

# Project Plan Peer Review of ARS Research



This handbook provides guidance for the  
administration of the Project Plan Peer  
Review process lead by the  
Office of Scientific Quality Review  
(OSQR)  
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## 1. RESEARCH PROJECT PLANS AS PART OF ARS SCIENTIFIC PROGRAMS

The Agricultural Research Service (ARS) Project Plan Peer Review (PPPR) process is a critical part of the overall five-year ARS research program cycle (Figure 1). Review was mandated by the Agricultural Research, Extension, and Education Reform Act of 1998 (<https://nareeeab.ree.usda.gov/about-nareeeab/legislation/public-law-105-185>), which requires successful completion of peer review as a prerequisite to execute a research plan. This handbook is intended to provide guidance as ARS researchers prepare project plans. As such, researchers are strongly urged to read it this guidance in its entirety prior to plan development.

Figure 1. ARS Research Cycle



Ultimate responsibility for the quality of a project plan rests with not only the project team, but the Area Office along with the Office of National Programs (ONP). The Office of Scientific Quality Review (OSQR) provides information on project plan development for the researcher on its website (<http://www.ars.usda.gov/osqr>), at ARS researcher briefings, and through this handbook. A brief overview of the research cycle is presented above in **Figure 1**. The ARS **Research Agenda** is set via workshops and meetings with stakeholders and external researchers to determine specific research items that should be included in the **Action Plan**. From there **Research Objectives** are finalized by ONP and the National Program Leaders (NPLs) along with the Administration, and based on those objectives,

ARS scientists develop their 5-year Research **Project Plans**. Once the plans are reviewed and certified (as overseen by the OSQR), ARS researchers carry out the **Research** they have proposed within a 5-year execution phase and are required to provide annual **Progress Reports** to keep Area leadership and the ONP aware of how the stakeholder questions and priorities are being addressed and to determine if adjustments need to be made. ONP then uses these reports to perform a **Retrospective Assessment** of the program once it is close to completing its five-year cycle, to determine if and how those questions set forth in the original **Action Plan** have or have not been addressed, and what should be the research focus of the next five years. The **Retrospective Assessment** then sets the stage for the conversations that determine the **Research Agenda** for the next five years and the cycle begins again. The OSQR project plan peer review ensures the proposed research is of high quality, is feasible and has scientific merit.

### **1.1 Office of Scientific Quality Review**

OSQR is responsible for implementing and tracking the PPPR process under the Associate Administrator for Research Operations and Management (AA-ROM). A Scientific Quality Review Officer (SQRO) is appointed from the ranks of senior ARS scientists to serve a 2-year term as the technical advisor to the peer review process and to certify completed project plans which have received passing review scores.

### **1.2 Peer Review and ARS Management**

Responsibilities for research development and operations management are shared between the ONP and the Area Offices:

ONP addresses the direction of national programs. ARS research is organized into National Programs. These programs serve to bring coordination, communication, and empowerment to approximately 690 [research projects](#) carried out by ARS. The 15 National Programs focus on the relevance, impact, and quality of ARS research. Further, NPLs are responsible for developing the National Program Action Plans, determining national research priorities, and allocating resources. NPLs validate prepared plans to assure that the objectives are as assigned, and the approaches are suitable for achieving the assigned objectives. These objectives are planned in consultation with many stakeholders inside and outside ARS to ensure that the programs are relevant to priority needs. Every research location is directly managed by one of our five Area Offices located around the country.

Area Offices have oversight responsibility for quality, implementation, and performance regarding research project plans. Each Area has established procedures for internal review of plans prior to their submission to OSQR. This level of peer review is expected to be rigorous and candid.

### **1.3 Roles and Responsibilities**

#### **OSQR Director**

- Manages day to day operations and supervises OSQR Staff
- Enforces agency policy and requirements
- Provides Panel oversight, attends and guides review discussions
- Performs analysis of review results
- Collaborates with SQRO on issues of communication, training, policy, and procedure
- Evaluates review responses making recommendations to the SQRO

## **SQRO**

- Provides technical oversight of peer review and panel deliberations
- Enforces agency policy and requirements
- Provides concurrence on final chair and panelist selection
- Attends and guides review discussions
- Evaluates panel results and certifies all project plans

## **OSQR Program Analysts**

- Oversee panel review process
- Executes policies and procedures developed by Director and SQRO
- Recommends enhancements to improve peer practices and procedures
- Develop and communicate information to AOs, ONP, and external reviewers

## **ONP**

- Develops PDRAM (see Section 2.2) in consultation with Area Office, Research Leader (RL), and Lead Scientist (LS)
- Finalizes all plan objectives
- Reviews pre-plan for adherence to assigned objectives
- Provides recommendations to OSQR for chairs and panelists

## **Area Staff and Scientists**

- LS works with RL to prepare project plan; Area leadership review, comment and concur.
- LS works with NPLs to ensure project sub-objectives and approaches are consistent with PDRAM goals.
- LS updates and revises plans based on panel recommendations.
- Area Program Analyst control proper execution of peer review policies and practices and ensures timely submission of project plan.

## 2. ADMINISTRATION OF PEER REVIEW

The ARS PPPR process can be visualized in five stages:

- 1) Identifying projects to be reviewed
- 2) Project Plan development (see Appendix 1 for template)
- 3) Internal Review (see Appendix 2 for guidance)
- 4) External review
- 5) Response to peer review

The SQRO certifies project plans after they have successfully achieved a passing score and satisfactorily revised plans addressing all reviewer comments. Administrative guidance for this process reads below.

### 2.1 ARS Peer Review Processes

Peer review is common throughout science and most often viewed through the lens of competitive funding review. ARS PPPR is a non-competitive, quality development and evaluation process that is more analogous to manuscript review by an outside expert panel and does not involve ranking or funding decisions. Research plans are prospective and developed in response to previously identified problems, concerns, or issues in agriculture. The reviews are intended to provide recommendations and comments on individual plans so that ARS science programming overall is improved and strengthened in terms of its quality and rigor. The essential difference between ARS review and others is its purpose and intent.

### 2.2 Projects for Review

In consultation with lead scientists and line management, ONP outlines and finalizes research objectives for research plans. Projects for review are identified by ONP with concurrence from Area Directors (ADs). The Program Direction and Resource Allocation Memo (PDRAM) outlines specific project objectives, and ONP develops a research cycle schedule in consultation with the OSQR, this includes the development and review of the project plan. A research team may be granted a postponement of the review of its plan for various reasons (see Section 2.3.1.) this is done along with the concurrence of the OSQR Director and final approval of the AA-ROM.

Timetable of the overall review process once PDRAMs are issued to the Areas (*dates are approximate*):

|  |
|--|
| <b>PDRAMs Due to Area</b>  |
| <b>Project Plan Due to Area</b> ( <i>12 weeks to write Project Plan</i> )                                  |
| <b>Project Plan Due to ONP from Area</b> ( <i>6 weeks for Area to review</i> )                             |
| <b>Project Plan Validated by ONP and Returned to AD</b> ( <i>4 weeks for ONP to validate</i> )             |
| <b>Project Plans due to OSQR from AD, cc ONP</b> ( <i>4 weeks for location revisions and Area review</i> ) |
| <b>Review Period</b> ( <i>14 weeks</i> )   |
| <b>Project Implementation Date</b> ( <i>8 weeks</i> )  |

## 2.3 Exemptions and Postponements

Exemptions from the peer review process are handled on a case-by-case basis through collaboration of the Area and ONP leadership. Decisions are subject to review by the AA-ROM. Some short-term (less than five years) or service-based projects may be exempted from review with ONP approval.

Postponements will require ad hoc review at a later date (see Section 4.4). A Template for Requesting Postponement can be found on Axon: <https://axon.ars.usda.gov/OSQR/Pages/Templates.aspx>

The current schedule for review of National Programs can also be found on Axon:

<https://axon.ars.usda.gov/OSQR/Pages/PPPR-Schedules.aspx>

### 2.3.1 Rationales for requesting postponement from peer review:

- 1) Vacancies or long-term absences in key scientific research positions; and/or
- 2) Significant reorganization, initiation, reduction, or redirection of a project.

