Citrus Research and
Development Foundation, Inc.

2019 Request for Pre-Proposals

RFP Timeline

March 19, 2019   Call for pre-proposals announced
April 15, 2019   Deadline for submission of pre-proposals - must be received by 5:00 pm Eastern time
May 21, 2019   Board approval of pre-proposals invited for full proposal submission; post to website
June 24, 2019   Deadline for submission of invited full proposals - must be received by 5:00 pm Eastern time
~~August 27~~, 2019   Board approval of proposals to be funded; list of projects will be posted to website
September 24, 2019 The Board has postponed its decision on funding 2019 RFP proposals until the Sept. 24 meeting.

2019 RFP Priorities

All research pre-proposals must address at least one of the priorities below.

1. Bactericide use in Florida citrus groves.

   a.   Develop commercially viable bactericide application technologies.

   b.   Improve the uptake of bactericides into citrus phloem.

   c.   Develop tools to accurately measure and track live bacterial titers in citrus trees.

2. Asian citrus psyllid (Diaphorina citri) and other pest management tools and strategies.

   a.   Develop or improve sound Integrated Pest Management tactics for citrus pest management in an HLB era.

   Research topics could include natural enemies, deployment of covers, barriers, psyllid repellants, reflective mulch, RNAi technologies, pheromones, and interactions between pesticides and other pests (e.g., rust mites)

3. Horticultural practices for HLB disease management.

   a.   Develop management practices (e.g. tree spacing, irrigation, nutrition, pruning, etc.) to treat HLB trees to restore or prevent further decline of roots, fruit quality, enhanced fruit taste, yield and/or prevention of premature fruit drop.

   b.   Develop specific management practices for new and existing rootstock and scion combinations for fresh and processed fruit.

4. Plant Improvement in an HLB era

Develop field evaluation of CLas/ACP tolerance or resistance in rootstock and scion combinations for fresh and processed fruit.

5. Management of interactions between HLB and other citrus diseases and pests

700 Experiment Station Rd. • Lake Alfred, FL 33850 • Phone: (863) 956-5894

a. Investigate HLB interactions with other citrus diseases (e.g., citrus canker, citrus black spot, blight, CTV) or pests.

b. Investigate the susceptibility of released rootstocks to root pathogens and pests including nematodes, Diaprepes root weevil and Phytophthora.

c. Investigate HLB interactions on pre and post-harvest fruit quality and shelf life of new varieties and juice blends.

6. Citrus diseases other than HLB, including diseases not yet in Florida

Purpose

The Mission of the Citrus Research and Development Foundation (CRDF) is to "Advance disease and production research and product development activities to insure the survival and competitiveness of Florida's citrus growers through innovation". The purpose of this CRDF request for proposals is to support the Foundation's mission by addressing key industry needs. Questions and research priorities were discussed during citrus grower input sessions, researcher brainstorming sessions, and from the recently completed National Academy of Sciences (NAS) study. The priorities identified are expected to lead to proposals for hypothesis-driven, knowledge-building research projects, the results of which will lead to downstream solutions to HLB. These research priorities were selected and approved by the Research Management Committee (RMC) and the CRDF Board of Directors, which are composed of citrus industry members.

Pre-proposals and invited full proposals will be reviewed by the RMC, scientific advisory board and the Board of Directors. External, ad hoc expert reviewers will also review invited full proposals. Decisions on pre-proposals invited to submit full proposals and subsequent proposal approval will be made by the Board of Directors based on the recommendations received from the RMC.

PRE-PROPOSAL INSTRUCTIONS

Pre-proposal Submission

The first step in the 2019 RFP is the submission of a pre-proposal. Pre-proposals forms are due on Monday, April 15, 2019 by 5:00 pm Eastern time by email to catp@citrusrdf.org.

The Pre-proposal form can be downloaded from the following link: http://citrusrdf.org/wp-content/uploads/2019/04/PP-19_2019-Preproposal-Form.pdf

Complete all fields of the Pre-proposal form. Fields are formatted for Helvetica 9 font; responses to each section must fit into the allotted space without scrolling.

Project funding requests may be for a period of one to three years.

