MTRAC AgBio Hub Proposal Submission–

Spring 2023 Focused Topic Grant Application due May 31st, 2023

Welcome to the MTRAC AgBio Focused Topic (Tier III) Grant application. This is a special edition grant opportunity sponsored by the Michigan Translational Research and Commercialization Innovation Hub for AgBio (MTRAC AgBio Hub or MTRAC) located at Michigan State University. The MTRAC AgBio Hub provides resources for translational research projects related to Agriculture and Biology with high commercial potential in one or more bio-related industries (excluding human medicine).

**Focused Topic Subject**. Limited labor supply has been identified across the nation as one of the most serious challenges facing the agriculture industry. This is particularly severe in the specialty crop (e.g., fruit and vegetable cultivation; orchard and vineyard operations, etc.) production/processing side of the industry and in the production and processing of animal protein intended for human consumption. This MTRAC Focused Topic (FT) request-for-proposals (RFP) seeks to fund the translation and development of technology-based tools that show promise toward reducing labor requirements (and, secondarily, costs) for producing or processing of fruits, vegetables, animal protein and other agricultural products intended for use as/in human food.

The goal of MTRAC is the successful commercialization of AgBio technologies through a license to an existing company or to a startup. As such, the text of your proposal should focus on both the specific translational research objectives and deliverables that support the commercialization plan and the key technical details of the underlying discovery/technology. Our funding partner, the Michigan Strategic Fund [whose engagement is administered by the Michigan Economic Development Corporation (MEDC)] also emphasizes commercialization in Michigan as a desirable outcome. The MTRAC AgBio Program is open to investigators at institutions of higher education, non-profit research centers, and public hospital systems in Michigan.

Whereas the MTRAC AgBio Hub regularly requests proposals for its AgBio Starter (up to $40K) and Full (up to $125K) Grants, this special edition MTRAC FT Grant differs. The FT awards will provide up to $50,000 (per grant) for translational research on innovations that address the topics addressed in the Focused Topic Subject paragraph above. The Focused Topic Grant projects are intended to provide development stage data to help validate the suitability of the technology for addressing the defined topic of the RFP. It should also include at least one clear pre-commercialization milestone to help verify the need in the marketplace and/or identify concerns an end-user or industry partner might have about the technology. MTRAC FT projects funded under this proposal will be milestone based and typically take 6-9 months to complete. Awardees may competitively apply for additional MTRAC awards based on successful completion of previous award milestones. There may be times when there are simultaneous MTRAC RFPs open, such as for Starter and Full Grant funding. **Concurrent proposals on the same topic are not allowed** (the second proposal received will not be accepted for review).

**Potential applicants should speak with the MTRAC AgBio Program office prior to Proposal submission** about the MTRAC AgBio Program requirements, expectations, and limitations which differ significantly from typical basic research funding sources.

* Joe Affholter, MTRAC Commercialization Program Director, jaffholt@msu.edu (517.884.1824)
* Weian Ou, MTRAC Program Assistant, ouweian@msu.edu (517.884.1659)

Proposals for MTRAC AgBio Focused Topic projects must be submitted as a single PDF file through the MTRAC Application portal link, and should include the cover page and summary, project description, along with completed Budget and Signature Form.

MTRAC Application Portal Link: <https://msu.smapply.io/>

Program name: Ag&Bio MTRAC Focused Topic Grant

Please contact Weian Ou (MTRAC Program Assistant) at ouweian@msu.edu for any problems with the portal.  **Proposals are due at 5 PM EST on Tuesday, May 31, 2023.**

**MTRAC PROCESS OVERVIEW:** After verification of compliance and completeness, Proposals will be reviewed by the MTRAC AgBio Oversight Committee and awardees selected in June 2023. The Oversight Committee may require that certain defined contingencies be met before an award is made. There is the potential for there to be costs associated with meeting the contingencies. Applicants will be notified within about one week of the Oversight Committee decision and awarded funds will be made available to the selected projects as quickly as possible after necessary documents are executed and accounts are setup (likely no later than July 2023).

