

Reviewing Grants Using the Peer Review System (PRS)

<https://prs.nifa.usda.gov/>

PRS is NIFA’s confidential and collaborative electronic system for grant application viewing.

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Welcome to Panelists

I sincerely thank you for your willingness to serve as a NIFA peer-review panelist. Your role is critically important, and we rely on you to provide high-quality feedback to our competitive grant applicants. We have standardized and adopted best practices that will guarantee this high-quality feedback and convey to our applicants that their efforts were recognized.

Your feedback is sent as a package to the Project Directors and includes your written reviews and the Panel Summary. It is important that these components are of high-quality and communicate well. Our National Program Leaders and Program Specialists will be sharing best practices throughout the peer-panel process. Following this guidance will make your task easier while assuring high quality, uniform standards.

I truly appreciate your efforts to make our peer review process even better.

Parag Chitnis

Associate Director for Programs

National Institute of Food and Agriculture

U.S. Department of Agriculture

Overview

This document provides the following information:

- Before you use PRS
- How to Review Proposals Before the Panel in PRS
- During the Panel
 - Panel Summary Guidelines
 - Scribe Responsibilities
 - Other Reviewer Responsibilities
- Center of Excellence (does not apply to all panels)
- Questions
- Appendix 1: Example Individual Reviews

Before You Use PRS

Things to Keep in Mind

- **Internet Browsers:** PRS has been modified to work on multiple browsers. Internet Explorer, Chrome, and Firefox on PCs and Safari on Macintosh computers have all been verified as compatible with PRS. If you have difficulty accessing PRS in one of these browsers, please contact the program staff member assisting with your panel.
- **Pop-Ups:** You will need to disable your popup blocker in order to see all messages from PRS.
- **Adobe Acrobat Reader:** You must use version 7.0 or higher. In earlier versions of Adobe, a blank page will come up when you try to access a proposal.
- **User ID (email):** This is the email address we have for you in our database. See the email instructions we sent on accessing PRS.

- **PRS times out** in about an hour if there is no activity. Write your reviews and summaries in a word processing program (such as Word). Then, when they are ready, paste them into PRS. Also, save a back-up copy of your reviews until the panel is complete.
- **Special characters** do NOT paste reliably into PRS. This includes different font styles and formatting (e.g., bullets and smart quotes). **BOLD**, *Italics*, and Underlining, if desired, can be added to text from within PRS.
- **There is no spell check in PRS.**

Before Panel: Application Review

Before you can complete a review, you will be asked to consider three things:

- Confidentiality
- Conflict of interest rules
- Careful reading of instructions

Login Screen

Go to <https://prs.nifa.usda.gov> and you should see the login screen:

USDA United States Department of Agriculture
National Institute of Food and Agriculture

NIFA Peer Review System

Home | Confidentiality | Helpful Hints | Contact us

Welcome

Welcome to the Peer Review System for National Institute of Food and Agriculture. If you are a reviewer, you may log in and submit grant application reviews and panel summaries via PRS. If you are a potential reviewer, you may update your profile to help NIFA organize future review panels.

If you do not have a login, you may use this link to [Create an account](#).

PRS has been modified to work on multiple browsers. Internet Explorer, Chrome, and Firefox on PCs and Safari on Macintosh computers; have all been verified as compatible with PRS as of December 2012. If you have difficulty accessing PRS on one of these browsers, please contact the program staff member assisting with your panel.

Privacy information: The information you provide will be used by NIFA in selecting reviewers for grant applications submitted to NIFA programs. In addition, the contact information may be used to update records pertaining to active NIFA grant applications and grants. NIFA may share the information you submit with other Federal agencies but only for the purpose of assisting these other agencies in the review of grant applications submitted to them. This information will not be used for any other purpose.

An asterisk (*) indicates a required field.

Log in

* User ID :

* Password :

Submit

Forgot your password?

Click here to access your account via your [verification question](#).

Home | Confidentiality | Helpful Hints | Contact us

- You can access instructions through the “Helpful Hints” link in the menu bar at the top and bottom of the screen.
- Your User ID is the email that is in the NIFA database. It should be included in the email that you received with instructions on how to access PRS.
 - If you are creating a new account, you will be asked to fill out/confirm existing data in a questionnaire that includes information about your education and areas of expertise.
- If you have trouble logging into PRS, please contact your program staff. They can reset your password if your verification question is not working or make.

Home Screen

Puppet Agriculture Program		Review Instructions
Grant applications for your review:		
Vertical Farming Best Practices for Enhanced Bird Seed Production	Application #: 2018-99972 Panelist #: 2	Create/modify your review Review state: Submitted Read all reviews
Project director: Big Bird	Institution: Yellow Feathers, Inc.	Review submitted: 03/12/2019
Safe Composting Temperature for Leftover Cookie Monster Cookies	Application #: 2018-99980 Panelist #: 3	Create/modify your review Review state: Saved, Not Submitted
Project director: Oscar T. Grouch	Institution: Trash Can College	Panel start: 03/20/2019
Examining the rainbow as potential sustainable cropland.	Application #: 2018-99999 Panelist #: 1	Create/modify your review Review state: New
Project director: Kermit Frog	Institution: Muppet University	Panel start: 03/20/2019
Grant applications reviewed by others:		
Improving peanut butter nutritional value and quality in a la peanut butter sandwiches	Application #: 2018-99983	Read all reviews
Project director: Amazing Mumford	Institution: Magicians United	Panel start: 03/25/2019

After you log on, you will see a list of proposals for under each assigned program divided into two sections: “Grant applications for your review” (your assigned reviews) and “Grant applications reviewed by others”. If you have more than one group of applications to review, you will need to scroll down to see them.

You’ll see the project tile, project director name, application number, your panelist number (for your assigned applications only), institution, options for actions, review state (for your assigned applications only), and the panel start date.

Click on the application number in order to read the proposal (Adobe Acrobat reader is required). Click on “Create/modify your review” to write or edit your review. You can save your review and return to edit it later before submission. Once you have “Submitted” your review, you can click on “Read all reviews” to view what other panelists have written.