## 2.4 Conflict of Interest (COI) List

It is essential that OSQR determines if any research scientist listed on a project has a conflict of interest with a potential reviewer. Typically, lists are due two weeks after the receipt of the PDRAM. See the Schedule of Peer Reviews for your National Program due dates on Axon:

<https://axon.ars.usda.gov/OSQR/Pages/PPPR-Schedules.aspx>

The following are examples of Conflicts of Interest (COIs):

For each Category 1 or 4 Scientist, cooperating investigators not employed by ARS who will be considered as an investigator on the proposed project plan identify the following over the previous 36 months:

- Individuals with whom he or she has co-authored papers,
- Any cooperators with whom the scientist(s) has conducted or planned research, grant proposals, or conference meeting content (platforms, workshops, presentations),
- Any supervised/direct report(s) or previous supervisors or direct reports,
- Individuals who have served as Advisors or have been advised by (student/postdoctoral relationship),
- Any institutional or individual consulting affiliation,
- Any financial ties/gain from the research reviewed.

### Collaborators

Collaborators are people with whom you **do** research. They are not:

- Colleagues with whom you serve on panels or committees.
- People with whom you discuss the potential for joint work or with whom you planned research unless it leads to a joint proposal.
- Someone who edits a chapter in a book that you author, but they are not on that chapter.

- A collaborator of your collaborator. Meaning if you are part of someone else's project and they have another individual as a collaborator, that other individual is not your collaborator.
- Someone with whom you shared information. For example, if you asked for samples or information (sequences, germplasm, isolates) or they request them of you, or if you perform a service of identifying something for a researcher but have no joint research.

### **Competitor**

Competitors are people who may have similar research interests or funding sources.

- Colleagues with whom you believe might not be impartial or have reason in which they are unable to provide a subjective review – you are urged to discuss this with OSQR and list them as a competitor.

OSQR uses several resources in assessing potential conflicts of interest. If an individual does not have a conflict or is not a recent (within four years) co-author, they **are** eligible to be a reviewer.

Panelists (chairs and reviewers) are asked to identify whether they have had any of the relationships with the Principal Investigator (PI) or listed personnel in the peer review documentation and must attest in writing to this.

A template of the COI List is available on Axon:

<https://Axon.ars.usda.gov/OSQR/PAGES/Templates.aspx>

*COI lists are an important part of the review process. Take the time to make them accurate and up to date. While OSQR does use them, there are other resources also relied upon to confirm conflicts or to find conflicts not otherwise noted. Where a stated conflict is found not to exist, the person may review your plan.*

## 3. Project Plan Development

### 3.1 Project Plans

An initially developed project plan, provided by the Area offices to the OSQR is termed a “Pre-Plan” and is further defined as a stand-alone document that enables external reviewers to evaluate the following aspects of the proposed research:

- **Adequacy of Approach and Procedures:** Are the hypotheses and/or plan of work well conceived? Are the experiments, analytical methods, and approaches/procedures appropriate and sufficient to accomplish the objectives? How, specifically, could the approach or research procedures be improved?
- **Probability of Successfully Accomplishing the Project’s Objectives:** What is the probability of success considering the LS or project team’s training, research experience, preliminary data, if available, and past accomplishments? Are the objectives both feasible and realistic within the stated timeframe and with the resources proposed? Do the investigators have an adequate knowledge of the literature as it relates to the proposed research?
- **Merit and Significance:** Will the successful completion of the project enhance knowledge of a scientifically important problem? Will the project lead to the development of new knowledge and technology? Are you aware of any other data/studies relevant to this research effort? If applied research, comment on the value of the research to its customers/stakeholders.

The plan should be written to support the Objectives that are assigned in the PDRAM from ONP and further relate back to the NP Action Plan. The plan should detail experimental approaches, procedures, contingencies, and collaborations necessary for accomplishing the proposed research. Clear, concise, and organized communication demonstrates to reviewers the team’s ability to achieve their objectives in the timeframe allotted.

### 3.2 Development of Research Objectives

The research planning cycle begins with one or more NPLs who are responsible for assessing and setting overall goals and directions written in the Action Plan, for each of the current National Programs. In consultation with stakeholders, researchers, and the scientific community at large, the NPL develops and assigns specific objectives for research, which are ultimately assigned to a research team along with information about the potential level of support for that research. While the research team may have had input in the development of these objectives, once assigned, the researchers are required to address them as written and are to adhere to the assigned objectives explicitly. In the event objectives are broadly described, researchers typically develop subobjectives within their plans to demonstrate their planned research path. Reviewers are oriented to consider the objectives as assigned and unalterable by the research team and are thereby instructed to focus their examination on the quality of the proposed plan to address them and provide any salient concerns regarding the objectives as part of their Panel Recommendations Form.

### **3.2.1 Modifications to Objectives**

Modifications to objectives or approaches in a project plan may necessitate a new (ad hoc) review of the plan.

Modifications are significant changes, inclusion of new material, or any alteration to the current project plan goals or objectives that would introduce need for expert re-evaluation not offered during the original peer review. These changes also constitute concurrence and/or approval by the ONP.

### **3.3 Data Management Plan**

Additionally, pre-plans should include a robust and informative Data Management Plan (DMP), which describes how data and metadata used during the research project will be managed and shared both during and after the research period.

- Major components of a DMP:
  1. Expected data types
  2. Data formats and standards
  3. Data storage and preservation of access
  4. Data sharing and public access
  5. Roles and responsibilities
  6. Monitoring and reporting
- The National Agricultural Library offers DMP consultation
- Links for Data Management Plan are listed below:
  - NAL data management plan guidance - <https://www.nal.usda.gov/main/data/data-management-plan-guidance>
  - <https://dmptool.org/>
  - The Ag Data Commons team & DMP draft review - [agref@usda.gov](mailto:agref@usda.gov)

### **3.4 What is Significant Change?**

A new objective is likely to require ad hoc review, even if it remains within the scope of the already-reviewed plan. Similarly, adding a new sub-objective might necessitate a review. Ad hoc review is required if the addition changes the focus, technologies, methods, or other aspects such that it is beyond the bounds of the original review.

#### **3.4.1 Review Due to Significant Change in Project Plan**

At times, a plan must undergo special review because change(s) are deemed to be outside the scope of the originally written plan. Most alterations or additions to plans which are sufficiently close to the original plan do not necessarily need additional review. The determination that the change is significant and requires review is made by the Area and relevant NPL, with appropriate concurrences. This type of review is ad hoc and based on written evaluations from at least two reviewers. Results and a synopsis of the reviews are compiled by OSQR.

The LS or RL may initiate a request for postponement of a project plan with the support of the Area Office (ONP notification should be made as a courtesy). Requests should come through the OSQR office for submittal to the AA-ROM for approval and are granted under exceptional circumstances. The OSQR office will advise the Area of the decision. Initiation of the postponement request typically precedes receipt of the PDRAM.

## 4. Project Plan Peer Review Process

The PPPR is intended to improve the quality of ARS research through a written dialog between Agency researchers and external review panel experts.

The ARS review process assesses whether proposed research project plans, as presented in written form, will achieve their stated scientific objectives and subobjectives. Recommendations provided by external Agency expert reviewers give scientific professional opinions and feedback as to what addendums, alterations, or issues must be addressed to attain a high level of quality and success. However, external reviewers neither receive nor evaluate ARS funding information. The primary focus of their review is on the **quality** of the research plan and how it can be improved for maximum success. Prior to plan submission, Pre-Plans should be reviewed internally within ARS, per guidance provided in Appendix 2.