I. Non-Technical Abstract

For this *non-technical* abstract, please summarize the following information relative to this project:

1. List the priority (number and letter) being addressed
2. What is the purpose of this proposed project, and how does it address each specific priority?
3. What is the practical application of this project and how will it impact the citrus industry?
   A. It is not necessary to describe the importance of HLB to world citriculture nor how much HLB has affected Florida citrus.

II. Objectives and Approach

List the specific objectives of the project with the corresponding hypotheses to be tested.

1. Briefly describe each objective and the experimental approach to meet each, including methods and technologies.
2. List the technical requirements and expertise needed to accomplish the project objectives.

III. Timeline and Milestones

1. Provide a timeline for objectives and milestones and show how progress for each is determined.

2. If subsequent objectives rely on the success of a prior objective, describe if/how subsequent objectives can be investigated if early objectives are not met.

IV. Expertise

List each investigator's expertise/experience and how the available resources/facilities are suited to accomplish the project objectives.

V. Expected Results

Provide the following information:

1. What are the anticipated deliverables of this project in terms of knowledge, recommendations and/or products?
2. How will the results from this project be applied for the management of citrus, HLB or other diseases?

Save the .pdf file naming it with your *LastName.Initial_Preproposal.pdf*, i.e. *Jones.J_Preproposal.pdf*

Email completed Pre-proposals to catp@citrusrdf.org on or before the Monday, April 15, 2019, 5:00 pm Eastern time deadline.

All questions should be emailed to catp@citrusrdf.org

Pre-proposals will be reviewed by the CRDF Research Management Committee with their recommendations for full proposal invitations to be considered and approved by the CRDF Board of Directors. The list of Pre-proposals invited to submit Full Proposals will be posted to citrusrdf.org web page on or before May 22, 2019.

INSTRUCTIONS FOR FULL PROPOSALS

Invited Full Proposal Submission

Only complete, invited full proposals will be accepted for funding consideration. The deadline to submit invited Full Proposals is Monday, June 24, 2019, by 5:00 pm Eastern time. No exceptions will be made.

<u>**Content Full Proposal Submission:**</u>
All documents described below are required.
There are three documents that comprise the Full Proposal package:

1. **Full Proposal Cover Page and Budget** - <u>Form CB-19</u> -*link to download form:* **http://citrusrdf.org/wp-content/uploads/2019/04/CB-19-Cover-Page-and-Budget.pdf** - (5 pages; pdf file. CB-19 does not count in the 10-page limit).
2. **Budget Justification** (Word file; does not count in 10-page Narrative limit)
3. **Project Narrative – 10-page limit** (Word file)
4. **Subcontract Budget** - <u>Form SC-19</u> -*link to download form*: **http://citrusrdf.org/wp-content/uploads/2019/04/SC-19-Subcontract-budget.pdf** (4 pages; pdf file. SC-19 forms do not count in the 10-page limit) - complete if applicable, using a separate form for each proposed subcontract.
5. **Appendices** as outlined below (do not count in the 10-page Narrative limit)

CB-19 Full Proposal Cover Page and Budget Instructions: Form CB-19 does not count towards the 10-page limit of the body of the proposal.

CB-19 Page 1 - Complete all fields on the first page of Form CB-19 -*link to downloaded form*: **http://citrusrdf.org/wp-content/uploads/2019/04/CB-19-Cover-Page-and-Budget.pdf**
Biohazard Regulation/DNA: If you are working with regulated agents or materials, and have an approved IBC plan, check "Yes" to indicate you are in compliance with their guidelines. Otherwise, check "No".
Today's Date: Enter the date on which you complete and submit your proposal.
Project Title: Enter the title for your project (from invited pre-proposal).
Principal Investigator: Enter a single point-of-contact for the Principal Investigator that will be heading the project.
Project #: As shown on posted list of invited pre-proposals.
Email: Use a valid email address for your point-of-contact; this will be the primary means of communication.

Phone: Include your phone number, along with country and city codes.

Organization: Enter the name of the organization through which you are working on this project.

Co-PIs and Collaborators: Enter the names and affiliation of your Co-PIs and primary collaborators. Secondary collaborators may be included here if there is sufficient space. A Co-PI is anyone who has a separate budget under the project, or otherwise has a significant role in completing the proposed work. A collaborator may provide advice or materials, or receive materials for analysis. Collaborators cannot have a budget in the project, and have no contractual obligation. Section 11.b. later in these instructions outlines the Personnel Allocations requirement that lists the PI, Co-PI's and Collaborators, with each of their roles by Objective; this spreadsheet is not counted in the 15-page limit.