As long as you do not have a Conflict of Interest, you can also read applications and reviews that have been reviewed by others by clicking the appropriate links.

Confidentiality Guidelines

When you click on “Create/modify your review” for each assigned proposal, you will see NIFA’s Confidentiality Guidelines:

While the content of applications is subject to the Freedom of Information Act (FOIA), reviewers should not disclose information contained in applications as it is the role of the Department of Agriculture, not the reviewer, to determine whether such information is releasable pursuant to the FOIA. For this reason, confidentiality must be maintained--therefore please DO NOT copy, quote, or otherwise use material from this application. If you believe that a colleague can make a substantial contribution to the review, consult with the appropriate National Program Leader before disclosing either the contents of the application or the applicant's name. When you complete the review, please destroy the application and maintain its confidentiality. If you are unable to review, please contact the respective National Program Leader, destroy the application and maintain its confidentiality.

Unauthorized disclosure of confidential information may subject you to administrative sanction, i.e., removal from review of the application and/or disqualification from involvement in future reviews.

There will be buttons to “Accept” or “Decline” these guidelines. If you click “Decline” by accident, ask your program staff to have the review reset.

Conflict of Interest

After accepting the Confidentiality Guidelines, you will be asked whether or not you have a Conflict of Interest with the proposal according to NIFA’s guidelines:

You must disqualify yourself from the review panel if you are a project director, co-project director, collaborator or are considered key personnel, or have a personal relationship (spouse, child, sibling, parent, or close personal friendship) with personnel on any application being considered by the panel. You must disqualify yourself as a reviewer of an application if you have had one of the following relationships with the project director or other key personnel listed in the application:

- Have ever been a thesis or postdoctoral advisee/advisor;
- Have been a co-author on a publication within the past three years, including pending publications and submissions;
- Have been a collaborator on a project within the past three years (including current and planned collaborations).
- Have had a consulting/financial arrangement or other conflict-of-interest in the past three years, including receiving compensation of any type (e.g., money, goods or services);
- Are currently employed by the same institution, were previously employed by the same institution within the past 12 months, or are being considered for employment at the same institution; or
- Have any relationship that you think might affect your impartiality or be seen as doing so by a reasonable person familiar with the relationship.
- If there are other circumstances that you feel could affect your impartiality regarding an application, please inform the program director or panel manager.

If you determine that you have a conflict of interest, or an appearance of a conflict, and are unable to review an application that has been assigned to you, please notify the NIFA National Program Leader immediately.

If you click “I have a conflict” by accident, ask your program staff to have the COI reset so that you can write your review. You will not be able to view applications or their reviews if you have a Conflict of Interest.

Review Instructions

You will also be given a list of any documents uploaded in the Review Instructions and you will need to confirm that “I have read the above documents”.

Write your Review

Review Form for Examining the rainbow as potential sustainable cropland. , NIFA

Grant Application #:

2018-99999

Institution:

Muppet University





Project Director:

Kermit Frog

[Review Instructions](#)

[Conflict of Interest](#)

Review :

B **I** **U**    

Maximum length 10,000 words

Score :

☐ Excellent
☐ Very Good
☐ Good
☐ Fair
☐ Poor

Save For Later

Continue

The top of the screen will have usage tips:

To avoid possible data loss, please use word processing software to compose and save the text of your review(s) or panel summaries, then copy and paste it into PRS.

Also, please proofread your review(s) or panel summaries as some formatting and special characters may not be preserved.

You will paste and edit your review in the large white text box where bold, italics, and underlining are available.

Under your review, you will need to indicate your score by clicking on the button next to the score. The scoring categories may vary depending on program.

Afterward, you have two button choices:

- **Save:** Click “Save for Later” at the bottom to review and write more at another time.
- **Submit:** Click “Continue” and then “Complete Submission.” You will then be able to read reviews from the other panelists assigned to this proposal. This is the collaborative aspect of the program.

Remember: Your review is not complete (and we at NIFA can’t see it) until you click “Continue” AND “Complete Submission.” “Save” just saves your work for later.

During the Panel: Panel Summaries

Panel Summary Guidelines

What is a Panel Summary?

- A panel summary is the compilation of comments noting the strengths and weaknesses of a given proposal.

When are Panel Summaries prepared?

- Summaries are prepared after a proposal has been discussed during the peer-review panel meeting (panel days). Panel Summaries are prepared only for proposals that are discussed in panel.

When writing a summary, please ensure that:

- It is written as full grammatically-correct sentences, with each of the 3 sections as a single paragraph.
- You are not copying/pasting large sections of language from individual reviews; the applicant will receive the reviewer's individual reviews and the panel summary.
- It is written in the voice of the panel (*e.g.* the panel felt, the panel found, etc)
- Do not direct the applicant's project and how to resolve the weaknesses.
- Do not recommend that a proposal is resubmitted, funded or not funded.
- Do not use any bullets, tabs or indents.
- Do not use any special characters or symbols (*e.g.*, Greek letters, etc). Spell these out.
- Identify all acronyms parenthetically upon first use except for those extremely common ones (*e.g.*, DNA, RNA, PCR, *etc.*) that cut across all biological and social disciplines.

A summary typically has three sections:

- **Positive Aspects of the Proposal:** Summarizes the panel discussion of major strengths of the proposal. If something was discussed in panel as a major strength of the proposal (*e.g.*, good project team, highly relevant), then it should be included in the panel summary and not omitted. Proposals ranked in outstanding or high priority should have many more strengths (*i.e.* excellent scientific merit, the applicant(s) are qualified to successfully complete the proposed studies, and the project is relevant to food and agriculture) than weaknesses. Proposals ranked in upper medium priority should have moderately more strengths than weaknesses.
 - For example: The panel felt the proposed project was innovative... This project aligns well with program priorities and USDA, NIFA goals... Strong collaborations were evident... Project and data management plans are appropriate.
- **Negative Aspects of the Proposal:** Summarizes the panel discussion of major weaknesses of the proposal. If something was discussed in panel as a major weakness (*i.e.* concerns with the scientific merit of the proposed studies, the qualifications of the applicant(s), and/or relevance to food and agriculture) of the proposal, then it should be included in the panel summary and not omitted. Proposals ranked in lower medium priority or below should have more weaknesses than strengths. Concerns with the budget can be addressed, but a proposal's ranking should not

be based on their budget request. The summary should point the weaknesses, but not provide your opinion on how the weakness is to be resolved.