**PROPOSAL REVIEW & EVALUATION**: Proposals will be evaluated by the MTRAC Oversight Committee using the categories listed in the Project Description below (scientific merit to be a part of the technology/product review). Consideration of the commercialization aspects will include probable economic impact and significance, potential for commercialization, the likelihood of successfully obtaining required follow-on support/funding to get the ultimate product or service on the market, etc. Each Proposal must contain, and will also be evaluated upon, explicit deliverable quarterly milestones and proposed budget. For MTRAC Focused Topic Grant proposals, it is especially important that it clearly addresses the Focused Topic Subject listed above and how the proposed translational research activities will facilitate development and commercialization of the technology.

**ELIGIBILITY**: MTRAC was developed to fund translational research of novel, commercially viable, technologies that will result in a defined product or service that solves an unmet market need. Projects with limited commercial potential are outside of the mission of the MTRAC Program and unlikely to be funded. The research must relate directly to applications in the focused areas of agriculture and food production described in the Focused Topic Subject paragraph (above). The technology must be the subject of an Invention Disclosure to your institution of higher education, non-profit research center, or hospital (*e.g.* invention disclosure forms for Michigan State University (MSU) can be found at: <http://www.technologies.msu.edu/researchers/disclose-invention>) and be under active management by your technology transfer office or equivalent (*e.g.* for MSU this would be MSU Technologies <http://www.technologies.msu.edu/> ). Technologies included in an MTRAC proposal must be available for licensing in the application/field-of-use of the proposal and relevant geography(ies). Technologies under an option agreement in the applicable field-of-use and geography(ies) are eligible for inclusion in an MTRAC proposal.

The technology should be at least at the proof-of-concept stage, as the MTRAC AgBio Program is not intended for basic research.

The applicant Principal Investigator (PI) must be from one of the following located in Michigan:

* Institution of higher education
	+ If at MSU and the PI does not have an appointment in the College of Natural Science, College of Engineering, College of Agriculture and Natural Resources, or the College of Veterinary Medicine, they must contact the MTRAC AgBio program office about specific matching funding requirements.
* Non-profit research center
* Hospital system

It is **important to note** that the template for the proposal plus the Budget and Signature Form (see below) include additional requirements related to matching funding, indirect cost limits, project management, etc. Additionally, the mechanism to provide funding to awardees outside of MSU is through a subaward agreement from MSU. The subaward agreement should be signed within one and a half (1.5) months of notification of award and receipt of the subcontract, otherwise there is the potential for the award to be rescinded.

If you have any questions regarding eligibility and application details, please contact MTRAC Program Assistant, Weian Ou ouweian@msu.edu for assistance.

**CONFIDENTIAL INFORMATION:** Please note that the members of the Oversight Committee who will be reviewing the Proposals and making the award decisions ARE NOT under any confidentiality agreements. Due to the nature of their work in venture capital, agricultural companies, etc., the majority of the Oversight Committee members would not be allowed to enter into these types of agreements. Therefore, do not include any proprietary/confidential information in your proposal and do disclose all such information to your tech transfer office (*e.g.* MSUT at MSU). If intellectual property (e.g. patents) related to the proposal has not yet been filed, it is advisable to work with your technology manager on the content of the proposal to avoid public disclosure that could affect the ability to later file for intellectual property (IP) rights. One possible way to approach this is to focus discussion on *what* the product or process does, rather than very specifically *how* it does it. As the objective of this program is commercialization, the proposal should be focused towards the commercial and business opportunity rather than the underlying technical details. If you have any questions or concerns in this regard, please contact your technology manager at your organization.

**PROPOSAL:** To be accepted for review, the proposal submission must include the following information according to the format provided and MUST not exceed the stated page limits. *Maintain at least 0.5 inch page margins and use type no smaller than Arial 10pt. font throughout all documents submitted.*

As previously noted, for Starter proposals it is especially important to clarify specifically how the proposed activities will facilitate commercialization of the technology. This milestone-driven translational research focuses on the path to commercialization and stands in strong contrast to the aims-driven research common in NIH/NSF funded research. Awardees will meet periodically with the MTRAC Commercialization Program Director and other stakeholders to discuss progress and get assistance. Additionally, all awardees are required to report periodically (usually quarterly) regarding milestone achievement and progress utilizing a template provided. These reports will sometimes be presented in-person to the MTRAC Oversight Committee.

