

**RESEARCHING OPPORTUNITIES TO IMPROVE WORKER AND COMMUNITY SAFETY AND HEALTH
WITHIN AND AROUND SWINE PRODUCTION FACILITIES**

Call for Letters of Intent (LOI)

No Matching Funds Required for This Funding Opportunity

Key Dates

LOI Request Open: April 20, 2022 by 12:00 pm ET

LOIs Due: May 18, 2022 by 5:00 pm ET

An approved LOI with an invitation to submit a full application is required for submission.

Full Application Invitation: June 8, 2022

Full Application Receipt Open: June 8, 2022 by 12:00 pm ET

Full Applications Due: July 13, 2022 by 5:00 pm ET

Award Notification: Fall 2022

Anticipated Project Start Date: December 1, 2022

The Foundation for Food & Agriculture Research ([FFAR](#)), in partnership with the National Pork Board ([NPB](#)), is implementing a research program that aims to understand and address air quality inside and immediately outside of swine production facilities. The program consists of:

- **Phase I:** Exposure assessment of indoor and outdoor air quality—This will focus on developing objective measures for characterizing key air quality components and concentrations.
- **Phase II:** Worker and Community Safety and Health Risk Assessment—This will focus on conducting robust exposure assessments to swine production facility workers and those living near those facilities by tying identified exposures to potential health outcomes.¹
- **Phase III:** Mitigations and Interventions—This will focus on developing mitigations and interventions to reduce negative health impacts to workers, animals, and the community.¹

This call for Letters of Intent (LOI) focuses solely on Phase I.

BACKGROUND

Air quality within and surrounding swine production facilities, and its impacts on the upper and lower respiratory tract of individuals living on or near these facilities, is one of the most commonly studied environmental health issues in agriculture. Research suggests that particulates from swine farms have

¹Initiation of Phases II and III are dependent on the availability of funding.

the potential to harm human health, however, existing assessments of air quality have been subject to bias (O'Connor et al. [2010](#) and [2017](#)). Thus, there is a major need to develop objective methods and metrics for assessing air quality and the potential risk to workers and the surrounding community. Furthermore, it is equally important to understand the source of particulates in swine production to enable development of appropriate interventions. For this program, the composition, concentration, and attribution of fine particulate matter (PM) the size of ≤ 10 microns (PM_{10}) and ≤ 2.5 microns ($PM_{2.5}$) are of the greatest priority, given their potential to negatively impact human health.

PROGRAM DESCRIPTION

The immediate objective of this program is to support a scientifically valid assessment of particulate levels inside and immediately outside of swine facilities with the long-term goal of identifying solutions that promote and protect worker and community health. The dissemination of Phase I results will be critical for the multiphase approach to build upon the results of the exposure assessment, by using these results to assess risk and model potential health outcomes. Furthermore, this multiphase approach will ensure that each stage is appropriately assessed and addressed via sound scientific methods and processes before moving to the next phase.

FFAR will not consider projects that propose risk assessments based upon existing data found in the scientific literature. This program will support the collection of new datasets for risk assessments and interventions.

ELIGIBILITY

FFAR welcomes applications from research and higher education institutions in the US and Canada.

PHASE I REQUIREMENTS

Phase I aims to develop objective, innovative and reliable measures of the composition and concentration of PM_{10} and $PM_{2.5}$ in and outside swine production facilities. Establishing such measures would require a collaboration of researchers across multiple disciplines and commercial swine producers. A key component of this effort will be access to and collection of quality data, which, in turn, will require effective data management.

Applications for funding should be reasonable and appropriate for the work proposed, and applicants should be cognizant that the project must provide value to and potential for implementation by the commercial swine production sector. Successful applicants will need to demonstrate the ability to work in an interdisciplinary way to ensure the accuracy of the assessment including identifying the presence of bias.

AWARD INFORMATION

- Anticipated Project Duration: 12-24 months
- Total Amount Available: up to US \$1 million
- Estimated Number of Awards: dependent on the application's budget

Matching funds are not required from the applicant. However, additional contributions are welcome and, if available, should be reflected in the budget. Additional contributions will not influence the review of the application.