- For example: The project team may consider expanding their detail on... Proposal did not adequately address... Panel was concerned there was limited time and effort dedicated to... Insufficient preliminary data... Panel felt project did not include sufficient expertise in X, Y, Z...
- **Synthesis comments:** The summary should reflect the final ranking of the proposal and recommendations of the panel to the applicant, (i.e., summarize the general viewpoint of the panel and why the panel was or was not enthusiastic about the proposal), and the general level of merit of the proposal (e.g., very meritorious, meritorious, some merit, limited merit). Discrepancies in written reviews should be discussed. Encourage or discourage resubmission of revised application by using statement such as “This is a very meritorious application for which the panel had a high level of enthusiasm.”
 - For example: The panel felt that more detail/further development of X, Y, Z could have made the proposal more competitive... Overall, the proposed project was well focused with high potential impact... However, X, Y, Z diminished the panel’s enthusiasm for the proposal.


Note: please do not include language such as “this proposal should be resubmitted”, “this proposal should be funded”, “this proposal should not be funded” or “this proposal was placed in the High Priority Category” as resubmission decisions are made by the applicant, and funding decisions are made by NIFA.

Responsibilities for Panel Summaries

- Note: Summaries are not initiated until the panel meeting, before then the “Summaries” option will not be present in the menu at the top of the screen.
- The Scribe is responsible for drafting the panel summary and incorporating comments.
- The other reviewers assigned to each application are responsible for reviewing and providing comments on the panel summary.
- Note: More detailed instructions for panel summaries will be provided during the panel.

Summary Menu

To access the summaries, panelists should click on “Summaries” in the top bar menu in PRS.

A9876 Puppet Agriculture Program – Panel A			
Grant applications for this Panel:			
Proposal Title:	Vertical Farming Best Practices for Enhanced Bird Seed Production		
Grant Application :	2018-99972	Institution:	Yellow Feathers, Inc.
Project Director:	Big Bird	Panel Summary State :	Released for Comments
Panel Scribe :	Daniel Tiger	<input checked="" type="checkbox"/>	
Panelists :	Mickey Mouse	<input checked="" type="checkbox"/>	Arthur Read <input type="checkbox"/>
Proposal Title:	Safe Composting Temperature for Leftover Cookie Monster Cookies		
Grant Application :	2018-99980	Institution:	Trash Can College
Project Director:	Oscar T. Grouch	Panel Summary State :	Released for Comments
Panel Scribe :	Lamb Chop	<input checked="" type="checkbox"/>	
Panelists :	Detective Pikachu	<input type="checkbox"/>	Mickey Mouse 
Proposal Title:	Examining the rainbow as potential sustainable cropland.		
Grant Application :	2018-99999	Institution:	Muppet University
Project Director:	Kermit Frog	Panel Summary State :	New
Panel Scribe :	Mickey Mouse	<input type="checkbox"/>	
Panelists :	Peppa Pig	<input type="checkbox"/>	Doc McStuffins <input type="checkbox"/>

A list of applications is shown with basic information on the proposal, the current state of the summary, and the names scribe and other panelists assigned to the application. Panelists will not be able to view applications where they have a Conflict of Interest.

- The Panel Summary State will dictate which panelist is able to take the next step. New allows the panel scribe to edit, Released for Comments allows other assigned panelists to edit, and Compile allows the panel scribe to do final edits. Additionally, for certain programs, there are two other possible options: “Review COE” and “Review Partnership”.
- A checkmark next to a panelist’s name means that they have drafted/compiled (panel scribe) or reviewed (panelists) the panel summary.
- A lock icon to the right of the panelist name means the panelist is currently editing the panel summary and other panelists cannot edit it.

New (Scribe Only)

After each application discussion, the scribe will click on “New” for that application to draft the panel summary. If an application undergoes the triage process and does not have a discussion, NIFA staff will mark the application as “Triaged” and the assigned panelists will not need to work on a panel summary.

Panel Summary for Examining the rainbow as potential sustainable cropland. , NIFA

Grant Application : 2018-99999

Institution: Muppet University

Status: **New**

Project Director: Kermit Frog

Panel Scribe : Mickey Mouse

View : [Reviews](#)

Panel Summary:

Positive Aspects of the Proposal

B

I

U

body p

+ Negative Aspects of the Proposal

+ Synthesis Comments

Back

Save For Later

Submit

- Complete each section of the panel summary form. Click on the +/- in the header bars (Positive Aspects, Negative Aspects, Synthesis) to expand or minimize that section. (Note: The program summary form may differ from the example shown. Please review the instructions provided for your specific panel.)
 - **Positive Aspects:** summarize the panel discussion of the strengths of the proposal.
 - **Negative Aspects:** summarize the panel discussion of the weaknesses of the proposal.
 - **Synthesis Comments:** explain/justify the final ranking of the proposal, but DO NOT include the ranking or the word “funding” in the text.
- To view the reviews, click “Reviews.”
- To save the panel summary and work on it later, click the “Save for Later” button.
- To submit the panel summary and make it available to other panelists, click the “Submit” button. (After the other reviewers have seen and commented on the panel summary, the scribe will then incorporate any comments before the final submission.)





Released for Comments (Other Proposal Reviewers)

If it is not already locked for review by another reviewer, click on Panel Summary State “Released for Comments” to access the panel summary. To lock panel summary from other assigned reviewers while adding comments, click “Lock-to Comment.” In order to mark it as reviewed in PRS, all assigned panelists must do this even if they don't have any edits to suggest.