ARS PPPR panels virtually review three to five project plans. Each panel member examines every plan assigned to the panel (barring any COI) and is required to provide detailed written comments for at least two of those plans (one as primary reviewer, one as secondary). Panelists' written comments and subsequent deliberations are combined into a consolidated Panel Recommendations Form and this is provided after review to the research teams (Area offices and ONP) along with a composite score, for their responses. These responses are reviewed by the SQRO, who determines whether the panel's questions and comments have been fully addressed and appropriate changes have been made. If so, the plan will be certified as having successfully completed review, and notification is sent to the ONP for funds to be released. Plans that fail may be due to researchers' inability to overcome significant difficulties and/or unyielding objectives, which are not coherently presented nor reasonably correlated. The SQRO is the final approver and approval occurs once he/she is satisfied that the responses are complete and appropriate.

All PPPR reviewers are knowledgeable scientists within the discipline, external to ARS, who provide written comments on research project plans. The comments from everyone are compiled into one document (along with expandable text boxes for ARS scientists' responses) prior to being received by the research team. The compiled set of comments is sent electronically to the Area Office and ONP for dissemination to the LS and team for response and revision (this procedure is repeated for panel-reviewed, re-reviewed, and ad hoc plans).

### 4.1 Peer Review Outcomes

The initial review determines the degree of revision necessary. A Class Score Sheet from the review panel provides a rating of the quality of the plan (Appendix 3). Each panelist provides a confidential overall score of each reviewed project plan. The overall score for a project plan is the consensus of each individual reviewers' score.

A Panel Recommendations Form is also provided which includes comments, questions, and recommendations from the panel (Appendix 4). If the score is Moderate, Minor, or No Revision the plan has passed review; however, responses to the Panel Recommendations Form are still required. Once the SQRO has reviewed and approved the revisions within the plan, it is certified. The responses to the

Panel Recommendations Form are required regardless of the class score received (pass or fail), so that the panel, who is eligible to receive a copy, is aware of how and in what manner their comments were addressed. Expert panel consensus scores are **not** subject to revision and are **not** influenced by the OSQR, the SQRO, or any ARS leadership.

| <b>Class Score Sheet Rating</b> | <b>Definition</b>   |
|---------------------------------|---|
| No Revision Needed              | An excellent plan: no revision is required, but minor changes to the plan may be suggested.   |
| Minor Revision Required         | The project plan is feasible as written and requires only minor clarification or revision to increase quality to a higher level.  |
| Moderate Revision Required      | The project plan is basically feasible but requires change or revision to the work on one or more objectives, perhaps involving alteration of the experimental approaches, to increase quality to a higher level; the project plan may need some rewriting for greater clarity. |
| Major Revision Required         | There are significant flaws in the experimental design and/or approach, or a lack of clarity which hampers understanding. Significant revision is needed.   |
| Not Feasible                    | The project plan, as presented, has major scientific or technical flaws. Deficiencies exist in experimental design, methods, presentation, or expertise which make it unlikely to succeed.  |

Plans that score Major Revision or Not Feasible (*failing*):

- Must undergo re-review including the Re-Review Signature page (included in Appendix 5).
- Original panel will reconvene, review, and score the updated plan.
- Re-review meetings typically are held 10 to 12 weeks after the due date for revised plan.
- Plans receiving a Major Revision or Not Feasible score after re-review are considered failed plans and will not proceed as written.

For plans that score Moderate, Minor or No Revision (*passing*):

- Clarification of scientific questions are typically required.
- Reviewers ask questions and offer recommendations/comments on specific issues and the Agency research team must provide written detailed responses.
- Must include the Post Plan Signature page (included in Appendix 5)
- SQRO reviews and assesses the team responses and modifications to the project plan itself.
- Should the SQRO believe additional work is beneficial, the response document is returned for further revisions.
- The SQRO has authority to decline to certify a plan which he/she feels is not adequately responsive<sup>1</sup>.

For plans that score Not Feasible, a decision to proceed with revision and re-review by the panel must be based on mutual agreement of the Area Office, RL, and ONP. If a response and revised plan are not

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<sup>1</sup> This authority of the SQRO is essential to the validity and strength of the review process.

received as scheduled for re-review or it is decided that further revision of the plan will not occur, the plan will be recorded as having failed review. Re-review of plans receiving low scores cannot be postponed and typically occur within 10 weeks of the original review date.

#### **4.1.1 Overall Failed Plan**

For plans that score Major Revision and/or Not Feasible in both initial and re-review, the OSQR refers this project plan back to the respective ONP Deputy Administrator, NPL, and Area Office for management action.

The options for action include:

1. Termination of the project and reallocation of all resources.
2. Development of new project plan with altered objectives and/or with a reorganized team.

#### **4.2 Response to the Peer Review**

Following review, OSQR sends all results to the Area Director, Associate Area Director(s), Area Program Analyst(s), and the respective National Program staff. In the case of failing results, Office of the Administrator Program Analysts are courtesy copied. The combined Panel Recommendations Form with response boxes and the Class Score Sheet accompany the qualitative and quantitative results document. Responses are required wherever an “ARS Response” text box appears.

##### **4.2.1 Response to the Peer Review**

The Panel Recommendations Form will contain expandable text boxes labeled “ARS Response” for answering the queries and recommendations of the panel. (Appendix 4). While the Panel Recommendations Form will go to associated ONP staff, ONP is to be consulted and should concur via a signature page (Appendix 5), to ensure accurate response on those comments that explicitly involve recommendations or questions about assigned project plan objectives.

*No page limitations are set for plan revisions. When a plan requires revision, content and clarity are preferred over document length.* All revisions (text or graphic) should focus on the comments/recommendations.

Responses must:

- Clearly indicate which components of the recommendation(s) were adopted, and if they were not, include an appropriate justification as to why the recommendation was not accepted.
- Identify any alternate modifications, if applicable.
- Include commentary or answer(s) to the stated issue(s) and make a notation (i.e., page number) where any modifications based on this issue appear in the text.
- Plan revisions should be in **bold**, **highlighted**, or **colored** typeface in the body of the plan.

While all recommendations should be carefully considered, they are not required to be incorporated. Any agreements or disagreements to panel review comments should be addressed in both a professional and respectful manner.

Once the project plan has been revised by the team, the LS is responsible for obtaining concurrence from the RL, and Center or Laboratory Director, and the respective NPLs. The revised project plan and the Panel Recommendations Form are forwarded to the Area. Once the AD and the relevant NPL have approved and signed the plan, it is forwarded to OSQR with the completed post plan signature page (Appendix 5).

### **4.3 Certification**

The SQRO, in conjunction with the OSQR and on behalf of ARS, certifies that the project team's response to the peer review process is complete and that revisions to the project plan are satisfactory. Subsequent instructions for initiating the execution phase of the project are contained in the certification memo to the researcher through the Area Office. The SQRO will return a plan for which the responses are considered inadequate or incomplete. There are no limits to the number of times a plan may be returned; however, inability to satisfactorily address identified problems may result in the officer terminating review, declining to certify the plan, and ultimately yielding a failed review.

### **4.4 Ad Hoc Reviews**

There are three situations that would necessitate an ad hoc review:

- New projects created by modifications which alter programmatic direction, Congressional mandates, redirection or new objectives, new initiatives or funding, and organizational and staffing modifications (a new research project plan, or one that has been significantly changed, may also require an ad hoc review, if the relevant panel review session is more than 24 months away).
- Panels that contain only two or fewer project plans with subject matter that does not relate to other panels in that national program.
- Additional expertise is sought for a scientific area not represented on a formed panel.

#### **4.4.1 When Ad Hoc Review is Not Necessary**

A review of modifications that are made to plans within two years of their next panel review is deferred until the full new plan is presented for its regular OSQR review. The two-year date for each plan is part of the OSQR Peer Review schedule available on Axon:

<https://axon.ars.usda.gov/OSQR/Pages/PPPR-Schedules.aspx>

## 5. PANEL COMPOSITION

### 5.1 Panel Chairs and Panelists

Peer reviewers are scientific, technical, or industrial experts possessing relevant knowledge, experience, and background of a given subject matter. Participants are external to ARS and may be international. They are typically free from COIs as they relate to the project plans they review. Occasionally, ARS scientists may serve as ad hoc reviewers or panelists. The SQRO concurs with the selection of the panel chair by the OSQR Director of the panel chair. Considerations are given to diversity in the way of notable expertise, geographic location, tenure in the field, gender, and ethnicity.

