

# AIC Agri-Food Research and Innovation Summit Looking Ahead to 2025

## GIFS' Priorities to Catalyze and Drive Innovation

Steven Webb (CEO, GIFS)

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Founding Partners:

**Nutrien™**  
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of  
Saskatchewan

 UNIVERSITY OF  
SASKATCHEWAN

[www.gifs.ca](http://www.gifs.ca)

# ABOUT US

- Established in 2012
- Private-Public model
- Founding Partners:



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# ABOUT US: VISION AND MISSION



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## Our **vision** inspires us

A world where everyone has access to safe and nutritious food

## Our **mission** drives us

We work with partners to discover, develop, and deliver innovative solutions for the production of globally sustainable food





# Looking Ahead to 2025



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## Visioning: Canada ranking very high on innovation efficiency outcomes:

- A global leader in ag & food tech
- Advancing closer to GIFS' vision of **a world where everyone has access to safe and nutritious food**
- Agriculture and agri-food stakeholders working **interdependently** to deliver innovative solutions for sustainable food security





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## Looking Ahead: The Challenges

- Canada's innovation performance is under-achieving with a less than impressive track record: '9-30-60' – 9<sup>th</sup> in research dollars spent; 30<sup>th</sup> in outcomes achieved; 60<sup>th</sup> in innovation efficiency
- ***Innovation success*** is measured in patents, licenses, new company start-ups, commercialization, job creation, new products
- Agriculture/agri-food innovation ecosystem is dispersed, operates in silos, each area working semi-independently

# PRIORITY ONE – Connection and Collaboration



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## Break down silos: **Innovation is a team sport**

**Opportunity** for an agriculture/agri-food innovation **connector and catalyst** that delivers successful outcomes:

- Connecting stakeholders to work together
- Sparking **sustainable** innovation
- Driving commercialization
- Bridging challenges with innovative solutions



\*Unsplash/Nick Fewings

# GIFS is a *Connector*



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GIFS is agriculture's innovation catalyst and a connector for the agri-food ecosystem

- **We Advance Innovation:** GIFS combines expertise, specialized facilities and specialized equipment to drive innovation with a focus on 'big issue' agri-food challenges (e.g. climate change, nutrition, CO2 sequestration)
- **We Bridge Commercialization:** GIFS combines technology and expertise to commercialize ideas and innovation from the lab bench up and down the value chain
- **We Serve as a Service Connection Bridge:** GIFS, with its globally respected expertise and connections, provides a valuable link to enhance trade and improve research and business relations

