ONTARIO AGRI-FOOD INNOVATION ALLIANCE

GRYPHON’S LAAIR PROGRAM GUIDE

PRODUCT DEVELOPMENT GRANT

OCTOBER 30, 2019
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**Gryphon’s LAAIR Program Overview**

This guidance document is focused on program details and the application process for the *Gryphon’s LAAIR Product Development Grant*.

**PURPOSE**

The purpose of this grant is to support the creation and optimization of a Minimum Viable Product (MVP) which has a strong potential to be commercialized and benefit the Ontario agri-food industry.

**VISION**

Gryphon’s LAAIR (GL) Grants were created by the Ontario Agri-Food Innovation Alliance to provide financial support to UofG researchers who have identified an opportunity to accelerate adoption of new commercially viable technologies that will make the Ontario agri-food industry more competitive. These grants aim to increase the number of UofG technologies that are adopted for use by the Ontario agri-food industry.

The GL grants provide financial support for new technologies developed from previous applied research projects that have the potential to evolve into real products and services that will help grow Ontario’s economy and make it more globally competitive.

New and disruptive technologies need continual support from the time they are first created and discovered to the time they are launched into the market as new product. As these newly created technologies mature – so does their Technology Readiness Level (TRL, see Appendix). GL Product Development Grants are meant to provide support to new technologies (TRL 3-6) immediately after completing a GL Market Validation Project or similar work to confirm there is a sufficiently large market opportunity to sustain/adopt a new product. The GL grants enable researchers to de-risk a technology and optimize the features most desired by the commercial market, which should maximize the probability that the technology eventually gets adopted and used.

**BACKGROUND**

Improvement of the Ontario agri-food sector depends on the continual support of new technologies with research that enables these technologies to mature into Minimum Viable Products (MVP) that have economic impact in the marketplace. MVPs require support from the time of discovery often called Technology Readiness Level 1 (TRL 1) to full maturity (TRL 9) when it is launched into the marketplace. Product Development Grants provide support after a significant amount of applied research has been completed and the market need for your new technology has been validated (see Market Validation Grants).

Product Development Grants are designed to enable UofG researchers to take proven applied research results, often called new technologies, and develop them into a focused, useable, and practical products that can be tested, improved, and shared with potential customers for feedback and eventual commercialization. The first feasible product that meets the minimum requirements of the most important customer is called the Minimum Viable Product (MVP). It is critical to clarify the MVP because it is the starting point for planning a potential product launch to benefit the Ontario agri-food industry.
Understanding “product-market fit” is crucial when launching a MVP whether it is a new product, process, or service. GL Product Development Grant funding is to be used to help remove the current barriers which are preventing industry from using or adopting your MVP.

A key goal of this funding is to help UofG researchers build and demonstrate their MVP to end users, so you can obtain feedback for further optimization. Interacting with end users (customers and industry partners) will enable researchers and entrepreneurs to obtain objective data from the market which will dramatically increase the probability of launching a successful MVP.

A successfully completed Product Development project should better position the MVP to secure follow-on investment (time and funds) from government and industry to move the MVP even closer to a market launch.

The application should clearly describe the approach, activities and tools to be used to execute your project plan and if needed explain why these activities are better than those not chosen.

Upon completion of your Product Development project, you should be in an excellent position to create a launch plan for your MVP or have an industry partner willing to take over responsibility to bring your MVP to market.

**GUIDING PRINCIPLES**

- Develop new technologies (products & solutions) to make the Ontario agri-food sector more competitive
- Use market-based evidence to determine the commercial value of agri-food research and new technologies, now and in the future.
- Remove barriers preventing the adoption of new technologies with commercial potential