### 5.2 Panel Selection

The OSQR is responsible for selecting panel chairs, guiding panelist selection, and scheduling reviews. Review Panels are assigned project plans in groupings provided by the ONP based on subject matter similarity or likeness. Final decisions on panel grouping are the responsibility of the OSQR to allow for the most feasible review.

Nominations for chairs are gathered from many sources, including but not limited to the following:

- ARS scientists or administrators
- ONP Staff
- Deputy Administrators
- Area Directors
- SQRO
- OSQR database
- Third party science sources, agriculture, or science-based organizations (MANNRS, American Chemical Society, etc.)

The work of panel chairs and panelists is essential to a successful peer review. Thus, significant effort is taken to ensure that highly qualified individuals are invited to chair panels and to serve as panel reviewers.

### 5.3 Roles and Responsibilities

#### 5.3.1 Panel Chairs

Panel chairs select their panelists, assign review responsibilities, ensure review quality, and facilitate panel discussions. After review, the chair provides a statement summarizing the review.

Panel chairs receive a virtual orientation by the OSQR on the ARS project plan peer review process and their responsibilities. NPLs may also provide a virtual presentation relevant to their National Program Action Plan, introducing the chair to the scope and context of the projects being reviewed. The OSQR staff clarifies and addresses any questions/concerns.

### **5.3.2 Panelists**

Panelists assess the scientific and technical quality of research project plans. While their recommendations are not binding upon the Agency, their insights and suggestions are carefully considered, ensuring the quality and credibility of ARS' overall scientific program.

Panelists receive a virtual orientation by the OSQR on the ARS project plan peer review process and their responsibilities regarding the unique nature of their role as an expert reviewer. NPLs can provide a pre-recorded presentation relevant to their National Program Action Plan, introducing reviewers to the scope and context of the projects being reviewed.

Orientation presentations are on the OSQR Website:

<https://www.ars.usda.gov/office-of-scientific-quality-review-osqr/pppr-presentations/>

### **5.4 Confidentiality of Information**

ARS research project plans may include information about the underlying research and existing or anticipated research results that are considered proprietary or confidential. *Reviewers must sign a Confidentiality Agreement stating they will not copy, quote, discuss, or otherwise use material from the proposal outside the panel review process.* This protects potentially sensitive information included in ARS research project plans.

The Confidentiality Agreement can be found on the [OSQR Website](#).

### **5.5 Release of Information**

The panel chair and their affiliation are public information; the remainder of the review panel remains anonymous. Panel recommendations represent the combined views and consensus score of the participating panelists at the time of the meeting. The SQRO and OSQR Director corroborate that recommendations are clear, complete, and to the extent possible, are also reflective of the score. Following review, OSQR sends class score sheet and panel recommendations forms to the Area Director, Associate Area Director(s), Area Program Analyst(s), and the respective ONP staff.

## 6. PANEL REPORTS, DISTRIBUTION OF SCORES

Panel outcome Reports are completed by OSQR at the conclusion of each national program review. Reports include:

- Number of panels reviewed
- Number of re-reviews
- Number of projects in each panel
- Number of Panelists
- Chair names, affiliation, and education
- Scores by panel
- Scores by area
- Overall score per National Program
- Panelists faculty rank
- Panelist information including gender and geographic location, and average panel SCOPUS H-index
- Panel chair statements

These reports are available on Axon: <https://axon.ars.usda.gov/OSQR/Pages/Panel-Outcome-Reports.aspx>.

## 7. LIST OF ACRONYMS

|        |  |
|--------|--|
| AAD    | Associate or Assistant Area Director                       |
| AA-ROM | Associate Administrator-Research Operations and Management |
| AD     | Area Director  |
| COI    | Conflict of Interest                                       |
| DA     | Deputy Administrator                                       |
| DMP    | Data Management Plan                                       |
| LS     | Lead Scientist   |
| NPL    | National Program Leader                                    |
| ONP    | Office of National Programs                                |
| OSQR   | Office of Scientific Quality Review                        |
| PA     | Program Analyst  |
| PDRAM  | Program Direction and Resource Allocation Memo             |
| PPPR   | Project Plan Peer Review                                   |
| RL     | Research Leader  |
| SQRO   | Scientific Quality Review Officer                          |

## 8. GLOSSARY

**Class Score Sheet:** Document which refers to the degree of revision peer reviewers believe project plans require. These provide an overall assessment of the quality of project plans.

**Certification:** Written indication that a plan has satisfactorily completed peer review.

**National Program (NP):** The National Program in which an ARS Research Project has its greatest focus. Projects also may be related to other National Programs on a contributory basis.

**National Program Action Plan:** A document which addresses: 1) rationale and purpose for a National Program; 2) the National Program's background; 3) National Program components; 4) anticipated products and/or potential benefits over five years; and 5) research objectives by program component. The document incorporates issues raised by Congress, stakeholders, and researchers (ARS and non-ARS) associated with a particular National Program.

**Peer Review:** A process by which independent reviewers assess a research project plan for its scientific and technical quality and suitability of approach in an area of their expertise.

**Program Direction and Resource Allocation Memo (PDRAM):** A document developed by the National Program Staff in consultation with researchers, Research Leaders, Center or Laboratory Director, and the Area Offices, which allocates funding and identifies objectives within the National Program Action Plan that the project is to address.

**Project Plan:** A document detailing the research need, objectives, appropriate hypotheses, experimental approaches, contingencies, and collaborations necessary for accomplishment of the planned research, and milestones and products expected from the successful completion of the research project and developed according to guidelines set forth herein.

## Appendix 1. OSQR PROJECT PLAN TEMPLATE

A Word file needs to be created and formatted as follows:

- 8.5x11 letter portrait
- Single spaced
- 11-pt, Calibri font
- 14-pt, Calibri (Headers only)
- 12-pt, Calibri (Sub-headers only)
- 1" margins all around
- Left justified
- No end-of-line hyphens
- Header on all pages with Lead Scientist's last name at the left and page number placed flush right, **excluding the cover page**
- Footer on all pages as shown in the template, **excluding the cover page**
- Page breaks as indicated on this document

**Background through Approach and Procedures should be 12 pages, not to exceed 27 pages, based solely on the number of SYs listed on a project plan:**

| <b>SYs on Project Plan<br/>(fractional FTEs round up)</b> | <b>Page Number - Max<br/>(suggested background page length)</b> |
|---|---|
| <2  | <b>12 (5)</b>   |
| 2-3.9   | <b>17 (6)</b>   |
| 4-6.9   | <b>23 (8)</b>   |
| 7+  | <b>27 (8)</b>   |

For more details visit the OSQR intranet site on Axon:

<https://axon.ars.usda.gov/osqr/Pages/Home.aspx>

**Project Plan**

**NP XXX – Insert National Program Name**

**5-Year Review Cycle (Year –Year)**

**Old Research Project Number**

XXXX-XXXXX-XXX-00D

**Research Management Unit**

Enter Name of Unit

**Location – City and State**

Enter City and State

**Project Title**

Enter name of project from approved PDRAM

**Investigators**

**FTE**

Enter Investigator First and Last Name.....1.00

Enter Investigator First and Last Name.....1.00

Enter Investigator First and Last Name.....1.00

**Planned Duration** .....# months

## Signature Page (Pre-Peer Review)

**(SIGNATURE AND DATES MUST BE COMPLETE PRIOR TO DISTRIBUTING  
THIS PROJECT PLAN TO THE OSQR)**

### **Lead Scientist Full Name, Project Number and (NP#)**

This project plan demonstrates clearly how the research team will conduct research in a manner appropriate for this area of study. The funds committed toward this project are sufficient to support the planned research.