Address: Enter your physical mailing address. This will be a secondary means of contact.

Project Duration (years): Enter the duration of your entire project in years (no more than 3 years).

Total Funds Requested (total project): This field populates automatically from page 2 of Form CB-19. Verify the accuracy of the total funding for your project factoring all years included in Project Duration in $US. **CRDF does not allow inclusion of indirect costs in project budgets.**

Year 1 Funding Request: This field populates automatically from page 3 of Form CB-19. Verify the accuracy of the Total Direct amount from Page 3 of 5 representing funding you are requesting for the first year of the project in $US.

Abstract: Briefly summarize your project (approximately 500 words), including objectives and sufficient detail that will allow reviewers to have a clear idea of your project design and anticipated benefits. Content must fit in the allotted space without scrolling.

Instructions for Project Budget Forms Pages 2-5 - The Budget pages should be completed along with the Full Proposal Cover page 1. Beginning with the Year 1 Budget on page 3, complete the budget form for each year of the project as designated on Pages 3 to 5. These amounts automatically populate to Page 2, the cumulative budget for all years of the project. Budget forms do not count towards the 10-page limit of the body of the proposal.

When completing entries for personnel to be employed under this project, consider shifting the salary request to the 2nd quarter of the first year of the project if an employee is a new hire. This will more realistically reflect actual employee cost in the first year of the project. Reasonable cost of living increases can be included in personnel entries in the budget and should be described in the budget justification.

NOTE: Stipends for graduate student involvement in the project should be included as part-time OPS, not staff. In addition, tuition waiver for graduate students is not a personnel expense but, if requested, should be included under "Other Direct" costs.

Requests for travel expense should consider costs of travel related to conduct the research, as well as reasonable expenses related to presenting project results to peers and stakeholders. Details of proposed travel should be provided in the budget narrative. Do not include purchase of gasoline or vehicle maintenance as travel costs. Instead, include them as Supplies/Materials expense.

If applicable, the Form SC-19 Subcontract Total Direct (line 21) for each year of the project from all Form SC-19's must be added together and manually inserted into pages 3 to 5 of the Project Budget Forms under Subcontracts (line 17 on CB-19). <u>Verify that all amounts are correct, including Subcontractor totals.</u>

Do not leave any fields blank. Be sure to complete all three yearly budget forms, adding zeroes in any years of the form if needed. This will allow the forms to properly function in calculating sums and transferring values to the composite forms.

<u>Budget Justification (narrative):</u> This is a Word file, saved as a PDF and combined with Form CB-19 (does not count in 10-page Narrative limit).

Provide a brief statement that details the following expense categories:

Personnel: Their role and specific responsibilities in the project. Please be certain to rely on your current institutional fringe rates when calculating personnel costs. Except for PI and Co-PI's, list specific position titles instead of employee names unless the individual is critical to the project. Replacement of personnel listed in this section must be pre-approved by CRDF.

NOTE: Stipends for graduate student involvement in the project should be included as part-time OPS, not staff. In addition, tuition waiver for graduate students is not a personnel expense but, if requested, should be included under "Other Direct" costs.

Supplies/Materials: Provide general details of types of supplies and materials that will be utilized for the project and are included in the budget request. This description should demonstrate the need for these expenses to complete the objectives of the proposed research.

Travel: Provide details for in-state and out-of-state travel and purpose of the travel for each trip. Sufficient detail should be provided to assess the value to the project and to CRDF. Include the number of trips, etc. Do not include fuel or maintenance expenses in travel, but move to the **Supplies/Materials** category.

Subcontracts: Summarize the participation of other institutions or entities who will participate in the project and their required budget. (A separate Form SC-19 [see 8. below] must be completed and submitted for each entity. Each subcontractor should also complete a budget justification.)

Other Direct: Provide justification of all costs shown.

Equipment: Provide details for equipment with cost in excess of $500. Define the value of the equipment to completion of the project objectives. A specific quote should accompany the proposal.