# PRIORITY TWO: The Innovation Pipeline

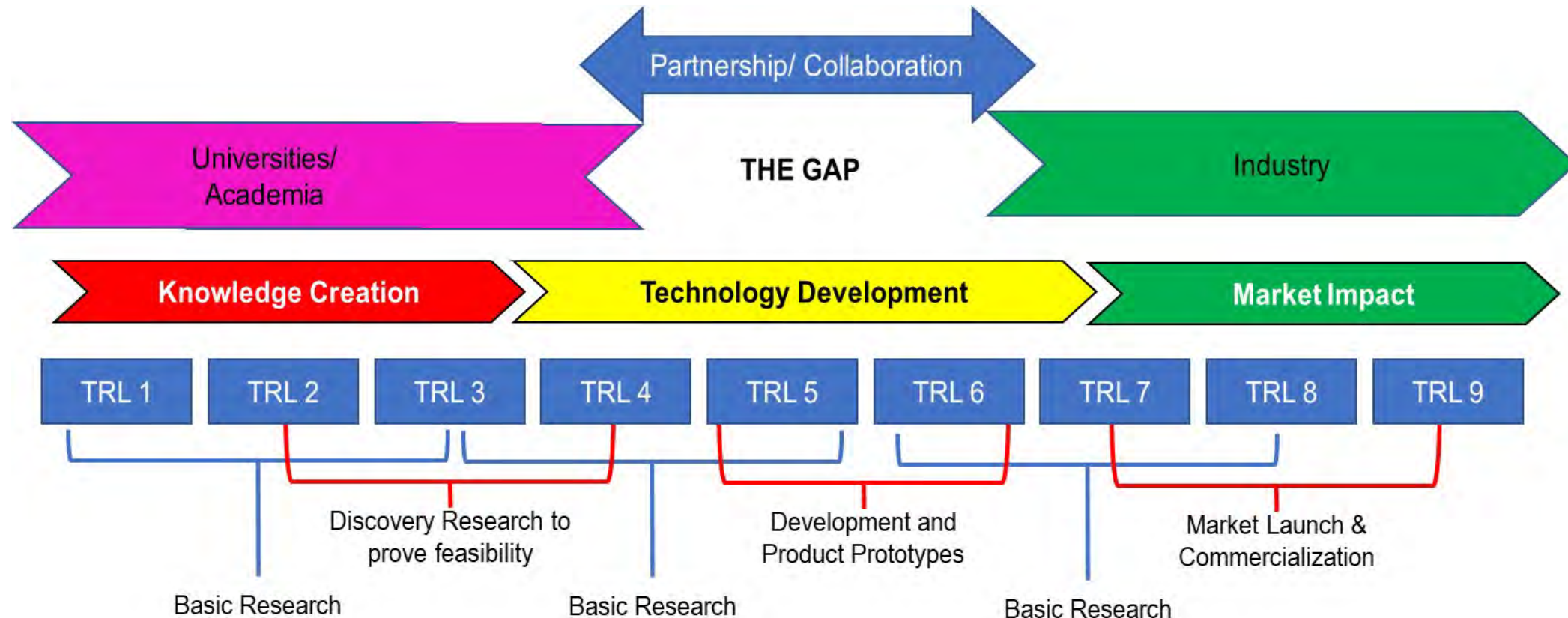


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# Bridging the Innovation Gap



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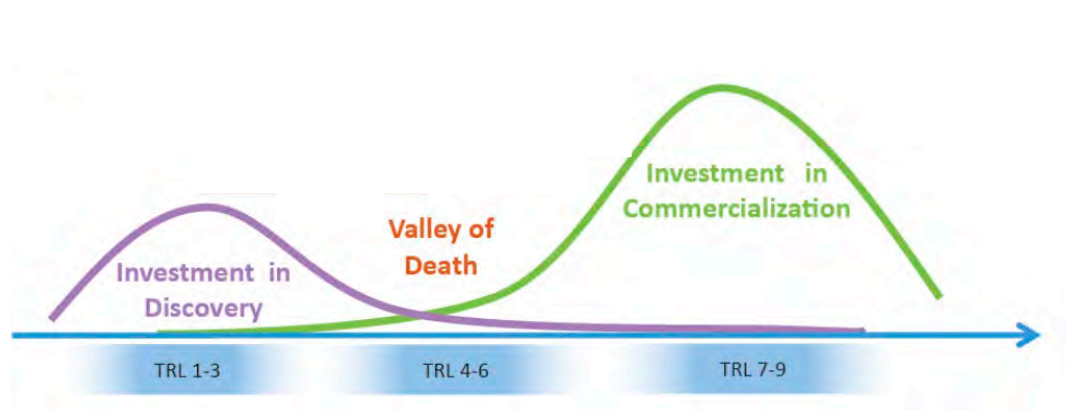
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## The GAP is also referred to as the “Valley of Death”

- Combination of skills, capability, infrastructure, expertise - not just funding
- Challenges in the GAP are more than technical; can include market, scale-up, process, regulatory
- Business **incubators and accelerators** have been deployed and have worked for the **technology and pharmaceutical business verticals**
- For Agtech: Structural differences in the industry and the technology make the gap difficult to bridge. **Different support systems are required**



# Inherent Structural Challenges of Agtech



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- Timelines longer
- Funding levels required higher given the timeline
- Really no pre-competitive space in Ag Tech industry
- Regulatory bottlenecks and public acceptance issues late stage
- Need to focus less on pure technology play
- Value chain and de-risking is well defined in Pharma based on the path to impact and well understood valuation jumps not so for Ag Tech



# Build Effective Support Systems



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## Agtech needs more than accelerators and incubators

GIFS is catalyzing innovation by:

- Building and sustaining support systems around the development of ag & food tech; and
- Advancing agtech from discovery to development to delivery

Examples:

- GIFS Product Development Entity
- Global Agri-Food Advancement Partnership (GAAP) Member



# Global Agri-Food Advancement Partnership

Bridging  
the Gap



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## Existing Incubators

- Short 3 -4 Month Cohorts
- Limited Investment of \$25M to \$70M
- Focus on Strategic Planning
- Strength in Leveraging Investor Network
- No Engagement with Market (limited)
- No Scale Up Capabilities