**KEY GOALS**

- Use current and validated primary and secondary market-based evidence to guide the development and optimization of your MVP to be commercialized. Ideally you will have completed a Market Validation project before applying for a Product Development grant.
- Better understand industry’s needs and the challenges to bring new products and services to the agri-food market in Ontario. Accurately and objectively understand how difficult it will be to get your technology adopted by industry and what barriers must be removed or managed to do so
- Advance the Technology Readiness Level of your MVP
- Better define and understand the path to market for your MVP
- Seek greater involvement of industry partners and stakeholders to help move your MVP closer to market
- Change, adapt and optimize your MVP to better meet the needs of industry and end users.
- Generate data and reports that can be used to secure additional follow-on investment from industry or investors to create/launch a commercially viable MVP
2020 PROGRAMMING DETAILS

TIMELINES
- Program launch: October 30, 2019
- Full proposals submission deadline: December 18, 2019 at 1pm ET
- Anticipated award notification: end of February 2020
- Projects start May 2020

WHAT IS NEW FOR 2019
There are significant changes in the focus and administration of the Gryphon’s LAAIR Program in 2019. These include:
- New OMAFRA research priorities
- Development and submission of applications in the ‘Next Generation’ Research Management System (NG-RMS)
- Research team member invitation process
- No paper OR-5 form. Fields are completed on-line by Lead Applicant during the application and forms are approved electronically in NG-RMS post-submission.

Please read this document carefully to understand these changes as you prepare an application for Gryphon’s LAAIR funding.

RESEARCH PRIORITIES
The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) undertook a new approach to research priority setting in 2019. Research priorities for the Alliance Research Program are aligned within the Ministry’s core businesses and objectives: Protection and Assurance, Stewardship, and Economic Development as illustrated below.

OMAFRA Research Priorities by Core Business

Each of these research priorities has a set of goals and research focus areas, in addition to five cross-cutting focus areas. Research priorities and focus areas are outlined in greater detail in the OMAFRA Research Priorities document. Program applicants must demonstrate that their proposal is within scope of OMAFRA’s research priorities and focus areas.
HOW TO APPLY

SINGLE STAGE CALL

The Gryphon’s LAAIR Program awards funding annually via a competitive call for proposals process. Applications consist of a single stage call (Full Proposals only). The application will take place entirely in the “Next Generation” Research Management System (NG-RMS).

ONLINE APPLICATION SYSTEM NEXT GENERATION RESEARCH MANAGEMENT SYSTEM (NEW!)

Work has been underway for some time to develop and implement the “Next Generation” Research Management System (NG-RMS), which will replace the current RMS system. A phased approach is being used for the implementation of NG-RMS:
- The Gryphon’s LAAIR program call is being administered in the NG-RMS; and
- Active projects will continue to be administered in the current RMS until data migration takes place. More details about this migration process will follow.

While the NG-RMS has a new look and new functionality, the overall approach to applying to Alliance programs will be familiar. It is highly recommended that additional time be allocated for completion of the application in the NG-RMS. Of particular note is the team member invitation process which requires action from both the researcher and team members in advance of the submission deadline.

REGISTERING IN THE NG-RMS

If you have not accessed NG-RMS for applications to another Alliance program, a new login in NG-RMS is required. UofG faculty contact records have been migrated from the current RMS system, but for security reasons passwords have not. Enter your uoguelph.ca email address on the NG-RMS login page (https://omafra2.smartsimple.ca/) and select “Forgot Password”. Enter a new password at the prompts.

If you have not used the current RMS system previously, you can simply register a new account. Please be aware that faculty existing within the current RMS system must follow the “Forgot Password” option in order to be properly affiliated with their previous projects once these projects have migrated to NG-RMS.

Please contact rescoord@uoguelph.ca if you experience any difficulties logging in. Registering and logging into the NG-RMS will bring you to your Researcher Workbench where you can apply to open calls.

To open an application, select the applicable Gryphon’s LAAIR Program and click on “Determine Eligibility”. Confirm your eligibility to apply to access an application.

NG-RMS works in a variety of web browsers, but we do not recommend that you use Internet Explorer as some functionality does not work well.

ELIGIBILITY

The Lead Applicant is the primary award holder and is accountable for project management and compliance with any reporting requirements.
A Co-Applicant (optional) is a researcher or partner that plays an important and ongoing role in the development and implementation of the project. Co-applicants are identified and invited from the team member tab in NG-RMS. There can be only one Co-applicant.