<u>Project Narrative:</u>

Items 1 – 6 of this section comprise the Narrative and are subject to a 10-page length limit. Submit this document as a PDF file.

1. **Current Situation/Literature Review:**
   a. What is the purpose of this proposed project and how does it address a specific priority or priorities from this RFP?
   b. Summarize the body of knowledge in the literature as it relates specifically to this project.

    c. Describe and cite ongoing or recently completed significant research related to the proposed project including the work of co-PIs and collaborators.

    d. Describe preliminary work pertinent to the proposed work. Attach important preliminary data as **appendix i**; appendices will not count towards the 10-page limit.

2. **Objectives:**
   a. List specific objectives to be accomplished, including the overall goal of the project.
   b. Do subsequent objectives rely on the success of a prior objective? If so, how will this affect the project and how will this be managed?

3. **Project Deliverables:**
   a. What knowledge, information, recommendations, products or tools will result from this research?
   b. How and when will the results of this research be communicated to growers?

4. **Experimental Approach:** Provide a description of the project experimental design.

Plant improvement projects - refer to the "Appendix-Plant Improvement Germplasm Evaluation Guidelines" for greenhouse and field trial requirements which can be accessed from the following link:

http://citrusrdf.org/wp-content/uploads/2019/05/Appendix-Plant-Improvement-Germplasm-Evaluation-Guidelines.pdf

   a. Non-plant improvement projects that include field trials are required to clearly state:
      i. Experimental design: Plot size, layout, treatments, blocks, replications and experimental and sampling unit.
      ii. Site description including the number of sites and criteria for site(s)
      iii. Application methodology (equipment, coverage, etc.) and timing
      iv. Data collection: What will be measured, how will it be measured and how often data will be collected.
      v. Permitting or crop destruction requirements.

5. **Project Timeline:** Timeline of the project with objectives and specific project accomplishments as milestones including subcontractor milestones.

6. **Cost/Benefit of Proposed Intervention (if applicable)**

7. **Bibliography of Literature Cited in the Project Narrative** (not included in 10-page limit)

SC-19 Subcontract Budget Forms (if applicable):

8. **Subcontract Budget (Form SC-19)** *-link to download form:* **http://citrusrdf.org/wp-content/uploads/2019/04/SC-19-Subcontract-budget.pdf** If you have co-PIs (consultants, professional services or institutions) who will receive funds from your project, complete a separate Form SC-19 for each subcontractor from another entity (the budget of cooperators

from your own institution should be included in the main budget). Please complete pages 2-4 of these forms for each year of the subcontract; the cumulative budget will automatically populate on page 1 of SC-19. A budget justification (narrative) for each subcontract budget should be prepared and attached. (These forms are not included in the 10-page limit).
The total for each year (1, 2 and 3) of all subcontract budget forms must be added and entered manually into the subcontract field of the project budget (CB-19) form for each corresponding year. If more than one subcontractor, verify that all are included in the Subcontract Total for each year. The Subcontract total on page 2 of Form CB-19 should calculate automatically.
NOTE: While many .pdf forms can usually be combined into one form, each Form SC-19 must be saved as a separate file to avoid fields being overwritten. Name each file with your name and proposal number, i.e. *lastname_19-###_SC19[a, b or c as applicable if multiple forms].pdf*

9. **Regulatory & Commercialization Considerations**
   This section is required for all projects developing research concepts, products or tools that are regulated by any state or Federal agency and/or have commercialization needs. Applicants must provide evidence that state and Federal regulations have been considered and a plan has been developed to improve the likelihood of successful regulatory compliance. The pathway to commercialization of products and tools must also be described to give evidence for the feasibility of commercialization. Please provide the following as **appendix ii**; this document will not count towards the 10-page limit.
   a. Describe the regulatory requirements of the concept, product or tool during the research and development stage and for implementation.
   b. Describe how this proposal accounts for regulatory considerations including:
      i.   Acquisition of necessary permits for material movement and trial work
      ii. SOPs for all pertinent agencies to ensure compliance.
   c. Identify institutional experts, relevant state and federal agencies or regulatory consultants that have been engaged to discuss the regulatory aspect of this research concept.
   d. Describe what will be required to achieve commercialization of project deliverables.
   e. Identify collaborators or consultants that have been engaged with demonstrated expertise in product development and commercialization of this research concept.
   f. Describe intellectual property status including any tools used to develop the product that may affect commercialization.
   g. Describe plans and processes to communicate technology status in reports, presentations and publications without compromising the ability to secure the appropriate patent protection.
   Questions regarding regulatory issues may be addressed to aescares@freshfromflorida.com.
   Commercialization questions should be addressed to institutional offices of technology transfer.

