.

Controlled Environment Agriculture (CEA) encompasses systems such as hydroponics and aeroponics, along with enabling technologies like energy management, temperature control and automation that can lengthen the growing season or even allow for year-round production. The most common form of CEA in Canada is the greenhouse sector, which has doubled in size in a decade to reach $2.7 billion of sales in 2024. Canada's Greenhouse production is largely limited to three crops (tomatoes, cucumbers, and peppers) primarily destined for the United States. Diversifying the types of CEA crops grown, the systems employed and where they are grown in Canada has broad benefits for the sector and public. However, significant setup barriers and high operational expenses, including energy, are competitive disadvantages for Canadian CEA relative to imported, conventional field-based agriculture.

As Canada moves towards building its economy to connect and transform the country, are there emerging or untapped regional sources of competitive advantage to realize the potential of CEA to broadly serve the domestic market? Are there supporting industries, available infrastructure, distribution hubs, and energy assets (e.g., residual heat from AI data centres) that could be leveraged? How can Canada turn its energy and climatic challenges into competitive advantages, creating a more sustainable and resilient food system for the future?

Challenge Statement: What emerging or untapped combination of resources can provide Canada's controlled environment agriculture sector with a competitive advantage and strengthen Canada's food security?
This challenge is important because Canada imports most of its fruits and vegetables, making our food supply vulnerable to global disruptions. Controlled Environment Agriculture (CEA) can boost local, year-round production—but high costs and limited regional adoption are major barriers.

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Community Partner - AuX labs

Laura Hanley
Product Developer,
AuX labs

AuX Labs Ltd is a private biotechnology startup founded in 2021 that focuses on precision fermentation. AuX Labs develops nature-identical animal proteins beginning with milk casein via engineered yeast strains and innovation fermentation processes to provide high functionality, animal free cheese proteins that mimic the taste, meltability, and stretch of traditional dairy products.

Challenge: ***Scaling Animal-Free Dairy: The Future of Canada's Alternative Protein Supply***
Canada's food system faces growing pressure to meet protein demands while reducing environmental impact and strengthening food sovereignty. Traditional dairy production is resource-intensive, contributing significantly to greenhouse gas emissions. Recombinant dairy protein production via precision fermentation offers a scalable, sustainable alternative, using engineered microbes to produce animal-free proteins such as casein. This technology supports decentralized, lower-impact protein production, enabling Canadian food systems to become more resilient to climate change, disease outbreaks, and global supply chain disruptions.

Despite the technological promise, consumer trust and regulatory clarity remain major barriers. Public awareness of precision-fermented foods is low, and skepticism may grow without thoughtful communication and transparent standards. The success of this sector hinges on how well Canada can align consumer education, labeling transparency, and regulatory innovation with the pace of technological development.

Challenge Statement: How can Canada accelerate the adoption of precision-fermented dairy proteins by building public trust, establishing clear and transparent labelling frameworks, and navigating regulatory challenges—while ensuring scientific accuracy and supporting national goals around climate, sustainability, and food sovereignty?

This challenge supports Canada's ambition to lead in sustainable food innovation. Precision fermentation represents not just a technological leap, but a strategic opportunity to reduce emissions and resource use, strengthen domestic food security, reduce reliance on imports and expand Canada's footprint in alternative protein markets.

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Community Partner - Martin's Family Fruit Farm

Martin's — EST 1971 — FAMILY FRUIT FARM

Shannon Elie
Director of Food Safety and Innovation, Martin's Family Fruit Farm

Lindsey Okkerse
Martin's Family Fruit Farm

Martin's Family Fruit Farm is a multi-generational, family-owned business rooted in the rich agricultural landscape of Southern Ontario. Originally established as a traditional apple orchard, the company has grown into one of Canada's leading apple growers and processors, renowned for both its high-quality fresh apples and innovative value-added apple products.

Challenge: *Reimagining Apple Pomace: Turning Waste into Value*
Canada's food system faces growing pressure to reduce waste, lower environmental impact, and find more sustainable ways to feed a growing population. Food processing byproducts—like apple pomace—are often overlooked opportunities in this space.

Martin's Family Fruit Farm operates a high-speed apple puree processing line that produces over 250,000 kg of apple pomace annually. This byproduct — composed of apple peels, stems, and seeds — is currently diverted to compost. While this avoids landfill waste, this biomass holds untapped potential. Apple pomace contains fiber, antioxidants, natural sugars, and polyphenols, which could be repurposed into a range of innovative products or ingredients—from functional foods and plant-based materials to cosmetics, packaging, biofuels, and more. As a company committed to sustainability, innovation, and circular agriculture, Martin's is eager to explore new directions that turn this byproduct into something purposeful.

Challenge Statement: How might Martin's transform apple pomace into a valuable product or ingredient that reduces food waste and creates economic or environmental benefits? What innovative, sustainable, and feasible solutions are there to upcycle apple pomace into something new — whether it's a consumer product, ingredient, material, or service?

This challenge is a unique opportunity to push the boundaries of circular food systems. By transforming apple pomace into valuable products—such as food ingredients, sustainable materials, or bio-based solutions—we can build a more circular, resilient, and sustainable Canadian food system that supports both environmental and economic goals.

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Community Partner - The Ontario Ministry of Agriculture, Food and Agri-Business

Ontario

Naomi Horst
Policy Advisor, Environmental Stewardship Policy Unit, Ontario Ministry of Agriculture, Food, & Agri-Business

Eric Franke
Engineering Specialist, Engineering & Innovation Unit, Ontario Ministry of Agriculture, Food, & Agri-Business

The Ontario Ministry of Agriculture, Food and Agri-Business is the provincial government body responsible for supporting the growth, sustainability, and innovation of Ontario's agriculture, food, and rural sectors. It plays a central role in policy development, regulation, economic development, research, and capacity building across the province's agrifood system. OMAFA works to ensure that Ontario's food supply is safe, competitive, and sustainable, while promoting the economic vitality of rural communities and enhancing stewardship of natural resources.