## Agri-Food Advancement Centre

- Long Term (1 -3 year) Custom Relationship
- Investments of up to \$500M or more
- Focus on advancing through the innovation pipeline
- Strength in navigating AgTech Commercialization
- Scale up opportunities



# PRIORITY THREE: Build Scale



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We need platform technologies for research, development and agtech, to:

- Accelerate
- Add scale
- Increase our impact
- Enhance synergy in our ecosystem



# GIFS Tech Platform: Omics and Precision Agriculture Laboratory (OPAL)



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- State-of-the-art facility providing combined **genomics, phenomics and bioinformatics** services to Canada's agriculture and food sectors
- One-stop shop for the complete analyses of microbial, plant and animal samples





# GIFS Tech Platform: Omics and Precision Agriculture Laboratory (OPAL)

- Canada's only facility providing integrated omics analyses and precision agtech
- Current clients: National research labs, universities and private companies in Canada, the US and the EU
- Led by GIFS and a partnership between NRC, AAFC and the University of Saskatchewan



# GIFS Tech Platform: Engineering Biology



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- Engineering biology expected to reach \$2-\$4 trillion dollars between 2030 and 2040
- Facility will use automation, biology and computation to produce the reagents, peptides, enzymes and other materials industry needs to deliver products on a large scale



# GIFS Tech Platform: Engineering Biology



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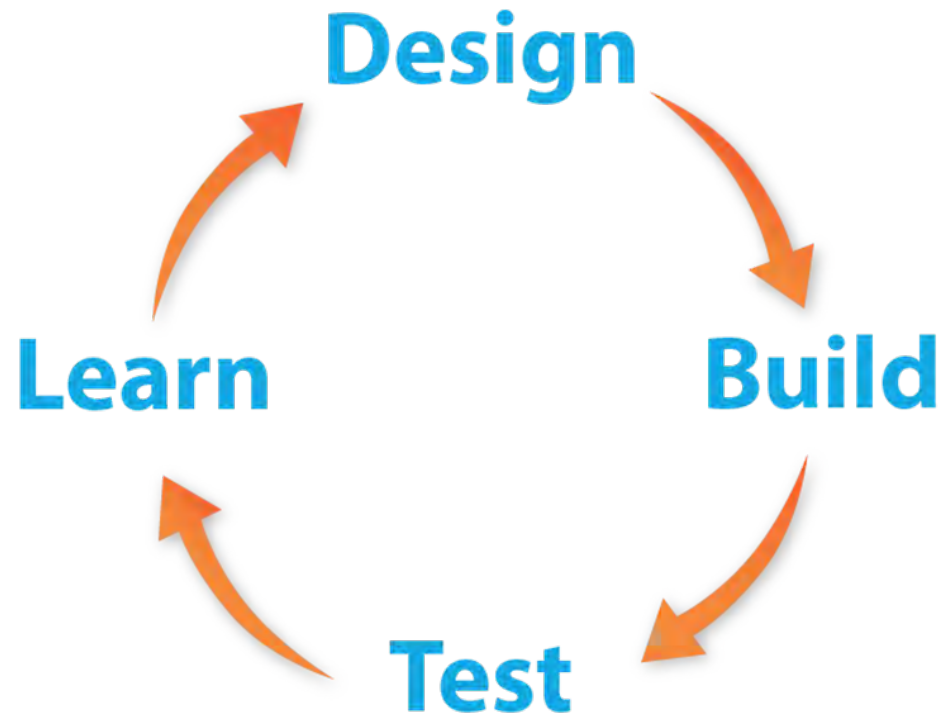
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- Will make food production more efficient, increase the nutritive value and flavour of food and even create entirely new food products
- Platform will be used to make plants and animals more resistant to disease and drought
- Will scale up numerous 'creative' processes in several different sectors – ag. and food, healthcare, energy, the environment, manufacturing, etc.