1. **Cover Page and Summary (2 pages total not including the “other related funding” section) –** See Cover Page and Summary template at the end of this document.
Contains the project title, name of the PI, budget amount requested, tech transfer case/file number(s) with IP status (it is best to consult your technology manager for assistance completing this section), identification of related funding and differentiation of funded activities (other funded or to-be-funded activities should not be duplicative of the proposed MTRAC project but instead support other technology advancement activities as part of a full plan to achieve commercialization), plus a brief summary (one paragraph ideally) of the proposal. Collaborator(s) name(s) are also included when applicable. If there are co-PIs, one needs to be designated as the primary contact.
2. **Project Description (3 pages total) –** *It is recommended that you use the following headings (or similar) in the body of your proposal; however, you must adhere to the total page limit. Attachments such as letters of support or verification of contribution are not included in the page count.*
* **Technical Description:** Include a *brief* summary of the technology and be sure to clearly describe how it seeks to address the Focused Topic Subject.
* **Market Opportunity / Unmet Need –** What is the envisioned commercial product/service? Who would the customer/market be and why would they be interested or view it as important (e.g., what problem is it solving, and for whom)? What are the competing technologies or products and what differentiates your solution? What is the size of your target market? Over what geography? Is the market increasing in size and, if so, by how much over what time period? Remember to include references for all market data used in the proposal*.*
* **Path to Commercialization –** Which do you envision, a start-up company or an existing company, ultimately licensing the technology to produce/provide the final product or service (it’s fine if it is too early to anticipate who would be the licensee but mention possibilities)? Reminder: MTRAC has a focus on MI-based companies, as the Michigan Strategic Fund/MEDC is a financial sponsor of the Program. What are the steps and/or barriers that must be overcome to have the technology sufficiently de-risked so that it is possible to license it to a start-up or existing company to bring the technology to market in a product or service? What is MTRAC's suggested role in the de-risking through the activities of this proposal?How does the funding reduce the risk?
* **Short-term Next Steps** – Describe the specific translational research milestones of this proposal and the plan per quarter for achieving them within the specified timeframe(typically no longer than 9 months) and how they relate to the de-risking described in the previous paragraph. Work conducted under a MTRAC FT Grant is intended to provide enough technical and end-user/customer discovery data to answer critical commercialization questions and substantially reduce the technical and commercial risk associated with further investments in the technology. How does each milestone do so?
* **Collaboration** *(Include only if applicable. Also, the information can be integrated into other sections rather than treated as a separate section)* **–** Who are the collaborators on this project (if any) and what are their roles? Are they contributing funding and/or in-kind resources? If so, a letter of support verifying any in-kind or contributed funds beyond the required match MUST be included as an attachment for the support to be considered in the proposal evaluation. If they are providing the required matching funding for a non-MSU applicant (or MSU applicant outside of the MSU colleges listed in the Eligibility section above), they will need to sign the “Matching Funds Authorization” section of the Budget and Signature Form. If a collaborator is not employed as a direct report to the PI of the proposal, the collaborator’s signature is needed on the Budget and Signature Form.

Note: It is important to describe/include in your proposal any feedback from, or any other engagement with, potential customers or licensees used to determine the target market, to define the desirable/needed product attributes, to develop the path to commercialization, and/or determine the short-term next steps.

1. **Budget and Signature Form – (no page limit; use number of pages needed to complete the Form).** Include a proposed budget (timeframe matching that of your proposed short-term next steps) using the appropriate Budget and Signature Form (be sure to use the correct form – there is a separate green MSU-only form so that proper approvals and calculations are obtained). The total direct cost budget cannot exceed $50K. Please note that there are separate columns in the Form for expected in-state and out-of-state expenses. You have the flexibility to build the budget you feel you will need and you should only request the amount needed. Also, include a brief budget justification.