Challenge: ***Cultivating Tomorrow: Designing Data-Driven Tools for Climate-Ready Farming***
Climate change is reshaping Ontario's agricultural landscapes in profound ways. From increasing drought risk and flood events to the rise of invasive pests and diseases, these environmental shifts are putting pressure not only on food production but also on the critical ecosystem services farms provide — such as carbon sequestration, water filtration, biodiversity support, and climate regulation. While science is clear about these broad impacts, the local effects of climate change are highly variable and difficult to predict. This makes it hard for farmers and policymakers to plan for long-term sustainability and resilience.

Challenge Statement: How might we develop a data-informed tool — using resources like future climate projections from the Ontario Climate Data Portal — that helps identify likely local-scale climate impacts and supports resilience planning at the farm or regional level?

The tool should be designed for use by farmers (individually or collaboratively) or government stakeholders, enabling them to assess vulnerabilities and determine the most effective actions or strategies to build resilience. Solutions should aim to produce measurable environmental benefits (such as enhanced ecosystem services), while also supporting economic viability and social well-being across agri-ecosystems.

This challenge is important because it supports the creation of tools that translate climate data into action — strengthening Canada's ability to build a sovereign, resilient, and sustainable food system in an era of uncertainty. It equips those on the ground — farmers, manufacturers, policymakers — with the insights they need to adapt, protect ecosystems, and secure our food future.

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Community Partner - Riverside Natural Foods Ltd.

RIVERSIDE™ NATURAL FOODS LTD.

MADEGOOD | GOOD TO GO

Shenali Madhanaroopan
Corporate Impact Analyst at Riverside Natural Foods Ltd.

Jessica Cusovich
Technical Innovation Manager, Riverside Natural Foods Ltd.

Riverside Natural Foods is a Canadian, family-owned company committed to creating innovative, delicious, and nutritious snack foods using only clean-label, plant-based ingredients. Best known as the maker of **MadeGood®**, Riverside has become a leading player in the natural snacks industry, both in Canada and internationally.

Challenge: *The Great Canadian Re-Invention*
Canada's food system generates millions of tonnes of edible by-products, co-products, and food-grade waste each year, from farm to processor. Despite their untapped nutritional and functional potential, these materials are often discarded or downcycled due to a lack of infrastructure, innovation, or market integration. At the same time, food manufacturers like Riverside Natural Foods are actively seeking clean-label, high-performance ingredients that meet growing and rapidly evolving demand for healthier, lower-sugar, and climate-conscious foods. These ingredients offer health benefits like added fiber or protein, improved texture, and lower sugar content, while meeting strict product criteria such as gluten-free, organic, kosher, and vegan certifications, ones that resonate with today's health-aware and environmentally conscious consumers.

Challenge Statement: How might we transform Canadian farm-level co-products, by-products, or food-grade waste into functional, value-added ingredients that enhance nutrition or texture—such as adding fiber or protein—while maintaining great taste and quality for Riverside's soft-baked bars and other potential products?

To reflect Canada's diverse and resilient food landscape, the ingredient must be gluten-free, organic, kosher, and vegan, and supported by a Canadian supplier or processor.

By reimagining food waste and by-products as valuable resources, this challenge promotes a circular innovation approach—keeping nutrients and economic value within Canadian borders, reducing environmental impact, and fostering a more sustainable, resilient, and equitable food system.

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Community Partner - The Sharing Place Food Centre

THE SHARING PLACE FOOD CENTRE

Lesley McMullin
Food System Director, The Sharing Place Food Centre

Chris Peacock
Executive Director, The Sharing Place Food Centre

The Sharing Place Food Centre is a vital community hub in Orillia, Ontario, dedicated to increasing access to healthy, nutritious food for individuals and families facing food insecurity. As a charitable, non-profit organization, The Sharing Place serves thousands of residents each year through its food programs, education initiatives, and community partnerships.

Challenge: *Fork in the Road: Navigating Our Food System*
Canada's food system is under immense pressure — and nowhere is this more visible than at the local level. Our local food system stands at a crossroads. Pressures like farmland loss, rising food insecurity, declining food literacy, and gaps in food infrastructure are symptoms of a broader, interconnected challenge. These issues erode food sovereignty, community resilience, and the health of both people and the planet — yet they are often addressed in isolation.

Our food system is interconnected, yet we continue to approach its problems in silos. Food insecurity, poor food literacy, supply chain gaps, and farmland loss are all part of a larger picture — one that demands a systems-based response. Without a way to see and understand the whole system, it's easy for communities and decision-makers to overlook root causes and miss opportunities for collaboration, innovation, and resilience-building.

Challenge Statement: How might we co-create an early-stage prototype or concept for a digital, interactive Local Food Systems Dashboard that helps communities track, map, and visualize key elements of their local food system — such as food insecurity, access, production, infrastructure, food literacy, and the local food economy — in ways that are educational, actionable, and easy to engage with?

By highlighting local assets — like farms, processors, markets, and school food programs — the dashboard strengthens community self-reliance and local food economies. It helps shift focus from charity-based models to community-driven solutions rooted in justice, sustainability, and shared knowledge. By addressing this challenge, Canada can move toward a more resilient, just, and sustainable food future that supports the well-being of people and the planet.