Panel Summary for Examining the rainbow as potential sustainable cropland. , NIFA

Grant Application : 2018-99999 Institution: Muppet University Status: Released for Comment
Project Director: Kermit Frog Panel Scribe : Mickey Mouse View : [Reviews](#)
Panel Summary: [Original Panel Summary](#) [Updated Panel Summary](#)

Positive Aspects of the Proposal

B I U    

The proposal set out lofty objectives that are relevant to the Muppet farming community and might provide useful knowledge to other puppet-based communities. The project team appeared amply qualified. The proposal focused on cooperative farming, bringing Muppets and other stakeholders into the development process in a meaningful way. The proposal clearly recognized the lag between implementation and positive outcomes in Muppet produce.

body p

+ Negative Aspects of the Proposal

+ Synthesis Comments

Back

Save For Later

Submit

- To view the reviews, click “Reviews.” To display the original panel summary, click “Original Panel Summary.”
- Click on the +/- in the header bars (Positive Aspects, Negative Aspects, Synthesis) to expand or minimize that section while reviewing the text and make your edits:
 - No changes: insert last name and indicate agreement.
 - Comments: insert last name and enter comments.
- To save your comments and continue working on reviewing the panel summary, click “Save for Later”. Other reviewers cannot review and comment the panel summary while you have it locked.
- After you are finished commenting on the panel summary, click the “Submit” button. You cannot go back into the summary after you submit your comments. If you left out a comment and the summary is still available, you can contact the Scribe to ask them to incorporate your

Center of Excellence

This section is only applicable to programs that allow requests for [Center of Excellence](#) review.

Once the panel summary has been completed (drafted, reviewed by assigned panelists, and compiled/submitted the by the scribe), the “Review COE” option in the Panel Summary State will show up next in PRS.

Proposal Title:	Examining the rainbow as potential sustainable cropland.		
Grant Application :	2018-99999	Institution:	Muppet University
Project Director:	Kermit Frog	Panel Summary State :	Review COE
Panel Scribe :	Mickey Mouse	<input checked="" type="checkbox"/>	
Panelists :	Peppa Pig	<input checked="" type="checkbox"/>	Doc McStuffins <input checked="" type="checkbox"/>

COE Guidelines

Eligible applicants who wish to be considered as centers of excellence must provide a brief justification statement at the end of their Project Narratives and within the page limits provided for Project Narratives, describing how they meet the standards of a center of excellence. The panel should review the applications requesting COE designation based on the following criteria:

- (A) The ability of the center of excellence to ensure coordination and cost effectiveness by reducing unnecessarily duplicative efforts regarding research, teaching, and extension in the implementation of the proposed research and/or extension activity outlined in this application;
- (B) In addition to any applicable matching requirements, the ability of the center of excellence to leverage available resources by using public-private partnerships among agricultural industry groups, institutions of higher education, and the Federal Government in the implementation of the proposed research and/or extension activity outlined in this application. Resources leveraged should be commensurate with the size of the award;
- (C) The planned scope and capability of the center of excellence to implement teaching initiatives to increase awareness and effectively disseminate solutions to target audiences through extension activities in the implementation of the proposed research and/or extension activity outlined in this application; and
- (D) The ability or capacity of the center of excellence to increase the economic returns to rural communities by identifying, attracting, and directing funds to high-priority agricultural issues in support of and as a result of the implementation of the proposed research and/or extension activity outlined in this application.

Additionally, where practicable (not required), center of excellence applicants should describe proposed efforts to improve teaching capacity and infrastructure at colleges and universities (including land-grant colleges and universities, cooperating forestry schools, certified Non-Land Grant Colleges of Agriculture (NLGCA) (list of certified NLGCA is available at NIFA website), and schools of veterinary medicine).

If you have any questions, check with your NIFA program team.

Review COE

After a determination has been made on COE status, the scribe will click on “Review COE” next to Panel Summary State to get to the following screen:

Grant Application :	2018-99999	Institution:	Muppet University	Status:	Review COE
Project Director:	Kermit Frog	Panel Scribe :	Mickey Mouse	View :	Reviews

[Original Panel Summary](#) [Updated Panel Summary](#)

Applicant submitted justification for COE Review: Yes ☐ No ☒

Reviewed for COE designation: Yes ☐ No ☒





COE Review outcome

Met the Standard for COE ☐

Did not meet the Standard for COE ☐

Not ranked highly enough for COE review ☐

Additional COE outcome justification:

B I U    

- The default status for COE is “No” since a majority of applicants do not request COE consideration. In the case of applicants who have not requested COE review, the panel scribe can leave both “No” buttons selected, click on the “Continue”, and then “Submit.”
- If the application requested COE review, the button should be “Yes” for Applicant submitted justification for COE Review,
 - For applications that requested, but were not reviewed for COE due to lower ranking in panel, it should be “No” for Reviewed for COE designation and then “Not ranked highly enough for COE review” under the COE Review outcome section.
 - For applications that requested and received review for COE status, it should be “Yes” for Reviewed for COE designation and the COE Review outcome will depend on the panel’s decision.
 - “Met the Standard for COE” will have an additional button to click to confirm that all criteria were met.
 - “Did not meet the Standard for COE” will reveal checkboxes to mark which criteria were not met.
- Afterward, click on the “Continue”, and then “Submit.”

Other Questions?

- Contact the program staff assigned to your panel, or
- Use the “contact us” option at the top of the screen in the PRS system to report technical difficulties.

Appendix 1: Example Individual Reviews

The following example individual reviews are taken from actual panels but have been redacted to remove identifying specifics. Generally, panelists write their reviews using either a narrative style with paragraphs or using bullets, so examples of both styles are included below.

When viewing these examples, please keep in mind that different NIFA grant programs use different evaluation criteria so these examples may not cover exactly what your reviews should cover. The Panel Manager(s) and NIFA staff for your panel will provide information on what criteria should be used in reviewing applications.