**Applicants of non-profit research center or hospital system will need to provide at least 50% of the total budget as matching funds. For applicants from an institution of higher education, the matching funds requirement is based upon research expenditures as reported through the Higher Education Research and Development (HERD) survey** [**https://ncsesdata.nsf.gov/ids/herd**](https://ncsesdata.nsf.gov/ids/herd)**:**

* + - >$150 Million – the match requirement will be at least **50%** of the proposed project budget
		- $50 Million - $150 Million – the match requirement will be at least **25%** of the proposed project budget
		- <$50 Million –whereas institutions of higher education that fall below $50 million in research expenditures, the match requirement will be **10%** of their proposed project budget

(for MSU applicants from the colleges listed in the Eligibility section above, this match will automatically be made internally utilizing funds already committed to MTRAC). These matching funds cannot originate from another MEDC (or Michigan Strategic Fund) funded program and must be cash rather than in-kind. **Additionally, non-MSU applications must include a non-technical project manager** whose activities include budget and milestone management, interfacing with the MTRAC AgBio Program personnel and MEDC for all necessary reporting, and providing commercialization support. Signatures on the Budget and Signature Form for non-MSU applicants are required related to the funding match, technology management, and project management. *Note: Collaborators who are not employed as a direct report to the PI on the proposal must sign the Budget and Signature Form as a collaborator. If they are providing the required matching funding, they will also need to sign the “Matching Funds Authorization” section of the Budget and Signature Form.*

***The correct Budget and Signature Form must be used/completed and submitted as part of your Proposal.***

***Please note the following related to your budget:***

* The maximum allowable indirect charge of the requested MTRAC funds is 15%.
* All of the funds are to be used to advance the goals of the project per the translational research milestones in the proposal.
* Allowable budget expenditures include: salary and fringe benefits for project personnel (important to justify any PI salary included as this is generally not viewed favorably/allowed by reviewers), materials and supplies, contract research (if required), outside contractors, equipment (budget cannot be used to pay for computers/laptops), limited travel (important to justify the need- see last bullet below), and other relevant costs. Budgets should be primarily allocated to conducting translational research and achievement of milestones. During the funding decision, the appropriateness of the proposed project budget is reviewed.
* **Student tuition is not an allowable expense**. Neither are costs for construction or renovation. Additionally, the awarded funds cannot be utilized for filing, prosecution, or other costs associated with patents, copyright, or trademarks.
* Legal fees and start-up costs are not allowable expenses
* For expenses to hire out-of-state consultants specific to project milestones, a formal request needs to be made to and supported by the MEDC apart from the Oversight Committee funding decision.
* For items not directly related to achievement of the project goals, such as travel to conferences, a full and complete justification regarding relevancy to the project need to be provided. *Note: documentation of the goal and outcome relevant to the project will be required for any approved travel expenses*.

**4.** (if applicable) **References/Literature Cited (no page limit)**

1. **Biosketches (2 pages each) –** Biosketches of the PI and other key personnel should be included in the proposal.
2. (if applicable) **Letters of Support and Verification** **of Contribution (no page limit).** Include substantive letters of support from collaborators, potential commercialization partners, etc. Any pledged in-kind support must also be verified by inclusion of a signed letter on appropriate letterhead. For non-MSU applicants (or MSU applicants outside of the colleges listed in the Eligibility section above), the required financial support as matching funds (at least 50% of the project budget) requires an authorized verification signature on the Budget and Signature Form; however, an additional letter further explaining and/or confirming the match can be included. If additional funds beyond the required match are being supplied, these need to be described relative to amount and purpose in a letter on appropriate letterhead in order to be considered in the proposal evaluation.

MTRAC AgBio Program– Focused Topic Proposal (due May 31 2023)

**Project Title**

Name:

Institution or Organization:

Department:

Email address:

Phone:

**PI Name and Contact Information**

**Other Collaborators and their Affiliation**

**Total Proposal Budget Amount**

**Technology and Intellectual Property (IP) -** please complete table below**:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  **Tech Transfer File Number** | **Type of IP** Patent, Copyright, or Trade Secret | **Type of Patent Filing & Title**(None, Provisional, US Application, PCT, etc.) | **Filing Date(s) if applicable and IP not yet issued**  | **Issued Patent Number(s) if applicable**  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Name:

Title:

Email and Phone:

**Technology Manager and Contact Information**

**Other Related Funding:** 1) Identify both current and pending funding including the source, amount, and duration, 2) Differentiate the activities of the other funding and the proposed MTRAC funding as part of an overall commercialization plan, and 3) List any previous funding related to the proposed project from MSU (e.g. TSGTC) and Michigan (e.g. MTRAC, Advance Proof-of-Concept, etc.) including source, amount, duration, and use.

**Brief Summary of the Proposal**