10. **Summary of previously CRDF-funded work** – If the proposed project is a follow-up to a previous CRDF-funded project, please summarize the following as **appendix iii**, which will **not** count towards the 10-page limit: Include only work accomplished by you in a previously funded CRDF project.
    a. Title and CRDF number of previous project

b. Objectives of previous project

c. Significant results of previous project, including publications.

Please note that PIs with any current CRDF funding must be up to date on required project reporting including quarterly and annual reports, at time of full proposal review, to be considered for 2019 project funding.

11. Current/Pending and Personnel Allocations (appendix iv)

a. Current and Pending Support *-link to download forms:* **http://citrusrdf.org/download-form**   This excel spreadsheet follows project budget information and is used by reviewers to provide context (and funding detail) of ongoing research by the PI as well as other pending proposals from the team. The purpose of this form is to provide an overview of funding available to the PIs, and to communicate current and planned research that may be related to that proposed to CRDF. The form should be completed with information for each of the PIs that are contributing to the proposal.

b. Personnel Allocations Spreadsheet *-link to download forms:* **http://citrusrdf.org/download-forms**   Like the current and pending form, this spreadsheet, information is useful to project reviewers and to CRDF to assess level of effort and expertise to meet objectives. List all participants including the PI, Co-PIs and Collaborators shown on the CB-19 and each of their roles by objective.
Save BOTH tabs of the spreadsheet as a pdf file with the name
lastname.19-XXX.appendix iv.pdf

12. **Brief resumes** with only relevant publications are required for all key personnel. Do not list all of your publications; full CVs are not required. Brief resumes should outline the capabilities of those doing the work. Collaborators should be included in key personnel. **(appendix v)**

13. **Institutional Authorization** form (**appendix vi**) *-link to download form:* **http://citrusrdf.org/download-form**   This is typically the routing form used by institutions to document review and approval of project proposals prior to their submission. Where available, a copy of the completed institutional authorization form (e.g. UF, IFAS DSR-1) should be included here. All USDA-ARS applicants must submit an approved ARIS form. If your institution does not use such a form, a generic authorization form is provided for your use in the column at the upper left of this page.

14. **Letter of authorization** from each institution for which a Subcontractor Budget form has been completed **(appendix vii).** This statement allows CRDF to know that subcontractors have agreed, if the project is approved, to complete the objectives with the budget details as provided in the proposal.

15. **Provide a statement of commitment** from each Co-PI and Collaborator **(appendix viii)**.

16. **Other relevant information** regarding this proposal should be included here (*appendix ix*).

Appendices:
i. Preliminary Data (see 1d)
ii. Regulatory and Commercialization Considerations (see 9)
iii. Summary of previously funded CRDF Projects (see 10)
iv. Current and Pending Support and Personnel Allocations (see 11)
v. Resumes (see 12)
vi. Institutional Authorization form (see 13)
vii. Authorization Letter from each Subcontractor (see 14)
viii. Statement of commitments from each Co-PI and Collaborator (see 15)
ix. Other Relevant Information (see 16)

Full Proposal Layout Details

Full Proposals should be written in English and submitted as email attachments in Adobe PDF format. Page margins should be one inch on all sides. Use Times New Roman or a similar typeface set to 12-point and single line spacing. Documents exceeding word or page limits will not be considered. Page numbers should be placed on the lower right hand corner with the Principal Investigator name and the page number (e.g., Robins-2).

Each file submitted as a component of your full proposal should be named with the Principal Investigator name and CRDF-assigned project number provided in your email and form identifier (e.g., *Jones_19-0##_proposal, Jones_19-0##_CB19, Jones_19-0##_SC19*). When naming files to be included in your Full Proposal submission avoid using special characters (! @ # $ % &) in the filename.

Invited Full Proposal packages should be emailed to catp@citrusrdf.org.

Questions may be emailed to catp@citrusrdf.org