Narrative Style Individual Review Examples

Narrative Style Example 1

This is a New, Research proposal that aims to investigate the impact of long-term legume intercropping-cover cropping in spring small grain production under drought stress condition and N limitations. The response factors used as indicators of system performance include grain yield, quality, soil C and N legacy, microbial indices and shifts leading to improved nutrient and water use efficiencies...

The crops investigated are X and Y and the outcomes of this study will be applicable to all X and Y growing states. The management practice of intercropping or cover cropping is also applicable to most X and Y production systems. Investigating the impact water stress and N limitations on agroecosystems performance may help better understand the impact of those factor on ecosystem productivity. This is particularly important if the research is framed withing the context of limited resources due to climate change and variability. Drought stress accounts for major losses in crop yield. Also, understanding microbial communities and nutrient flows in continuous cropping systems is critical and can provide insights to long term sustainability of U.S agriculture...

a) Scientific Merit of the Application

Strengths: i) The proposal is overall well written and easy to follow. A complex yet interesting design is used to tease apart the impact of water, N, microbes, monoculture and intercropping with legume, 3-year continuous cropping by incorporating field and greenhouse studies. ii) Testable itemized hypotheses are provided and some amount of preliminary data are provided; iii) Schematic descriptions throughout the narrative strengthened the information and made the narrative easy to follow and understand. iv) xx treatments in 4 blocks is a massive experiment leading to collection of several response variables in the field. A greenhouse experiment is also a component of the study and consists of mono and intercropping and four water regimes to produce x treatments where labeled C and N will be used to study legume derived N and microbial uptake of crop derived C; v) Additional information on Table x Results and Pitfalls was detailed, and provided useful information on possible outcomes of the study...

Weaknesses: 1) It was not clear to this reviewer what metabolites are most indicative of water stress. This is also true for the number of polar and nonpolar metabolites that will be measured. It would have been helpful to clarify in the proposal if PLFAs for all microbial groups will be tested? What primers will be used for community profiling? Will other types of fungi like AM also be evaluated? 2) Table x showing results X is vague for some variables. For example, expected shifts in microbial communities based on PLFA (or sequence based) on different groups could be included. Will AMF PLFA reduce in monoculture versus intercropping, or shift in fungal PLFAs? Metabolite profiling is based on amino acids and sugars,

without any specific indicators of drought. 3) Statistical analyses may have to include some structural equation modeling to understand overall relationships of the different variables. This type of research may also benefit from a well-executed principal component analysis. Consultation with a statistician may help strengthen the data analysis aspect of this study...

b) Qualifications of Project Personnel, Adequacy of Facilities, and Project Management

Strengths: This study has PI x with extensive expertise in N and C isotope Biogeochemistry and coPIs (Y and Z) with broad expertise in microbial community assessments, agronomy, microbiology, and gene expression. This team of investigators are well published, have worked extensively in these cropping systems, and have several ongoing funded projects that will support this specific study. The team intend to recruit undergraduate and graduate students as well as a Postdoctoral fellow. They also have very strong international collaborators who will bring unique expertise to the team. Therefore, the team is highly qualified and ready to execute all proposed activities. The research will be conducted at a well-known Research Center, (xxx) with adequate field and lab resources. The Data Management Plan (DMP) and Logic model are realistic with all the details needed for this type of research...

c) Relevance

It was clearly stated with evidence from the narrative that the proposal falls within the scope of this program and specifically addresses program area priorities x and y.

For Priority X, this project will...

For Priority Y, this project will...

Budget (optional)

The budget is balanced and realistic for the proposed activities.

Narrative Style Example 2

This proposal aims at developing an innovative direct seeded Crop-X for essential oil production and its incorporation in a potato-onion cropping system. It focusses on evaluating the feasibility of such an innovative cropping system by measuring agronomic, economic and environmental performance factors.

Novelty, innovation, uniqueness, and originality:

Strengths: Crop-X is an emerging high value multipurpose crop. Agronomic management practices for crop-X focused on essential oil production (high value and rare product currently available) has not been explored in the US. Moreover, incorporating crop-X in a cropping system to increase farmer profitability and minimize risk due to crop failure make this proposal very timely and innovative. Most of the past and current crop-X production systems in the US are focused on fiber and seed and some on chemical z crop-X. Analyzing the risks associated with chemical z crop-X varieties (cross-pollination, high seed/clone cost and unstable crop-X genetics) and focusing on direct seeded crop-X for essential oil might be rewarding, unique and original contribution to crop-X research database in the US.

Weaknesses: Since this is a relatively new crop describing key terminologies used is essential. e.g. What is crop-X essential oil and? The distinction between crop-X essential oil from other products is not clear. These two are different in the sense that these are extracted from different stages and plant parts and crop-X essential oil (aromatic through steam distillation) is almost free from other chemicals.

Project Relevance:

Strength: Scientific data generated from this project will be relevant to a wide range of farmers interested in this high value crop throughout the US. This might be a viable alternate strategy for chemical z crop-X growers in case they get pollinated in the field.

Weaknesses: It is not clear how crop-X crop rotation with crop-Y will be perceived by other farmers in the US where crop-Y is not a major cash crop. Cultivating crop-Y is associated with a lot of soil disturbance and justification for this incorporation is missing. Also, this direct seeded method does not target chemical z as the final product. A lot of US farmers are interested in chemical z production due to already existing market demands in the US. The crop-X essential oil market is yet to be developed and farmers might be facing market uncertainties.

Conceptual adequacy of the research and suitability of the hypothesis:

Strengths: There is justification (lack of feminized seed, cross pollination) provided to hypothesize that direct seeded crop-X for essential oil production could be more beneficial than traditional transplanted type crop-X.

Weaknesses: Crop-X that focusses on chemical production (essential oil and chemical z) is different than fiber varieties in terms of biomass production that is returned to the soil. The rationale behind hypothesizing that direct seeded crop-X could offset the effect of crop-Y cultivation that intensive soil disturbance on soil health is not provided (basis of hypothesis 1). chemical z and seed varieties cannot compete well with weeds as compared to fiber crop-X varieties due to lower planting density. Although the direct seeded crop-X for essential oil production seems to propose a higher seeding rate without any mulch for weed protection, it would be interesting to see how that would influence the plant physiology and secondary metabolites.