---

**Research Leader**

---

**Date**

This project plan was prepared by a qualified research team and demonstrates the research team's best effort towards achieving the assigned research objectives.

---

**Center Director/Location Coordinator**

---

**Date**

All internal review and approval requirements have been met. This project plan is relevant to the Agricultural Research Service's National Program [enter NP # and title] Action Plan and was prepared in accordance with the outlined objectives, experimental approach, and project duration previously agreed to by the National Program Team and Research Team. The project plan is now available for peer review.

---

**Area Director**

---

**Date**

This Pre-Peer Review Project Plan embodies the objectives described in the related PDRAM or those subsequently approved by the Office of National Programs, and the approaches are suitable for achieving the objectives.

---

**National Program Leader (primary)**

---

**Date**

*These officials have not performed a scientific merit peer review. Their statements merely express that the research being proposed will be fully funded and technically supported by the research team's Management Unit. Agency approval to implement this project plan shall not be granted without plan certification and external scientific peer review coordinated by the Office of Scientific Quality Review, ARS, USDA.*

**NOTE: Signature blocks are for applicable persons or their surrogates. Digital signatures are acceptable.**

## Table of Contents

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***The following sections should tell a credible story that supports the ARS mission.  
(Pages numbers denote maximums unless otherwise indicated; lack of adherence will result in a return  
to the author for compliance.)***

## **Project Summary**

The audience of the project summary are both internal and external to ARS.

This project summary will need to convey the take-home message of your plan.

In 300 words or less, in active voice, provide:

- A clear overview of the problem(s) to be addressed
- Why you are doing this research (knowledge gaps that need to be considered before the problem can be solved)?
- What you will do?
- How you will do it, briefly?
- What is the expected impact, and who are the impacted stakeholders?

**Background through Approach and Procedures should be between 12-27 pages, solely dependent on the number of SYs listed in the plan (see first page of template for maximum page numbers).**

## **Background**

### **Need for Research/Relevant Literature**

Relevance to ARS National Program Action Plan XXX

- Link the project objectives to the goal of National Program
- State the National Program Component(s) and Problem Statement(s) from the PDRAM

Description of Problem to be Solved

- Discuss the problems that this research will target
- Focus on what is lacking in the respective field of work

Anticipated Deliverable(s)

- Discuss products and outcomes of this research and potential benefits

Customers

- Define customers and stakeholders who will benefit or otherwise have an interest in this research and/or its results

### **Related Research** - Coordination with other projects (ARS and non-ARS)

- Demonstrate how your project is coordinated or associated with other ongoing research projects in and outside of USDA
- Show linkages and relation to other, related and similar, work
  - o important when there are related or analogous ARS projects
  - o important if there are significant efforts outside of ARS; demonstrating your knowledge and/or cooperation with them can be important
- Describe the latest developments in your field
- Discuss how other research supports your plan for research
- Avoid repeating details from prior sections

### **Contributions to the field**

- How will the generated data impact the field?
- How are the current research gap(s) addressed through the proposed project plan?
- Discuss the benefits to producers and consumers of agricultural commodities.
- Clearly articulate how the proposed project will eventually lead to public benefit

## **Approach and Procedures**

### **Objectives/Sub-objectives**

**Objective 1:** Verbatim from PDRAM

#### **Sub-objective 1.A:**

- Create credible, scientifically testable hypotheses or research goals related to the objectives
- Avoid overly complex statements and words such as “may” or “might” or “could”
- Focus on the experimental design, not the research team or scientific background
- Research objectives should be testable within a 5-year period and scientifically sensible
- All sub-objectives must relate to their “parent” objective from the PDRAM
  - o If applicable and intended, describe how objectives/sub-objectives are interrelated
- Illustrate research (Objective) and personnel integration

#### **Collaborations:**

- Include any affiliations
- Describe specialized resources or contributions
- Attach supporting letter to plan

Changes in the PDRAM-driven objectives require ONP concurrence and OSQR verification of the approved changes.

#### **Contingencies:**

- Consider contingencies that will be undertaken should it not be possible to achieve the stated Objectives/Sub-objectives due to new scientific discoveries, unexpected results, or unexpected complications in acquiring needed data
- Clearly articulate research constraints, lack of expertise or technologies – do not mislead the reviewer
- Discuss approaches and milestones that will be considered if the initial research plan is unsuccessful in evaluating hypotheses or attaining stated objectives
- Describe the basis for modification of sub-objectives as you gain results

## **Resource and Data Management (3 pages)**

**Resource Management** – Provide one page to describe physical and human resources.

- Describe major physical resources (*i.e.*, facilities, major instrumentation and equipment, etc.) that are or will be made available to accomplish the research.
- List project plan personnel (postdocs, technicians, students, etc.) who are planned to take an active role in carrying out described research, in-house or available with a cooperator or collaborator.

**SEE EXAMPLE BELOW:**

Dr. Alpha will oversee soil C and N measurements, plant sampling and analyses, gas sampling, and data analyses. His GS-11 Postdoctoral Associate will devote 1.0 FTE to Sub-hypotheses 2b and 2d. His GS-9 Support Scientist, GS-9 Technician and two undergraduate students will devote 0.5, 0.3, and 0.5 FTEs, respectively, to Objective 2. Dr. Beta will conduct the intensive CO<sub>2</sub> flux measurements. A constant temperature room, infrared gas analyzer, automated colorimetric analyzer, and CNS analyzer are all available in Dr. Alpha's lab or nearby labs to which we have access. A deep-core sampler is installed on a pickup truck and is available for use at the location. The rainfall simulator for measuring soil water infiltration, runoff, and sediment transport has been built and is being calibrated by Drs. Alpha and Gamma.

- If personnel vacancies exist in the project plan:
  - o 1<sup>st</sup> consider leaving them out of the plan and having an ad hoc review performed at a later date  
OR
  - o 2<sup>nd</sup> discuss the expertise, discipline, and expected contribution of the new scientist to specific objectives, and include the following language:  
***“Due to a temporary reduction in resources/vacancies, which are being negotiated with the ARS administration to fill, Objective-XYZ or Sub-objective-XYZ will be deferred, or partially investigated by Dr. ABC, until qualifying personnel/additional resources are secured. Every effort will be made to investigate Objective-XYZ or Sub-objective-XYZ until it becomes evident that the vacancies/resources cannot be filled, at which time a revision in Objectives/Sub-objective will be submitted for consideration by the Office of National Programs.”***  
OR
  - o 3<sup>rd</sup> if there is a postdoc or other research scientist that is able to fill the vacancy gap, describe such.

**Data Management Plan** – Provide up to two pages describing how data and metadata used and developed during the research project will be managed and shared both during and after the research period. Unless prohibited by law (*e.g.*, personally identifying information, PII), any such data should eventually become available to the general scientific community. Describe the following:

- Expected Data Types
  - o Provides a description of the data generated by the study (*e.g.*, environmental data gathered through real-time sensor readings; genomic sequence data). Metadata describing the data should be recorded for each experiment, this may include information regarding instrumentation and its configuration embedded in the files produced by sensors or sequencing machines. The plan should indicate if the study will use data from other studies and their source.
- Data Format and Standards

- Describes the data formats (e.g. csv, pdf, doc) for both raw and processed data. The plan will also describe any plans for digital conversion of non-digital data. Metadata and data standards will be recorded in this section of the plan. It is strongly encouraged that researchers will use community-recognized, non-proprietary standards (e.g., ICASA Master Variable List; Gene Ontology; Integrated Taxonomic Information System).
- Data Storage and Preservation of Access
  - This section of the plan discusses how the data will be managed throughout the active phase of data gathering and analysis and identifies the provisions made for depositing experimental data in a trusted/certified repository for long-term preservation and archiving at the conclusion of the study. The section will indicate the anticipated storage needs; retention period for the data; and contingency plans to avoid data loss.
- Data Sharing and Public Access
  - Describes data sharing within project teams during and after data collection. Explanation for: restrictions; embargo periods; and licensing. Includes descriptions of the public access provisions, intended use for the data, suggested citation and fund codes. Provided in this section any justification for extended embargo periods and the plan to ensure research personnel are capturing adequate metadata and robust data management throughout the active experimental phase to guard against data loss. Summarizes the data publishing timeline.
- Roles and Responsibilities
  - This section outlines who will take the lead to ensure the Data Management Plan is implemented. Establishes the contingency plan if key personnel leave the project. Ensures sufficient resources are available for data management.
- Monitoring and Reporting
  - Describes how the project will be monitored and who and where reports will be filed to document the implementation of the Data Management Plan.