SUBMISSION REQUIREMENTS

Letter of Intent (LOI)

Applicants must submit the LOI using FFAR'S Grant Management System. All information provided will be treated as confidential. The most innovative and cutting-edge projects with significant potential for advancing FFAR's mission will be invited to submit a full application. **Applicants must submit an LOI to be invited to submit a full application.**

Required Elements:

- Project Title
- Principal Investigator (name, affiliation, contact information)
- Key Personnel (name(s), affiliation(s), expertise)
- Project Duration (calendar months)
- Geographic Location(s) of Proposed Project
- Objectives and Relevance (up to 250 words)
- Anticipated Impacts (up to 250 words)
- Potential for Scaling Up (up to 250 words)
- Overview of Proposed Project (up to 1,500 words)
 - Approach to conducting a landscape analysis of the currently available air quality assessment data and data sets, and the measurement methodology/-ies used to collect these data.
 - Approach to framing and scoping research to develop an objective and reliable methodology for identification, and characterization of the chemical composition, attribution, and concentration of PM₁₀ and PM_{2.5} present both inside and immediately outside (within 500 meters) of swine production facilities.
 - Approach to validating the proposed methodology and its potential for scaling up.
 - Opportunities for input from and/or collaboration with stakeholders (e.g., commercial livestock producers, veterinary service providers, local health department/air regulatory agency).
- Proposed Budget (up to US \$1 Million; FFAR limits indirect costs to 10% of total award)
 - Total proposed budget
 - Amount requested from FFAR
 - Amount and source(s) of matching funds, if applicable.
 - Budget Justification – summary of tentative expenses

Full Proposal

Only applicants with an approved LOI will be provided with an invitation to submit a full application.

Required Elements:

- Project Title
- Project Duration
- Principal Investigator (name, affiliation, contact information)
- Key Personnel (name(s), affiliation(s), expertise, and role of key personnel on the proposed work)
- Geographic location (city, state, congressional district) of the applicant organization.



- Geographic location (city, state, congressional district) where the proposed research will be conducted.
- Will your research outcome(s) be scale neutral? (up to 250 words)
- Project Executive Summary (up to 500 words)
- Project Goals and Objectives (up to 500 words)
- Potential Impacts of Research Outcome(s) (up to 500 words)
- Anticipated Outcomes or Outputs (up to 500 words)
- Project Description (up to 5,000 words)
 - Methodology for conducting a landscape analysis of the currently available air quality assessment data and data sets, and the measurement methodology/-ies used to collect these data.
 - Sources of information to be used in landscape analysis.
 - Approach to setting criteria of objective and reliable measures of composition and concentration of PM₁₀ and PM_{2.5}.
 - Approach to framing and scoping research to develop objective and reliable measures of exposure to different particle types of PM₁₀ and PM_{2.5}.
 - Approach to developing a methodology for identification, and characterization of the chemical composition, concentration, and attribution of PM₁₀ and PM_{2.5} present both inside and immediately outside of swine production facilities,
 - Type of particles to be measured by the proposed methodology
 - Approach to determination of the swine farm attributes that may generate different concentrations of PM₁₀ and PM_{2.5} (e.g., climate, farm design, geographic location, life stage of animal housed).
 - Approach to prioritizing those sources of PM₁₀ and PM_{2.5} likely to have the highest impact on worker and community health based on collected data and the existing literature.
 - Plan for validation of the proposed methodology and its potential for scaling up,
 - Identifying stakeholders needed to be involved in implementing the research and analyzing the results,
 - Possible barriers to widespread adoption of your research outcome(s) and approaches for overcoming them
 - Possible barriers that might hinder the optimal or intended use of your research outcome(s) and approaches for overcoming them
 - Developing plans for integrated outreach and/or widescale dissemination of results and educational materials to producers and/or allied industry
- Organizational Capacity/Research Environment (up to 250 words)
- Data and Dissemination Plan (up to 500 words). The results provided in the final report submitted to FFAR will be shared with the public to begin Phase II of the program (budget dependent).
- Organization Assurances
 - Research involving human subjects
 - Research involving vertebrate animals
 - Research involving Recombinant DNA
 - Research involving National Security implications
 - Research involving hazardous materials
 - Research involving human fetal tissue

- Research involving NEPA review
- Proposed Budget (up to \$500,000; FFAR limits indirect costs to 10% of total award)
 - Total proposed budget
 - Amount requested from FFAR
 - Amount and source(s) of matching funds, if applicable.
- Budget justification (up to 1,000 words)
- Current and Pending Support Form: complete for everyone listed as PI or Key personnel on the project
- Required Attachments: Failure to provide these attachments will result in the application's disqualification.
 - References Cited
 - Budget Form
 - P.I. and Key Personnel Biosketch: five-page limit per individual listed as P.I. or key personnel in the project
 - Project timeline (by year)
 - Matching Fund Verification Letter(s), if applicable.
- Optional attachments: Applicants can upload any of the following as a single PDF document.
 - Five (5)-slide summary
 - Letters of Support: Applicants can provide letters of support for the proposed project, including from matching funders (if applicable).
 - Graphics, Figures, Equations, and Tables not included in the Project Description: Applicants may upload a PDF document with graphics, figures, tables, or a list of equations to support the research program plan. Five-page limit.