# Engineering Biology – How Does It Work?

- Engineering Biology platforms are critical - they enable the discovery, development and commercialization of innovations by accelerating the Design-Build-Test-Learn Cycle



- Accelerate the learning cycle while reducing cost
- Enable Scale
- Enable existing biomanufacturing as well as the creation of new tools and technologies

*Sastry-Dent et al 2015 In Vitro Cellular & Developmental Biology*

# Engineering Biology Platform



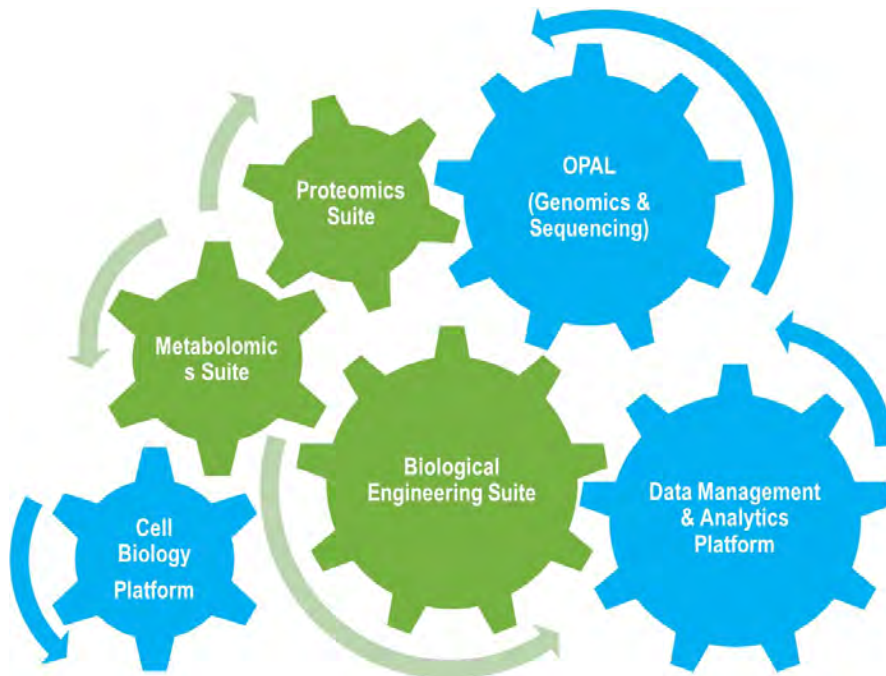
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- GIFS' agriculture and food Engineering Biology platform is comprised of three suites (green)
- The Engineering Biology platform (green) is complementary and integrated into GIFS' existing platform technologies (blue)



- Leverage sequencing & bioinformatics capability and capacity
- Leverage computation capacity through Copernicus
- Create additional synergies for our OPAL, Cell Biology and Data Analytics platforms



## GIFS Tech Platform: Data Management and Analytics

- Enables development, deployment and application of digital technologies and tools – helping GIFS and stakeholders improve management and use of scientific data
- Promotes the use and reuse of R&D data to enable new scientific technologies and tools that will advance food security
- Expands scientific capacity to enhance digital agriculture, accelerate breeding, increase quality crop yield and build resilience to climate change