For additional information: <https://www.nal.usda.gov/ks/guidelines-data-management-planning>

## Milestones

- Specify achievements and the target dates
  - o EX: Complete a database by 3<sup>rd</sup> quarter of 2021
- Milestones should allow for determination of whether or not progress is being made
- Display effective planning by linking milestones to objectives
- List conceivable milestones (legitimate reasons allow for creation of a new milestones)
- Illustrate the relationships among objectives, overall goals, or outcomes
- Use table provided below
- Information provided should allow for stand-alone document
- 9-pt, Calibri font

**SY Team:**

|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |

|                                    |        |   |                     |   |
|------------------------------------|--------|---|---------------------|---|
| Project Title                      |        | New Title   |                     |   |
| Project No.                        |        | Same number as in footer  |                     |   |
| National Program<br>(Number: Name) |        |   |                     |   |
| Objective                          |        | From PDRAM 1:   |                     |   |
| NP Action Plan Component           |        | From PDRAM for that objective   |                     |   |
| NP Action Plan Problem Statement   |        | From PDRAM for that objective   |                     |   |
| Sub-objective                      |        | 1A: Match the Objectives section; use only if there are Sub-objective(s) associated with the objective. |                     |   |
| Goal/Hypothesis                    |        |   |                     |   |
| SY Team                            | Months | Milestone   | Anticipated Product | Progress/Changes                                    |
|                                    | 12     |   |                     |   |
|                                    | 24     |   |                     | <i>This column for Area Office plan management.</i> |
|                                    | 36     |   |                     |   |
|                                    | 48     |   |                     |   |
|                                    | 60     |   |                     |   |
| Goal/Hypothesis                    |        | if multiple for the Sub-objective   |                     |   |
| SY Team                            | Months | Milestone   | Anticipated Product | Progress/Changes                                    |
|                                    | 12     |   |                     |   |
|                                    | 24     |   |                     | <i>This column for Area Office plan management.</i> |
|                                    | 36     |   |                     |   |
|                                    | 48     |   |                     |   |
|                                    | 60     |   |                     |   |

## **Bibliography (no page limit)**

### **Literature Citation(s)**

- This is not to be a comprehensive bibliography
- List the literature relevant to each objective and sub-objective
- Literature cited should be sufficient to demonstrate investigators have current knowledge and understanding of their respective fields of study
- Published results of past project plans or other preliminary results of the investigators relevant to the current project plan should also be cited
- All citations should be a consistent format

## **Accomplishments/Achievements (4\* pages)**

\*Pages may vary based on number of SYs listed in a project plan.

### **Investigator(s) Past Performance**

- Accomplishments of each investigator (2-page CV maximum per SY which includes most important references to this project plan)
- Include most significant accomplishments and impacts related to the proposed work
- Include applicable funding, internal and external to USDA (grants, etc.)

### **Previous Project Results (2 pages)**

- Achievements/results of previous project(s) related to present project plan
- Relevant publications (no time limit)
- Discuss how the proposed research builds on past accomplishments (if applicable)
- Tabular/bulleted format is acceptable

## **Issues of Concern Statement (2-3 pages)**

Issues of Concern Statement should address those relevant to your plan. Include any obstacles which involve collaborators and any of the following:

- Animal Care. Where animals are part of the research, indicate responsible authority (Institutional Animal Care and Use Committee) for assuring and monitoring compliance, including either chair or overseeing official.
- Endangered Species. If there is potential impact to endangered species, it should be noted along with the monitoring authorities relevant to assuring appropriate protection and compliance.
- National Environmental Policy Act. ARS research may be categorically excluded if, (per NEPA 7 CFR 520) it can be demonstrated they are "... of limited size and magnitude or with only short-term effects on the environment...An environmental assessment shall be prepared for an activity which is normally within the purview of categorical exclusion if there are extraordinary circumstances which may cause such activity to have a significant environmental effect."
- Categorically Excluded under the National Environmental Policy Act regulations. If this is confirmed to be the case, plans can state "On the basis that this Federal project is undertaken for the sole purpose of conducting research, this project is categorically excluded, in accordance with the National Environmental Policy Act (NEPA)."
- Human Studies. Relevant plans must document their compliance with regulations and policies regarding the use of human subjects and identify the responsible office or authority for assuring and monitoring compliance. ALL plans should address this. Where it is not applicable, a statement that the research does not involve human subjects must be included.
- Laboratory Hazards/Safety. Training and, where appropriate, certification of research personnel with regard to biosafety must be indicated. Indication of the authority responsible for assurance of compliance and monitoring is needed.
- Occupational Safety and Health. Training and, where appropriate, certification should be stated, and the relevant office or officer with regard to Safety and Health should be identified.
- Biosafety/Biosecurity/Quarantine. The institutional biosafety committee (IBC) relevant to work at the location and its chair at the time of submission of the plan should be identified for ALL plans. If relevant, an IBC license number must be included. Appropriate training and, where relevant, certification should be noted. Where potential exists (rare) for research to be considered as Dual Use Research of Concern (DURC) it must undergo review coordinated by the NPL to assure that the plan can be sent to external review (For further information on DURC see ARS Policies and Procedures 621 "Dual Use Research of Concern" ([www.afm.ars.usda.gov/media/10456/6210.pdf](http://www.afm.ars.usda.gov/media/10456/6210.pdf))). Where issues related to quarantine exist, appropriate training and/or permits should be indicated.
- Intellectual Property. All plans should, at minimum, state that intellectual property issues are coordinated through the ARS Office of Technology Transfer and the Area (note which Area) Technology Transfer Coordinator. If there are Agency, Department, or international agreements or laws that limit dissemination of results, identification, import, or distribution of materials (including national sovereignty issues such as for biological resources), or procedures in the plan, or that have other related impacts, they should be noted here (Appendix 6).

## **List of Acronyms and Abbreviations (no page limit)**

STANDARD TERMS BELOW, ADD AS NECESSARY

|       |  |
|-------|--|
| AA    | Associate Administrator                        |
| AAD   | Associate or Assistant Area Director           |
| AC    | Administrator's Council                        |
| AD    | Area Director                                  |
| ARS   | Agricultural Research Service                  |
| ARIS  | Agricultural Research Information System       |
| CRIS  | Current Research Information System            |
| DA    | Deputy Administrator                           |
| LS    | Lead Scientist                                 |
| NACA  | Non-Assistance Cooperative Agreement           |
| NAL   | National Agricultural Library                  |
| NPL   | National Program Leader                        |
| ODA   | Office of the Deputy Administrator, ONP        |
| ONP   | Office of National Programs (formerly NPS)     |
| OSQR  | Office of Scientific Quality Review            |
| PA    | Program Analyst                                |
| PDRAM | Program Direction and Resource Allocation Memo |
| RL    | Research Leader                                |
| SQRO  | Scientific Quality Review Officer              |
| SY    | Scientist Year                                 |

## **Letters of Collaboration or Cooperation (no page limit)**

- Each letter should be specific about the role of the collaborator and what each collaborator contributes to the described research (your Approach and Procedures section should put these contributors in context)
- Generic statements of collaboration should be avoided
- Seek letters early in your project plan writing as they are a requirement to constitute a complete plan
- If a contributor is listed on the cover page as an SY, a letter is not necessary
- If a NACA exists, provide a letter from the cooperator that states such and describes the role the cooperator plays in the Approach and Procedures. A copy of the NACA agreement in lieu of a letter is acceptable
- For all letters of collaboration, include an alphabetized list of collaborators with organization affiliation and the relevant Objective or Sub-objective (*e.g.*, Doe, Jane - ABC University, Sub-Objective 1A) and copies of the letters in such order with pagination