Clarity and delineation of objectives:

Strengths: There are three clear and well defined objectives of this proposal that focusses on comparing the performance of direct seeded crop-X with traditional transplanted crop-X and assessing the economic, agronomic, and environmental viability of incorporating crop-X in a crop-Y based cropping system.

Weaknesses: It is not clear how multiple locations where the study will be replicated vary in soil and climate properties. Testing crop-X biomass for animal feed does not seem to fit in any of the 3 objectives.

Demonstration of feasibility:

Strength: The proposal mentioned that preliminary studies were conducted with direct seeded crop-X as a row crop and has provided picture of the experiment. Strong farmer support and interest in the proposal has been demonstrated through stakeholder input data and support letters. A strong project management plan along with identifying a review panel will enable efficient execution of the project.

Weakness: No preliminary data other than essential oil distillation time were provided in the proposal. It is not clear if farmers in the region are more interested in CHEMICAL Z crop-X or direct seeded crop-X grown for essential oils and if they are willing to make the transition. More market information for crop-X essential oil would make this proposal more convincing. Timeline is not clear. Why is this a 5-year experiment? Experiments replicated over 3 years rather than 4 years could be considered.

PI Qualifications and resources:

The team consist of highly qualified personnel from the disciplines of plant science, economics, entomologist, agronomist and extension activities as evidenced through vitae.

Strength: The Institution is well positioned to handle this research project. Recent establishment of a Global Crop-X Innovation Center and a strong extension network will help leverage the efforts. Facilities and instrumentation identified by each PI seems adequate to conduct the experiments.

Weakness: Cost effectiveness is not very impressive. The budget for support personnel is too conservative and achieving all the tasks in 4 sites and coordination seem overly ambitious.

Narrative Style Example 3

Sucking insect pests (aphids, whiteflies) and viruses they transmit cause heavy losses in X production in the X U.S., a center of X crop production. Controlling these insects and diseases is difficult enough with conventional approaches and management using certifiable-organic approaches is even less reliable and, possibly, economically feasible.

Individual cultural and some chemical control options have been most promising so far.

Resistant varieties, intercropping/field arrangement, mulches, covers, and targeted chemical and biological applications (PGPR) have shown promise.

Research support for each as a tactic varies widely. Regardless, no tactic is seen as a viable stand-alone option for efficacy, procedural (e.g., pollinator disruption) or economic reasons (frequent applications). Combining individual tactics is proposed as the next step.

The team will experiment with individual tactics in Phase 1 and complete a multi-site study involving multiple ones in the last, briefer phase.

Strengths:

The project addresses a very difficult, complex set of related issues around which there has been much activity involving entomologists, pathologists, horticulturalists and, more recently, teams containing them.

The team is highly qualified and well supported by organizations. The proposal is organized and clear. Issues, challenges, and plans are presented in a straightforward way (the logic model is an asset). All personnel have meaningful roles. The attempt to identify and help growers implement combined tactics to address these widespread and recalcitrant issues is appropriate.

Individual experiments are well-designed.

The team's success is likely to create a platform for additional projects and improvements in grower practice and success.

Weaknesses:

Overall, the proposal argues that 'stacking' or combining tactics will be more effective than using individual ones, but this hypothesis will be tested over only a single field season. Although the test will be multi-site, there are questions as to whether it will be efficient and result in clear, defensible outcomes and content for stakeholder-based recommendations.

The team states that none of the tactics they wish to test are viable stand-alone management strategies. Instead, they look to identify a ‘super’ IPM package, comprised of individual components shown to be effective in separate, early-phase experiments. Other approaches may be preferable. For example, preliminary research completed in organic settings in the Southeast may have identified the most worthwhile individual tactics to test in combination. The proposal lacks evidence of these types of studies by the project team. Greater justification for experiments, in particular, is encouraged. Overall, page X raises several questions, including why are Y and Z included in this section? Selecting and justifying best options based on the literature may have been useful in the same way. Either approach would allow the team to accelerate its tests of combined tactics, including on commercial farms.

Accelerated tests of combined tactics may have also provided opportunities to gain additional stakeholder involvement and support. Inviting growers to comment on packages during planning may also help identify ones most worthy of testing.

The Objective XX study (multi-site experiment) appears to lack statistical power. An a la carte approach was used in designing it and the hierarchy of power in the experiment can be questioned. The hierarchy may reflect experimental convenience (very important) more than the likely best treatment or combination most relevant to growers. Would experiments with fewer factors (i.e., featuring various combinations of tactics but not all tactics) be more efficient?

The team is excellent, and the outreach plan is mostly, too. However, the authors may wish to supplement proven methods and formats they describe with others that recognize specific ways organic growers are reported to use in obtaining and utilizing information. Peer to peer systems, field days, and webinars may be useful.

Including a greater amount of detail in the timeline will make it more effective. Similarly, given the number and diversity of personnel involved, summarizing the project management approach (and team, if applicable) would be helpful.

Page X describes four germplasm (variety evaluation and development) goals. The proposal is clear on how the project will reach three of the goals, but it does not describe how the project will foster the development of breeding material.

Narrative Style Example 4

Overall:

Based on their preliminary evidence, the authors report that cover crop species can have legacy effects on the resistance of subsequent X crops to the X Pest, and that the legacy effects are mediated by soil fertility and/or mycorrhizal colonization.

The project team looks to uncover mechanisms controlling the cascade of interactions that link cover crops, soil fertility, and X pest management.

Using a logical set of individually focused controlled environment experiments, the project team proposes to address three leading, mostly insect biology-related questions embedded in the ‘legacy’ hypothesis.

Strengths:

The Project Description is very well-written and organized. Project goals and individual experimental objectives are clearly articulated and justified.

Methods are also well explained. Figures reinforce text.