HOW TO APPLY

LOIs and invited full proposals must be submitted by the deadline date through FFAR's online application Grant Management System. Applications submitted outside of this System will not be considered.

To start a **new** application, please click [here](#). If you are a new user, register for an account by clicking "Create Account" button located under the email address field on the left side of the home page. Once you log in, you may begin working on your application. Please be sure to save your work often by clicking on "Save and Finish Later." To access a saved application, please do so through your [Grant Management Account](#).

Only LOIs and invited full proposals submitted by the deadline through FFAR's Grant Management System will be accepted and considered eligible for evaluation. To be fair to all applicants, FFAR will not grant extensions to applicants who missed the deadlines posted in the Key Dates section.

ADDITIONAL INFORMATION

Review Process

LOI Review: Submitted LOIs undergo an internal review to assess if the project is relevant to the RFA and that the LOI demonstrates the potential to meet the evaluation criteria. The LOIs with significant potential to develop an objective exposure assessment of air quality will be invited to submit a full

application. Applicants must submit an LOI to be eligible to submit a full application.

Full Application Review: Full proposals undergo a three-stage peer-review process. First, each submission is assigned to an external expert review panel. In the second stage, an Advisory Council will provide funding recommendations based on the external peer reviews. Finally, FFAR's Executive Director will review positive funding recommendations and make funding decisions.

All external reviewers must agree and adhere to the terms outlined in FFAR's [Conflict of Interest Policy](#) and [Non-Disclosure Agreement](#). FFAR makes reasonable efforts to ensure that applications are not assigned to reviewers with a real or apparent conflict with the applicant, institution, or project personnel. Reviewers with a conflict of interest are recused from evaluating or participating in the related discussions. Each stage of the review is conducted confidentially, and as such, FFAR is responsible for protecting the confidentiality of the contents of the applications.

Review Criteria

LOI Review: All submitted LOIs will go through an internal review process to ensure that the proposed project is relevant to the Call and suitable to FFAR's mission. **Applicants must submit LOI to be eligible to submit a full application.**

Evaluation Criteria

A. Project Objective(s), Relevance and Impact(s) (30%)

- Are the potential impact and applied relevance of the research adequately described?
- Are project objectives clearly described?
- Is the approach to dissemination of outcomes, potential impacts adequately addressed?

B. Technical Merit (30%)

- Is the approach to conducting a landscape analysis scientifically sound?
- Is the methodology for framing and scoping research appropriate and scientifically sound?
- Is the technical approach to developing the exposure methodology reasonable and scientifically sound?
- Is the strategy to validate the proposed methodology reasonable?
- Is the potential for scaling up research outcomes clearly addressed?

C. Project Feasibility (20%)

- Will the project be feasible within the proposed time?
- Is the proposed budget reasonable?

D. Partnerships (10%)

- Are opportunities for input from and/or collaboration with stakeholders clearly described?
- Have key stakeholders been identified as potential collaborators?
- Does the project present a compelling and novel partnership opportunity?

E. Expertise and qualifications of the team (10%)

- Is the individual, team, or organization qualified to conduct the proposed activities?

- Does the concept note demonstrate that the applicant would have adequate resources to build a predictive model?

Full Application Review:

Evaluation Criteria

Full applications are evaluated by an external expert review panel based the following review criteria. Reviewers will evaluate and score each criterion. Evaluation of the scientific merit of each application is within the sole discretion of the reviewers, and they may raise additional factors to consider that are not covered in the bullets for each criterion.

A. Project Objective(s), Relevance and Impact(s) (25%)

- Does the proposed project address a challenge related to measuring exposure to different types of PM₁₀ and PM_{2.5}?
- Are project objectives, relevance and impacts clearly described?

B. Project Strategy and Feasibility to Achieve Project Goals (25%)

- Are the overall project approach, strategy and design clearly described?
- Are the proposed objectives and activities feasible within the duration of the award? Is the proposed timeline realistic?