### **Appendices (3 pages)**

- Optional section, up to 3 pages maximum
- List by page number
- Supplementary materials that are essential to the plan

## **Appendix 2. ARS (OSQR) Guidance for Internal Reviews of Pre-Peer Reviewed Project Plans**

### **SUMMARY**

**All Areas** shall mandate that preliminary reviews be performed by a minimum of two reviewers outside the Lead Scientist's (LS) respective unit and prior to plan submission to the Area with consideration to the following criteria:

- Approval for all reviewers should be obtained by the LS
- Reviewers should ideally be a combination of ARS and non-ARS subject matter experts
- Pre-peer reviewed project plan comments should be submitted to Area Offices along with the Pre-Plan

---

### **ALL AREAS**

ARS/OSQR Internal Pre-Peer Review Project Plan Policy strongly recommends that all ARS project plans be evaluated by at least two reviewers prior to final submission to the OSQR. Reviews should be performed by knowledgeable individuals, whether external or internal to ARS. No pre-peer reviewer should be part of the investigating team or employed in the same Management Unit.

Each Area determines its own process of approving suggested pre-peer reviewers.

Pre-peer reviewers should evaluate the scientific credibility and merit of the research described in the project plan; additionally, the quality, clarity, and comprehension of the overall project plan should be addressed. A two-to-three-week response time from the reviewers is anticipated and all critiques are provided to the entire research team. The LS and research team may respond by altering the project plan to satisfy the critique(s). If no changes are identified by the reviewer, an explanation of why no changes were deemed to be necessary should be provided. The reviewer's summary comments should be concisely written and provided via tracked changes on the project plan itself or utilizing the ARS (OSQR) Pre-Peer Reviewer form below. This form or a marked copy of the project plan should be submitted to the Area Office prior to external scientific peer review by the OSQR.

## ARS (OSQR) Pre-Peer Review Form

NP # XXX

Project #

Lead Scientist Name: Last, First

Date: of review

Project Title: OSQR Guidance on the Pre-Peer Review Process for ARS Project Plans

**The purpose of this review is to impartially critique the programmatic and technical aspects of the planned ARS research and to comment on the adequacy of the research presented.**

### **1. Adequacy of Approach and Procedures, Methodology and Data Management Plan:**

- Are the subobjectives related and appropriate to achieve the objectives?
  - Are the approaches and methodologies appropriate to prove/disprove the hypotheses or achieve the research goals?
  - Are there areas of the plan that need improvement and if so, how?

### **2. Probability of Successfully Accomplishing the Project's Objectives:**

- Does the plan demonstrate that the research team has the appropriate knowledge and resources to achieve the goals of the proposed research?
- Are the expected outcomes realistic and achievable within the timeframe proposed?
- Are the resources adequate to address the objectives and achieve results in the five-year time frame?

### **3. Merit and Significance:**

- Will the successful completion of the project enhance knowledge of a scientifically important problem or lead to new technologies or scientific discoveries?
- Are you aware of any other data/studies relevant to this research effort?
- What is the value of the research to stakeholders, customers, and end users – is there direct value to national and global agricultural challenges?

**Additional Comments:** (i.e., concerns with quality, clarity, cohesiveness, and comprehension of this project plan)

### Appendix 3. Class Score Sheet

| CLASS SCORE SHEET   |                |                 |   |  |
|---|----------------|-----------------|---|--|
| United States Department of Agriculture<br>Agricultural Research Service<br>Office of Scientific Quality Review   |                |                 | <i>Plan:</i>  |  |
| <i>National Program:</i>  |                |                 |   |  |
| <i>Review Date:</i>   |                |                 | <i>Lead Scientist:</i>  |  |
| Scientific Quality Review Officers: The Officer whose signature appears below agrees to treat the content of the Plan as confidential and that no basis for a conflict of interest has been found. Final determination of conflicts of interest, which are outlined in the Peer Review Guidelines for ARS Panel Reviewers, resides with the OSQR. |                |                 | SEE GUIDELINES FOR REVIEWING ARS PROJECT PLANS  |  |
|   |                |                 | Individual quality ratings translate into the following numerical values:   |  |
|   |                |                 | <b>No revision required = 8 points.</b> An excellent plan: no revision is required, but minor changes to the plan may be suggested.   |  |
|   |                |                 | <b>Minor Revision Required = 6 points.</b> The project plan is feasible as written, and requires only minor clarification or revision to increase quality to a higher level.  |  |
|   |                |                 | <b>Moderate Revision Required = 4 points</b> The project plan is basically feasible, but requires change or revision to the work on one or more objectives, perhaps involving alteration of the experimental approaches, in order to increase quality to a higher level; and may need some rewriting for greater clarity. |  |
| Reviewer  | Quality Rating | Numerical Value |   |  |
|   |                |                 |   |  |
|   |                |                 |   |  |
|   |                |                 |   |  |
|   |                |                 |   |  |
| 8   |                |                 |   |  |
| 9   |                |                 |   |  |
| 10  |                |                 |   |  |
| Total # of Reviewers  | 0              | Total Rating    | 0   |  |
| Average Rating: <span style="color: green;">▲</span>  |                | #DIV/0!         |   |  |
| EVALUATION  |                |                 |   |  |
| No Revision Required ( $\geq 7.0$ )   |                |                 | <b>Major Revision Required = 2 points</b> There are significant flaws in the experimental design and/or approach, or a lack of clarity which hampers understanding. Significant revision is needed.   |  |
| Minor Revision Required (5.1-6.9)   |                |                 |   |  |
| Moderate Revision Required (3.1 to 5.0)   |                |                 |   |  |
| Major Revision Required (1.1 to 3.0)  |                |                 |   |  |
| Not Feasible ( $< 1.1$ )  |                |                 |   |  |
| <i>Per project plan, individual panelist quality ratings will be tallied, divided by the total number of panelists (panel members, plus panel chair, excluding ad hoc reviewers), and rounded to the nearest tenth to arrive at a final project score. Final project ratings are shown above.</i>   |                |                 | <b>Not Feasible = 0 points</b> The project plan, as presented, has major scientific or technical flaws. Deficiencies exist in experimental design, methods, presentation, or expertise which make it unlikely to succeed.   |  |
|   |                |                 |   |  |
|   |                |                 |   |  |

## Appendix 4. Panel Recommendations Form

Project Title:

Lead Scientist:

Date:

Name of the Review Session:

### PANEL RECOMMENDATIONS OF ARS RESEARCH PROJECT PLAN

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**1. Adequacy of Approach and Procedures:** Are the hypotheses and/or plan of work well conceived? Are the experiments, analytical methods, and approaches and procedures appropriate and sufficient to accomplish the objectives? How could the approach or research procedures be improved?

**Objective 1: Develop reagents to detect...**

Strengths:

Questions or Recommendations:

**Objective 2: Advance the development of instrumental, testing methods...**

Strengths:

Questions or Recommendations:

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**2. Probability of Successfully Accomplishing the Project's Objectives:** What is the probability of success in light of the investigator or project team's training, research experience, preliminary data, if available, and past accomplishments? Are the objectives both feasible and realistic within the stated timeframe and with the resources proposed? Do the investigators have an adequate knowledge of the literature as it relates to the proposed research?

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**3. Merit and Significance:** Will the successful completion of the project enhance knowledge of a scientifically important problem? Will the project lead to the development of new knowledge and technology? Are you aware of any other data/studies relevant to this research effort? If applied research, comment on the value of the research to its customers.

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**Additional Comments or Suggestions**

## Appendix 5. Additional Signature Pages

### Post-Plan Peer Review Signature Page Lead Scientist, Project Number and Title

This project plan was revised, as appropriate, according to the peer review recommendations and/or other insights developed while considering the peer review recommendations. A response to each peer review recommendation is attached. If recommendations were not adopted, a rationale is provided.