University of Guelph faculty members are eligible to be the lead applicant and/or a co-applicant on any Ontario Agri-Food Innovation Alliance Research Program project. Adjunct faculty members may also apply if they are eligible to hold research funding at the University of Guelph.

Please Note: Prior to being awarded any new project(s) under the Alliance, lead applicants and co-applicants must be fully compliant with all reporting requirements for existing projects under the OMAFRA-UofG / Alliance Research Program.

THE NG-RMS GRYPHON LAAIR APPLICATION

SUPPORT FOR APPLICANTS

The following supports are available to assist researchers in the application process:
- This program guide;
- Instructions and tool tips (denoted by 📚) in the NG-RMS Application Template;
- Tip sheets available on the NG-RMS Researcher Workbench Home page (‘Help’ icon) (Please Note: These tips sheet are developed for the Tier I Program – so not all of the content is relevant to the Gryphon’s LAAIR application process);
- If you have questions related to the funding program, please contact David Hobson at x58859 or dhobson@uoguelph.ca
- If you experience technical difficulties in the NG-RMS please contact rms@ontario.ca
- For support completing the NG-RMS application template please contact our Research Program Coordinators at rescoord@uoguelph.ca or at x56863 (Vanessa Knox) and x56877 (Zach Telfer).

GRYPHON’S LAAIR APPLICATION TEMPLATE

The Gryphon LAAIR application consists of several sections that are navigated via tabs across the top of the on-line application in the NG-RMS. All tabs must be completed. The majority of the application instructions are provided in the NG-RMS, but some additional guidance is provided below.

A validation process will take place upon submission to ensure all mandatory fields are complete.

RESEARCH PRIORITY SELECTION

Select the Research Priority and Research Focus Area that your project will address. Please describe how your project aligns with the selected program priority and focus area in the ‘Alignment with OMAFRA Priorities’ field in the ‘Proposal Details’ tab. Researchers are also encouraged to describe how their project addresses one or more of the Ministry’s three core business areas (Protection and Assurance, Stewardship, Economic Development). 
**Research Team and Invitation Process (New!)**

Team members and Highly Qualified Personnel are identified in their respective tables in the Team tab in the NG-RMS. **Inviting Research Team members** is a new process in NG-RMS. This process is described in the application template and in the tip sheets (accessible under the ‘Help’ icon on the NG-RMS home page). Co-applicants, Delegates (described below) and all Collaborators should confirm their participation in the project and be registered in NG-RMS by the Full Proposal submission date.

A **Delegate** (optional – limit of one) is an individual whose only role is to assist the Lead Applicant in the creation and editing of the application and progress reports (for awarded projects). A Delegate must be part of your organization. A Delegate, while not formally a team member, is identified and invited from the team member tab in NG-RMS. Delegates that play an active role in the research project must also be identified and invited as a Collaborator or identified in the HQP table in the NG-RMS (this is important for performance measure reporting).

There is no limitation placed on the balance of the team composition, but all team members should play an active role as collaborators in the implementation of the project (advisory, researcher or knowledge broker). The team may include individuals from:
- U of G (researchers and other support staff e.g. technicians);
- Other University or research institutions in Canada or globally;
- Private businesses;
- Industry / commodity organizations;
- Non-governmental organizations; and
- Provincial, federal or municipal government departments (e.g., OMAFRA staff).

The project team composition should ensure that the appropriate research expertise is brought to bear on the research objective(s) to be addressed. The FTE (full-time equivalent) you report in the team member table should reflect the total average annual time that each individual will contribute to the project. Documenting FTE contributions are important to support performance indicator reporting.

The involvement of all team members (including their estimated actual FTE contributions to the project) will be reported on in annual and final reports.