C. Scientific or Technical Merit (25%)

- Does the proposal utilize the best and most efficient scientific methods?
- Are the scientific methods suitable to achieve the project goals?
- Is the proposed methodology for conducting landscape analysis scientifically sound and feasible?
- Are proposed sources of information to be used in landscape analysis adequate?
- Is the approach for setting criteria adequate to assess the reliability of the proposed measures scientifically sound?
- Will the proposed methodology allow collection of comprehensive and diverse types of data?
- Will the proposed measures be reliable and objective?
- Does the applicant give a detailed plan on how the proposed methodology will be validated?
- Does the proposal emphasize scalability of research outcomes?
- Does the proposal include an adequate plan for disseminating project outcomes, including integrated outreach and/or widescale dissemination of results and educational materials to producers and/or allied industry?
- Does the proposal address possible barriers to wide adoption of the proposed methodology and proposes approaches for overcoming them?
- Does the proposal include a detailed data management plan with a commitment to public access?

D. D. Organizational Capacity/Research Environment (10%)

- Will the research environment be appropriate for the project's intended goals?

- Does the described role of each collaborating organization make it clear that each organization adds value to the project and is committed to working together to implement the project?
- Does the proposal demonstrate that the project personnel would have adequate resources (e.g., institutional support, equipment and/or other physical resources) to conduct the proposed research or associated activities?

E. Budget (5%)

- Is the budget appropriate for the scope and services of the proposed work?
- Is the proportion of the funds allocated for direct services reasonable?
- Does the applicant provide a satisfactory budget justification?

F. Qualifications of Research Team (5%)

- Does the Principal Investigator have a track record indicative of success in the project?
- Have the appropriate personnel been recruited for the project?

G. Partnerships (5%)

- Does the proposal include a description of collaboration with stakeholders?
- Will key stakeholders be involved in the project?
- Does the proposal include project support letter(s) from stakeholders?
- Does the project present a compelling and novel partnership opportunity?

AWARD ADMINISTRATION

Selection Notice: Following the full application review process, the principal investigator and the authorized organization representative listed on the project will be officially notified by email of the status of the application. If an application is selected for funding, FFAR reserves the right to request additional or clarifying information for any reason deemed necessary. Potential grantees are free to accept or reject the Grant Agreement as offered.

Intent to Fund Notice: FFAR notifies applicants of their awards through email. The notice does not constitute an award or obligate funding from FFAR until there is a fully executed Grant Agreement. FFAR encourages applicants to review a sample Grant Agreement before applying to ensure they know the terms under which grants are offered.

Grant Terms and Conditions

FFAR expects applicants to have reviewed the [Sample Grant Agreement](#) before applying to ensure that the applicants are aware of the applicable terms under which the grant is offered. Successful applicants are strongly encouraged to sign the Grant Agreement as presented.

A grantee may request a no-cost extension of up to 12 months to complete the work's planned scope. The request must be communicated to FFAR and submitted through the Grant Management System at least thirty (30) days before the end date of the grant. The request must justify the need for the extension; include a summary of the unobligated, remaining funds; and provide a plan for fulfilling the

project's terms. If a no-cost extension request is approved, FFAR will issue an amendment to the Grant Agreement. This extension will not be approved merely for using unexpended funds.

Requirement to Demonstrate Matching Funds

Matching funds are OPTIONAL for this program. If the applicant provides matching funds, the applicant agrees to identify and certify matching funds annually before disbursement of award funds. The match share is intended to supplement, not supplant existing funding for the principal investigator (PI). The applicant will abide by FFAR's [Matching Funds Guidelines](#) to meet FFAR's matching requirements. To constitute a valid match, all matching funds on a FFAR grant must be expended during the grant period.

Post-award Management

Reporting Requirements: After FFAR confers a grant, the grantee must provide annual scientific and financial progress reports. The report should include activities carried out under the grant, highlighting project accomplishments, and an account of all expenditures to date.

Final Report Requirements: Within 90 days of completing the project, the grantee shall provide a final project report. This report should address the project objectives outlined in the original grant application, describe any modifications to the project objectives and scope, describe the final project accomplishments, and include a final project accounting of all grant funds.

Scientific Integrity: FFAR strives to advance knowledge and the application of science to address challenges related to food supply and sustainable agriculture. FFAR's ability to pursue its mission depends on the integrity of the funded science projects and programs. All FFAR grants must be conducted with the highest standards of scientific integrity.

CONTACT INFORMATION

All Scientific and Grants questions must be emailed to grants@foundationfar.org

We only accept scientific or programmatic, and grants inquiries by email. We strive to respond to inquiries within two business days, but our response time depends on the volume of questions received and the complexity of the questions asked. Please note that we do not monitor this mailbox on evenings, weekends, or federal holidays.