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**Research Leader**

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**Date**

This final version of the project plan reflects the best efforts of the research team to consider the recommendations provided by peer reviewers. The responses to the peer review recommendations are satisfactory.

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**Center or Lab Director**

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**Date**

The attached plan for the project identified above was created by a team of credible researchers and externally reviewed and recognized by the team's management and National Program Leader to establish the project's relevance and dedication to the Agricultural Research Service's mission and Congressional mandates. It reflects the best efforts of the research team to consider the recommendations provided by peer reviewers. The responses to the peer review recommendations are satisfactory. The project plan has completed a scientific merit peer review in accordance with the Research Title of the 1998 Farm Bill (PL105-185) and was deemed feasible for implementation. Reasonable consideration was given to each recommendation for improvement provided by the peer reviewers.

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**Area Director**

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**Date**

This Pre-Peer Review Project Plan embodies the objectives described in the related PDRAM or those subsequently approved by the Office of National Programs, and the approaches are suitable for achieving the objectives.

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**National Program Leader (primary)**

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**Date**

For labs that have a three-tier organization structure (vs. the four-tier organization that is implied on the signature page), you may combine the first and second signature block. If your lab uses a different title for the Research Leader or Center Director, you may edit the title lines accordingly.

**Re-Review Signature Page**  
**Lead Scientist, Project Number and Title**

This project plan was revised according to the recommendations made by the panel and demonstrates how the team will conduct the research. The funds committed toward this project are sufficient to support the planned research.

\_\_\_\_\_  
**Research Leader**

\_\_\_\_\_  
**Date**

This project plan was prepared by a qualified research team and demonstrates the research team's best effort towards achieving the assigned research objectives.

\_\_\_\_\_  
**Center or Lab Director**

\_\_\_\_\_  
**Date**

This project plan was prepared by a qualified research team and demonstrates the research team's best effort towards achieving the assigned research objectives. All internal review and approval requirements have been met. This project plan is relevant to the Agricultural Research Service's National Program [enter NP # and title] Action Plan and was prepared in accordance with the outlined objectives, experimental approach, and project duration previously agreed to by the National Program Team and Research Team. To validate the plan's readiness for implementation and gain recommendations for improvement, the project plan is now available for peer review.

\_\_\_\_\_  
**Area Director**

\_\_\_\_\_  
**Date**

This Re-Peer Review Project Plan embodies the objectives described in the related PDRAM or those subsequently approved by the Office of National Programs, and the approaches are suitable for achieving the objectives.

\_\_\_\_\_  
**National Program Leader (primary)**

\_\_\_\_\_  
**Date**

*These officials have not performed a scientific merit peer review. Their statements do not necessarily require expertise in the scientific subjects associated with this research. The approval to implement this project plan cannot be made without scientific peer review by the Office of Scientific Quality Review, ARS, USDA. For labs that have a 3-tier organization structure (vs. the 4-tier organization that is implied on the signature page), you may combine the first and second signature block. If your lab uses a different title for the Research Leader or Center Director, you may edit the title lines accordingly.*

## Appendix 6. Intellectual Property

In developing and executing research projects in ARS, it is critical to understand the role of intellectual property (IP) and its impact on research performance and technology transfer.

In planning and conducting research IP may impact the work and the ultimate use of resulting technologies. These include confidentiality of information; the proprietary nature of materials, processes and/or research tools; and intellectual property issues associated with collaborations.

### Definitions

*Intellectual Property:* "... applies to any product of the human intellect ... whether or not the subject matter is protectable..." These include "invention, discovery, technology, creation, development, or other form of expression of an idea." (excerpts from *Technology Transfer Desk Reference, Federal Laboratory Consortium, 2003*)

*Technology Transfer:* The process by which research results are adopted and put into practice.

### Developing the Project Plan

It is important to recognize and identify potential IP issues in developing the project plan to avoid potential conflicts in using the results of the research or difficulties in ultimately transferring the technology. If materials or methods/processes used are proprietary or protected by patents or other means, it may limit the ability to transfer the technology to end users and/or it may increase the cost for customers. For guidance on identification or management of IP issues, contact Patent Advisors and Technology Transfer Coordinators or the ARS Office of Technology Transfer.

*Materials and Experimental Procedures:* In developing a project plan and selecting experimental methods, the materials and/or methods proposed for the research approach should be reviewed to identify any potential IP issues, and, if so, to identify the owners of the technology. Technologies to be used that are patented or proprietary should be clearly identified, including ownership, and, if necessary, Material Transfer Agreements should be initiated. Consideration should be given to the impacts of using protected technologies on the outcomes of the research and, if appropriate, alternatives should be identified.

*Scientific Background and Literature Review:* In conducting a literature review for the proposed project, it is useful to check the citations of the publications for references to patents that may be relevant to the materials or procedures of the proposed research approach. If appropriate to the field of research, a patent search should be performed to identify any potential IP issues that may be associated with the use of proprietary information or materials. Publication of research results in journals does not preclude the existence of associated patents, *even if they are not referenced in the publication.*

*Collaborations:* Collaborative efforts may include, but are not limited to, development of the research plan, cooperative research activities, and/or transfer of materials to or from ARS. To preserve any potential IP rights, Confidentiality Agreements should be used when developing the project with collaborators or sharing new or unpublished ideas or data. Use of Cooperator's confidential information in the research project may limit the ability to publish or transfer the results of the research. Such issues should be discussed in advance and appropriate Confidentiality Agreements or Research Agreements put in place prior to initiation of the

research. In addition, if materials will be transferred to or from ARS, a Material Transfer Agreement should be used if these are patented or proprietary. If there is a potential for IP to result from the project, cooperative research agreements (e.g.: Memorandum of Understanding, Trust Agreement, Specific Cooperative Agreement, or Cooperative Research and Development Agreement) should be developed to define management of associated intellectual property issues.

### **Transferring the Technology**

#### *Anticipated Products and Customers of the Research*

The Federal Technology Act of 1986 assigns each ARS scientist the responsibility for technology transfer. Because ARS is a publicly funded Federal institution, the transfer of ARS technology to customers is the primary consideration in determining whether to protect any inventions that result from ARS research. Examples of technology transfer include demonstrations, presentations, publications, utility or plant patents, plant variety protection certificates, and biological material inventions. ARS protects intellectual property only if it enhances or is necessary for successful technology transfer. Consult with ARS Patent Advisors and Technology Transfer Coordinators for evaluation of potential IP to determine the most appropriate mechanisms for transfer of new ARS technologies.

In developing a project plan and identifying customers of the research, there should be an evaluation of the potential outcomes and products of the research which identifies the ultimate users; how technology will be transferred; if further development or protection will be needed to transfer the technology; if there are regulatory actions or approvals needed, and if so, appropriate steps to be taken to prevent premature disclosure of confidential information and to protect potential IP rights (Confidentiality Agreements, Material Transfer Agreements, Cooperative Research Agreements). Avoiding premature disclosure is critical because there may be substantial overseas markets for U.S. companies developing products from ARS technologies. Any enabling oral or printed disclosure of an invention eliminates patent options in foreign countries unless an application has already been filed in the United States. Web page publication of meeting abstracts, field days, and open house poster sessions can potentially constitute a disclosure. Scientists should consult with their ARS Patent Advisor in advance.

#### **For further assistance**

To maximize the ability to perform research and to facilitate technology transfer, it is important to be aware of current and emerging technologies and to identify protected intellectual property issues associated with them. Likewise, it is critical to evaluate research results for potential IP and to work with the Office of Technology Transfer to select the optimal vehicles for transfer of new technologies to our customers. For further information and assistance see:

*Patents, identifying background IP, how to do a patent search, patentability issues:*  
ARS Patent Advisors

*Confidentiality Agreements, Material Transfer Agreements, Research Agreements:*  
ARS Technology Transfer Coordinators