**Highly Qualified Personnel**

Highly qualified personnel (HQP) are undergraduate and graduate students or post-doctoral fellows receiving training through the proposed research. These HQP are captured separately from team members in the NG-RMS. Please provide details on all HQP that will be involved in the project, regardless of their stipend funding source. Highly Qualified Personnel do not need to be invited. Proposals can move forward without specific persons identified as HQP if the positions are not yet filled. If specific people are not identified, use TBD as the first and last name within the HQP table and complete all other fields except for e-mail address.
**Supporting Documentation**

Supporting documentation should be in PDF format and may include:

- Team Member Supporting Documentation
  - CV’s of the Lead Applicant and Co-Applicant
- Proposal Details Supporting Documentation
  - Relevant articles demonstrating industry needs
  - One-page diagram which illustrates the Methods described in the proposal
- Other Supporting Documentation
  - Letters of support
  - Confirmation of leveraged funding
  - Award letters to be leveraged with this proposal

**OR-5 Form**

An OR-5 Form is no longer required to be uploaded to the application. OR-5 fields are completed on-line by the applicant on the OR-5 tab within the NG-RMS. Departmental and College approval will be obtained electronically following proposal submission. No further action is needed by the applicants.

**The NG-RMS Budget Guidelines**

**Budget Limits**

A total of $350,000 will be allocated to successful proposals across both the Market Validation and Product Development Grants.

Projects have a maximum of $100,000 and duration no more than three years, but projects may be extended with appropriate justification.

Granted funds must be utilized, according to the projected budget, and must be used for Ontario Agri-Food Innovation Alliance eligible and approved expenses.

**Research Station Use and Access Fees**

UofG faculty have access to 15 research stations at highly subsidized rates. Be sure to identify that you are using a Research Station in the ‘General’ Tab in NG-RMS. This will create a section on the Budget tab where you identify the specific research station services you require. Full instructions are available in the NG-RMS application

Visit the program website for a complete list of Research Stations and Research Station Access Fees. Third party (non-OMAFRA) funding is required to cover the non-subsidized portion (8%) of the fee, as well as all other operating costs associate with the project.
BUILDING A PROJECT BUDGET

An Excel version of the budget template is available on the Alliance program website as an OPTIONAL tool to draft and plan your budget. This is for planning purposes only. Please DO NOT upload this Excel budget to your application. You are required to complete and submit the budget in the NG-RMS.

1. **Sources of Project Funds** identifies the cash and in-kind support from partners. Click ‘ADD Funding Source’ under the ‘Other Sources of Project Funding’ section within the Budget tab and provide the details requested for each Funding Partner supporting the project.

2. **Uses of Project Funds** - There are three tables to be completed in the Budget tab (will appear in a pop-up window):
   - Request from Program;
   - Cash Support from Partners; and
   - In-kind Support from Partners (if applicable).

   The use of research stations requires cash support from partners to cover the portion of station access fees that is not subsidized by OMAFRA.

Use of program and partner funds should be allocated across budget categories and fiscal years. Each row in the budget corresponds to a UofG fiscal year (May 1 – April 30) that the project will take place. E.g., A three-year project beginning October 1st would require 4 budget periods (fiscal years) – the first and last periods covering 6 months only.

Use of projects funds must be fully explained/justified in the text boxes provided. Your notes help us determine whether your expenses are a) eligible; b) commensurate with the nature of your proposed research; and c) are valued appropriately.

APPLICATION CHECKLIST AND POST AWARD PROCESSES

Full Proposal Checklist
- Discuss your preliminary proposal with the Research Innovation Office and get feedback on your work plan, barriers you plan to remove, and potential industry partners
- Develop the proposal by completing all tabs in the NG-RMS.
- Append all required documents and other supporting documentation as described above. Note: all supporting documentation must be submitted in RMS as a PDF file.
- Submit your Full Proposal in the NG-RMS by the submission deadline (December 18, 1pm ET).

Full Proposal Decision Notification and Award Phase
- Researchers will be notified of the outcome of the review and approval process via the NG-RMS.
- Conditionally approved applications must address any conditions of award described in the notification email (through the NG-RMS).
- A Data Management Plan will be a post award requirement for all approved projects.
- Award Agreements are issued for projects approved with no conditions and projects with conditions of award which have been addressed.