Individual focused experiments (6) are meritorious on their own and support larger aims. Limitations of one experiment are addressed in the design of another. This approach strengthens the proposal and increases the likelihood of overall project success.

Relevant preliminary data and experience are in hand and employed effectively in justifying the proposed workplan. Examples of new information that the proposed work may provide are clearly stated and weighty. Moreover, the Project Description and a support letter describe an intriguing and potentially productive unfunded collaboration -- involving this and another project team based at the same institution -- setup, in part, to advance work included in the proposal.

Inasmuch as research and extension focused on X crops and cropping has exploded recently, the proposed workplan: a) represents a potentially understudied but very important dimension of cover crop use and impact on agroecosystems, and b) will have a large audience for information it generates. Overall, the team looks to better resolve mechanisms responsible for “YYY” Although highly focused on generating research outcomes through studies completed in mostly controlled environments, the project team has a clear and credible plan (involving partners in Extension and industry) to increase access to information it will create among non- scientists and scientists.

Limitations:

Can plants exposed to herbivores in X experiments affect control plants through chemo-signaling, thus compromising the integrity of the control group?

As stated in the Limitations section, the workplan lacks a field component. Justification for a nearly X-only approach is credible but so also are assertions that a (larger) field component is not only advisable but also possible. Including additional samples collected and/or on carefully chosen farms with an active history (or not) of cover crop use more meaningfully in the workplan would provide additional insights on or verification of the mechanisms the team chose to examine and look to help growers to take advantage of. Certainly, an approach involving on-station or on-farm investigation would be complicated and noisier. However, it could also lead to actionable steps for work completed in controlled environments.

Narrative Style Example 5

Potential for advancing quality education: Main goal is to promote advances in food, agriculture, natural resources, and human sciences education through the development of a unique, multidisciplinary, service-learning course intended for students who will become professional designers as well as those who will become childcare providers. The anticipated impact of this proposal is the creation of at least fifteen masterplans for childcare centers through the XXX regions. The greatest innovation for this proposal is the development of a multidisciplinary course that put student designers together with early childhood education/child development student. Creation of a new, multidisciplinary single course, impact and capacity to involve students/staff?

Proposed approach and cooperative linkage: XX undergraduate, XX MS, X PhD directly involved. Childcare center improvements planned or underway; State-wide awareness of initiative and associated benefits; Childcare open houses at early childcare centers; X student conference presentations; X peer reviewed publications; X peer reviewed conference abstract presentations. Evaluation Plans: internal and external (XXX) reviewers will evaluate the program. Collaborating the USDA agency: informal with extension service.

Institutional Capability- Institutional Commitment and Capability, Institutional Resources, Logic model, Academic Enhancement, and Continuation Plans are all in place. Strong support from state as it helps with another ongoing project.

Key Personnel: XXX (Landscape Architecture); XXX (Human Development and Family Studies) XXX (Design) Highly qualified and experienced team.

Budget and cost effectiveness: Senior/ Key Person \$XXX, Other Personnel \$XXX,XXX; Travel \$XXX,XXX; other direct \$XX,XXX. Total asking \$XXX.

Narrative Style Example 6

1. Potential for Advancing Quality of Education; Significance of the Problem

This project aims to develop XXX XXXX- related technical skills along with personal and professional skills through “intercollegiate collaboration and competition.” The need for design-based experiential learning is well described and supported by the literature, but the claim that the students will truly be supported to approach the problem from a transdisciplinary perspective is problematic; developing soft skills through a technical challenged is not the same thing if they are constrained within a paradigm that assumes a technical solution is the only option. The description of the project as multidisciplinary is more appropriate here, but it is vague how they will engage in “XXXX”- this is a complex change.

The need to support senior design projects in XXXXXXX XXXXX, particularly for small programs, is a clearly defined problem that aligns with Educational Need Areas and makes this project and the resources, developed potentially usefully to other institutions. The justification, however, for the focus on the challenges on XXXX XXXXX could be stronger.

2. Proposed Approach and Cooperative Linkages

The approach is overall sound and the plan of operation for the seminar series and competitions are clear. Learning modules will be developed to support content knowledge and technical skills across institutions, but the methods the team will use to ensure that these employ sound instructional design, the platform/format in which they will be developed and shared, and the proposed learning objectives for the modules are not described. Additionally, “XXX teaching modules related to non-technical skills” will be produced. This is not described in the plan of operation- producing modules that can be disseminated is not the same thing as leading a seminar discussion. Recruitment plans for ensuring that the target population of students are involved in the project are not included. How will students apply to be on the teams? Who will receive a stipend? What are the criteria for participation?

3. Institutional Capability and Capacity Building

The Institutions have the facilities and capacity to carry out the XXXX XXXXX components of the project and leaders have demonstrated commitment to the project. Resources in technology and distance learning are described in the facilities document and mentioned in the letter of support, but specific

commitment of personnel to aide in module development is lacking. A collective impact approach will ensure coordination and collaboration during the project and set the groundwork for future efforts; specific plans for continuation beyond the grant support period are not provided.

4. Key Personnel

The project team has extensive expertise in various engineering fields and clear roles in the proposed project. The task of developing and publishing the learning modules (technical and professional) is not represented in the management structure; XXX has experience with “online teaching and learning module development” that will be relevant to the project, however oversight for ensuring sound pedagogy/design in the learning modules developed by the Co-PDs is not discussed. External evaluator is identified and well qualified to evaluate the modules, however additional expertise in faculty coaching for instructional design is needed. Funds for professional skills development seminar help and/or a letter of commitment from the XXXX are missing. Graduate students appear to be a key component of the project in terms of mentoring the teams; how will the teams ensure that they have the requisite skills to carry out this role effectively?

5. Budget and Cost Effectiveness

Stipends for undergraduate students participating in the competitions, faculty time, materials, and travel costs are relevant to the project and reasonable. A number of graduate students are supported by the project to mentor the design teams, the time commitment to the project for these students is not sufficiently described to evaluate if this is an effective use of funds.