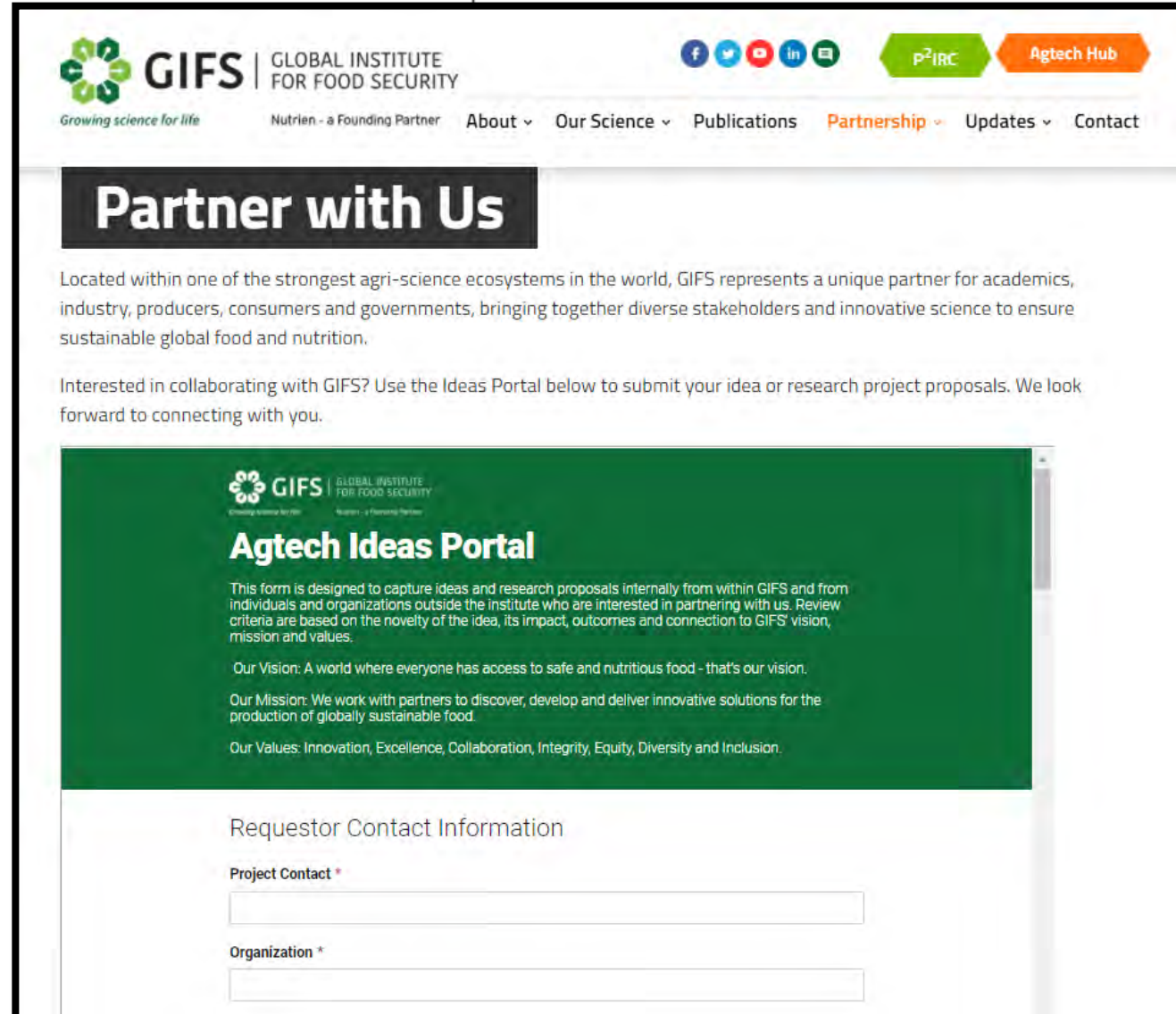
# Conclusion

- We all have a role to play to advance agri-food research and innovation in Canada
- We need to recognize Canada's current **strengths as a powerhouse in sustainable agriculture:**
  - Appreciate the impact the agri-food sector has on the economic, environmental and social sustainability of Canada and country's we export our products to
  - Measurement is critical to benchmark Canada's agri-food sustainability leadership
  - The **National Sustainability Index for Agri-food Performance** is helping achieve these benchmarks to show Canada as a leader of sustainable, safe and responsibly-produced food
- Our combined efforts across the ag. and food value chain will help establish Canada's leadership and deliver global impact for sustainable food security

# Partner with GIFS

## GIFS is open for business.

- Connect with us at [gifs.ca/partners](https://gifs.ca/partners) and let's help advance your innovation and bring it to market
- Web: [gifs.ca](https://gifs.ca)
- Email: [partnerwithus@gifs.ca](mailto:partnerwithus@gifs.ca)



The screenshot shows the GIFS website header with the logo, navigation menu, and social media links. The main content area features a 'Partner with Us' section with a description of GIFS and a link to the 'Agtech Ideas Portal'. Below this is a form titled 'Agtech Ideas Portal' with a green background, containing a description of the portal's purpose and a section for 'Requestor Contact Information' with input fields for 'Project Contact' and 'Organization'.

**Partner with Us**

Located within one of the strongest agri-science ecosystems in the world, GIFS represents a unique partner for academics, industry, producers, consumers and governments, bringing together diverse stakeholders and innovative science to ensure sustainable global food and nutrition.

Interested in collaborating with GIFS? Use the Ideas Portal below to submit your idea or research project proposals. We look forward to connecting with you.

**Agtech Ideas Portal**

This form is designed to capture ideas and research proposals internally from within GIFS and from individuals and organizations outside the institute who are interested in partnering with us. Review criteria are based on the novelty of the idea, its impact, outcomes and connection to GIFS' vision, mission and values.

Our Vision: A world where everyone has access to safe and nutritious food - that's our vision.

Our Mission: We work with partners to discover, develop and deliver innovative solutions for the production of globally sustainable food.

Our Values: Innovation, Excellence, Collaboration, Integrity, Equity, Diversity and Inclusion.

Requestor Contact Information

Project Contact \*

Organization \*

# Thank You



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