Project Monitoring Phase
- Annual Progress reports are due 30 days after the anniversary of the project start date.
- Annual reports will be reviewed and approved if acceptable or revisions may be requested.
- Final reports are due 60 days following the conclusion of the project. They are critical to the success of the Alliance. Some of the important summary fields will be published.

**TIPS FOR CREATING A WINNING PROPOSAL**

Proposals must identify and quantify a clear commercial need for the MVP or technology. If the need is not well supported, then you are not ready to apply for a Product Development Grant.

It is very important that you thoroughly understand the Value Proposition of your MVP. To help you clarify and communicate these benefits we recommend you review the YouTube video on the [Value Proposition Canvas](#). This video may help you create a well-articulated explanation of how the fully commercialized technology will eventually help industry and/or end-users.

Proposals to develop early-stage technologies (TLR 2-4) should focus on building a first prototype, testing it under field conditions (proof of relevancy) or completing pilot studies with the prototype to determine the product market fit of your first MVP.

Proposals to develop later-stage technologies (TLR 4-6) should be focusing on interacting heavily with industry partners and end-users to improve your MVP to a level that is commercially desired and can be evaluated in the field. Later-stage MVPs should have a higher probability of getting to market due to the previous completed research to de-risk the MVP or technology.

Project efforts must focus on reducing barriers or filling knowledge gaps that are impeding the adoption of the MVP by industry; If customers strongly desire your MVP, then why are they not buying or using it? Find and eliminate those barriers.

Proposals should clearly define the specific barriers you plan to remove, and which barriers are the most important roadblocks that need to be removed at this time in the maturity of your MVP. The most obstructive barriers should be removed first. For example, there may be several less important barriers that can be easily removed in the future but unless a major barrier is removed (such efficacy level, risk vs reward ratio, return on investment, cost of implementation, regulatory approval etc.), customers will not even consider trying or adopting the MVP.

Proposals must build on an existing research project, past research or a recently developed technology that has significant potential to become a commercial product. You should be able to demonstrate your past experience and expertise in the research field specific to your proposal.

The MVP can be a process, product, platform technology, service, or management practice (method) that has the potential to significantly improve the competitiveness of the Ontario agri-food sector.

Budget requirements should match the intended deliverables for the project. Requesting more funds dictates the delivery of greater value of the outputs, therefore many proposals may require less than the maximum allowable $100K. Budget according to your current need. In all cases, the project outputs must be justified and commensurate with the level of funding requested and have clearly stated deliverables and
follow a set of date specific milestones events. Funding for larger proposals (over $35K) will be delivered in tranches linked to the achievement of your milestones.

**Examples of Potential Projects**

The following are a few examples of eligible Product Development projects, but many more exist:

- Beta-testing an early-stage technology before transferring it to industry
- Preliminary or full clinical trials of new drugs or vaccines
- Field testing prototypes/devices that have never been used outside the lab
- Evaluating a significant advancement to an existing product, process or service;
- Enabling pilot plant demonstrations or supporting the scale up of industrial processes in development;
- Evaluation and testing of late stage technologies to support a regulatory approval submission;
- Exploring and advancing the certification of a product or process by a reputable association;
- Testing or improvement of a potentially disruptive technology;
- Improving an unproven technology considered too risky to attract funding from other agencies;
- Demonstrating Proof of Relevancy using a prototype made within the cost constraints determined by the market;
- Develop a new product for animals or agriculture based on technology for humans or non-agricultural purposes;
- Generate more data (proof of concept) from a novel technology to support filling a stronger patent application;
- Conduct customer discovery with a prototype to increase industry’s awareness of the technical merit and value proposition of a new technology;
- Create an academic-industry research centre at an industry partner’s site to co-develop and implement process improvements directly applicable to industry;
- Determine the technical merit, feasibility, and commercial potential of a technology by conducting public demonstrations (field trials) for key stakeholders
**APPENDIX**