Bullet Style Individual Review Examples

Bullet Style Example 1

PROPOSAL OBJECTIVES AND APPROACH

This proposal aims to investigate potential interactive effects of long term soil management (organic vs. conventional) on soil microbiome composition, crop plant systemic resistance, and insect pest suppression using x and y pests as a model system, with the goal of understanding fundamental drivers of "insect-suppressive" soils and the potential for such properties to be transferred to other soils via microbial inoculation. Specific objectives include screening for insect-suppressive soils in paired organic and conventional x fields in location x (Obj. 1), evaluating transfer potential of insect-suppressive microbiomes in (Obj. 2), exploring potential microbiome drivers of insect-suppressiveness using advanced metagenomic and chemical analyses to(Obj. 3), conducting a meta-analysis to explore soil management effects on microbiome shifts across diverse agroecosystems and ... and (Obj 4). Develop a practical recommendation.

STRENGTHS:

- The project pursues an interesting fundamental research question that aligns with this program area priorities. While the potential magnitude of pest reduction from microbiome-induced resistance (and potential microbiome "transplanting") is unlikely to ever eliminate the need for other methods of pest control, this research has the potential to increase foundational knowledge of soil-plant-microbial feedbacks towards increased pest suppression with clear management implications-- including strategies for the organic pest management toolbox and future advances and possible product development.
- Well qualified team with experience necessary to succeed in the proposed research, demonstrated in part through extensive prior published work.

- Extensive preliminary data that sufficiently supports promise and feasibility of additional research.
- Logical and sound methodology proposed to address research questions, that replicates (with expanded geographic scope) and builds sufficiently on previous work. Experiments set up such that either positive or negative results yield valuable information for moving forward. Obj. 2 common garden experiment (evaluating inoculant performance across soil types) will make generally useful contributions to beneficial microbe inoculation literature.
- Obj. 3 expansion of previous work now using shotgun metagenomics and high-resolution mass spec is a good in-depth addition with potential to yield novel fundamental insights. Similarly, meta-analysis would appear to have sufficient material available and stands to make a useful contribution.
- Obj. 4. Clear path proposed for developing clear recommendations for future studies and for practical application is cropping systems.
- PDs do a good job acknowledging potential risks and pitfalls with methodology and proposing alternative approaches.
- The proposal is overall clear and well-organized.

WEAKNESSES:

- Some risk associated with being able to identify sufficient paired sites with required characteristics in the proposed region for Obj. 1, although PDs provide assurance and letters of collaboration from breeder and Extension specialist. Field studies may not always allow location of sites with similar characteristics in different sites.
- There seem to be some oversimplification of "organic agriculture" and "soil fertility management" as single practices within the proposal. The proposal would benefit from making clearer an attempt to explore more specific management drivers of insect-suppressiveness at each location, perhaps through farmer interviews on management practices. Likely to be conducted by PDs based on context of proposal, but would be nice to see this acknowledged more clearly in the proposal.
- Although not critical for a Research proposal, the proposal could have benefitted from some more discussion of planned outreach activities and inclusion of specific funding for Extension personnel for their role in site selection, etc.
- ...

Bullet Style Example 2

Potential for Advancing Quality of Education/Significance of the Problem

- The project will likely have a positive impact on the number, diversity, and quality of the Food, Agriculture, Nutrition and Health workforce, as it clearly describes the reasons why local prospective students do not pursue careers in agriculture and proposes a solution to address this topic
- Project goals are aligned with institutional long-range goals of research, creation and scholarship
- It is also very relevant how this project can potentially reduce dependence of XXX on food exports, through the impulse of local efficient food production.

- However, innovation might be an area that deserves a deeper look, as similar projects have been developed before (although XXX might have greatly affected local agricultural properties for training and education).

Proposed Approach and Cooperative Linkages

- The methodology of the project explains in the different components that would support the goal of this initiative, from enhancement of the curricula, to elements related to community involvement. The cross-inclusion of science and humanities topics on the new courses to be developed is particularly interesting/ remarkable.
- Outreach to K-12 schools needs further explanation to understand how they will manage to achieve their goals (e.g. is it possible to measure impact on the XXX publics school students that will be impacted by the project?)

Institutional Capability and Capacity Buildings

- The XXX has several programs that can support the requirements of this plan and collaborators are engaged

Key Personnel

- Background of key persons is well balanced, including scientific and humanistic approach. However, it seems there's no formal education or professional experience on agriculture/ agronomic sciences.

Budget and Cost Effectiveness

- Although budget seems to be within XXX limitation, apparently most of the funds would be utilized for faculty support, including new hires which sustainability in the future is not particularly clear. Therefore, it might be the case that student and curriculum support is underfunded

Bullet Style Example 3

Potential for Advancing the Quality of Education; Significance of the Problem

- It is likely that is project will have some impact on the advancement of the Food, Agriculture, Nutrition and Health sciences, as it will focus on a relevant agriculture related field of study XXX through different educational categories.
- However, innovation and advancement of educational equity is not clear
- Furthermore, while the goal of increasing diversity and inclusion of the student body in the proposal is clear, it doesn't feel as a core portion of the project (almost an afterthought)

Proposed Approach

- The proposal adequately presents a general overview of the project approach, explaining in general terms the plan of operation, timetables, and expected results
- However, it's notorious the lack of detail on the actual execution of these plans
- The proposals does show some interest with other USDA agencies

Institutional Capability and Capacity Building

- All three partner universities are committed to this project and they have adequate resources to support it, from laboratories to specialized facilities
- The proposal does mention academic enhancement and continuation plans as relevant points, but it fails to provide details about deployment of guidelines

Key Personnel

- All key persons who will develop and carryout the project have very strong technical backgrounds with outstanding achievements in XXX and related sciences
- It would be good to see more formal qualifications in community outreach (e.g. Academic degrees in humanities) in order to better support the liaison with XXX.

Budget and Cost Effectiveness

- The total budget adequately supports many portions of the project, however it seems that the section related to subawards is missing additional information about deployment, execution and impact