Project proposals will be scored on the merit of supporting the following factors using a five-point scale: Poor or absent (1); Below Average (2); Average (3); Above Average (4); Excellent (5)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Market Problem Solved by the MVP</strong>&lt;br&gt;How well do the researchers understand the industry or consumer problem that needs to be solved?</td>
<td>10</td>
</tr>
<tr>
<td><strong>2 Validated market demand</strong>&lt;br&gt;What is the quality of the data used to demonstrate a clear market demand for the MVP and the probability that a market opportunity exists for the MVP? And what is the degree of industry involvement in the project?</td>
<td>15</td>
</tr>
<tr>
<td><strong>3 Benefits to Ontario</strong>&lt;br&gt;What is the potential impact and benefit of the MVP to the Ontario Agri-food industry, ecosystem and consumers? How well will the MVP make the Ontario Agri-food industry more competitive and resilient?</td>
<td>10</td>
</tr>
<tr>
<td><strong>4 Research Team</strong>&lt;br&gt;How relevant is the experience and capability of the project team, collaborators and service providers? What is the quality of the training experience provided to the HQP on the team?</td>
<td>5</td>
</tr>
<tr>
<td><strong>5 Work Plan</strong>&lt;br&gt;What is the quality, clarity, feasibility and appropriateness of the work plan? What is the probability the work plan will be executed on time and budget and advance commercialization?</td>
<td>15</td>
</tr>
<tr>
<td><strong>6 Cost Effectiveness</strong>&lt;br&gt;How valuable are the benefits (expected deliverables) relative to the cost? What level of support has been secured from an industry partner?</td>
<td>10</td>
</tr>
<tr>
<td><strong>7 Technology Readiness Level</strong>&lt;br&gt;What is the suitability of the project considering the current TRL of the MVP? How likely is the project to significantly advance the TRL?</td>
<td>5</td>
</tr>
<tr>
<td><strong>8 Competitive Intellectual Property</strong>&lt;br&gt;What is the probability of creating a sustainable competitive advantage?</td>
<td>5</td>
</tr>
<tr>
<td><strong>9 Future Development and Adoption</strong>&lt;br&gt;What’s the probability industry will support (invest, adopt, or participate in) future product development, upon completion of this project?</td>
<td>20</td>
</tr>
<tr>
<td><strong>10 Communication</strong>&lt;br&gt;What is the overall quality, clarity and professionalism of the written proposal and especially the Executive Summary?</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Technology Readiness Level

Please refer to the following scale (developed and used by many governments, funders, investors and NASA) to determine the current Technology Readiness Level (TRL) of any commercially feasible product, process or technology according to the definitions below:

**TLR-1 Basic Principles Observed:** The translation of basic scientific research into applied research. This is mostly the exploration of a technology’s basic properties.

**TLR-2 Technology Concept Formulated:** The study of how technologies could be applied in the market. This is the point where the project’s direction takes form.

**TLR-3 Experimental Proof-of-Concept Created:** At this phase, active product development begins, and a technological solution is developed. This stage looks at the critical function of the technology and attempts to determine what is required for this technology to meet the end user’s requirements.

**TLR-4 Prototype Validated in the Lab:** The integration and testing of basic components in a laboratory environment. This can be done multiple times during technology development to ensure that the technology is progressing toward its desired purpose.

**TLR-5 Prototype Validated in the Field:** The integration and testing of basic components in a real or simulated field environment. This is done following lab testing and usually involves accessing better testing equipment to identify potential issues in the field.

**TLR-6 Prototype Demonstrated in an Industrial Relevant Field:** Upon completion of the technology’s design, more thorough testing under industrial conditions can commence. This will provide data critical to the commercialization phase for which the technology is applied.

**TLR-7 Prototype Demonstrated under Industrial Operational Environment:** Using the prototype in an operational environment to understand how well it performs in non-simulated testing. Further development and optimization may be required to address performance issues.

**TLR-8 Final Testing and Evaluation:** Upon further testing and commissioning under all predicted operating conditions, the technology has proven itself to be successful.

**TLR-9 Successful Deployment:** The technology, in its final form, is manufactured and deployed to end users for use in real-life conditions.