Exhibit 8: The ARS Research Project Plan Instructions and Format

Create a WordPerfect or Word file according to these instructions. Please name the file: "[NP]-[CRIS#]-[SY]-PP." Add "draft", "final", or "revised" to the end of the file name as appropriate.

The Plan should be formatted as follows:
8.5x11" letter portrait, single spaced, 1" margins all around
11-pt Arial or Helvetica font, full justified, no end-of-line hyphens

Header on all pages with **lead scientist's** name at the left and page numbers placed flush right, excluding the cover page. Insert a footer on all pages with version date at the left.

For tables, omit all vertical lines; place single horizontal lines under the title, under the column headings, and at the bottom of the table, just above any footnotes. Do not enclose tables with lines or other borders. Avoid creating color graphics, unless necessary to thoroughly describe your plan or demonstrate scientific analyses. If color graphics are included and considered necessary, a note must accompany the plan stating that it must be printed in color. Unless the file exceeds 1 megabyte, do not create attachments.

The Plan should not exceed:

<2	Scientific Years= 15 pages
2-3.9	Scientific Years= 20 pages
$4	Scientific Years= 25 pages

from **Objectives** through **Milestones and Expected Outcomes**. Up to two pages of schemes, figures and diagrams can be included in the text and will not be counted against the page limit. This first part should flow from one section to the next without new page breaks.

The **Cover Page**, **Signature Page**, **Table of Contents** , **Project Summary**, **Objectives, Literature Cited**, **Past Accomplishments of Each Investigator**, **Health, Safety, and Other Issues of Concern Statement**, and **Appendices** should all be started on new pages.

Cover Page

***National Program* –** The title of and the percent coded to the National Program(s) under which the research described below is conducted.
***Dates* –**State the general period in which the research project will be peer reviewed.
***Old CRIS Project Number* –** The CRIS number for the expiring project. If new, leave blank. If projects are being combined, list those that are being combined. If a project is being split, note that the old CRIS Project is being split during this process.
***Management Research Unit* –** The six digit number including name of Management Research Unit (Example: 0000-00–Name of Management Research Unit)
***Location* –** City and State.

Title – A brief, clear, specific description of the project. Used alone, it should provide a clear indication of what the project is specifically about. It should not contain more than 100 characters including letter, symbols and spaces.

Investigator(s) – List all Category I and Category IV Scientists (including vacancies) and percent commitment (SYs) to the project. Identify the lead scientist. If the research team includes scientists not employed by ARS, (e.g., this is an extramural project.) list them also but identify their employer.

Scientific Staff Years – List as a decimal, i.e., 2.75. (Does not include scientists not employed by the ARS. However to determine the page limit, calculate an equivalent scientific year for non-ARS scientists.)

Planned Duration – List in terms of total months, i.e., 60 months.

Signatures – Insert the Signature Page. Note that the signature page changes once the project plan has received a favorable peer review and is prepared for implementation.

Area Office: OSQR only accepts project plans that demonstrate the four approvals. Submit completely approved plans, in an electronic and hardcopy format, before and after (the final project if there is no re-review) peer review. Attach an original copy of the signature page signed by the Area Director, to the hardcopy of the final project plan.

Table of Contents— Insert a table of contents, whereby the pages up to the "Objectives" section are numbered in lower case Roman numerals. See example of a table of contents.

Project Summary - The objectives and research approaches of the Project Plan should be summarized in 250 words or less on the second page. *The first four pages of the Project Plan are not counted against the page limit.*

Objectives – A clear statement must be given of the specific objectives of the project that are attainable within the project time period (not to exceed 5 years) and with the physical resources committed to the project as discussed in the Approach and Research Procedures section. The statement should be complete enough to be used as the basis for scientific review. Elaborate, in paragraph form, the bullet statements from the Prospectus.

Need for Research – A statement that provides information necessary for the review of the project based on its relevance to ARS National Program action plans. Use subsections to denote the following, which must be covered:

- Description of the problem to be solved.
- Relevance to ARS National Program Action Plan.
- Potential benefits expected from attaining objectives.
- Anticipated products of the research.
- Customers of the research and their involvement.

Scientific Background – Do not repeat information provided in the Need for Research section. Discuss scientific literature and current technology as related to stated objectives and scientific feasibility of the project. This focused review should demonstrate that the investigator(s) know(s) and understand(s) the field of study. Relevant past projects of the investigator(s) of the proposed

project should be discussed in terms of related objectives and to what degree they were met. A CSREES-CRIS search of research that is currently underway on the proposed project topic is required in this section. According to instructions from the National Program Leader and Area Director, describe Congressional mandates related to the project. Document patent searches if the project deals with technology development.

Approach and Research Procedures – Use four subsections under this heading to elaborate on the following:

Experimental Design – Describe in detail the scientific and experimental approach that is to be used and the research procedures that will be followed to attain objectives. This section should discuss, if applicable, what hypotheses will be tested; how they will be tested; and how experimental results will be evaluated.

Contingencies – Discuss approaches and experimental options that will be considered if the initial research plan is unsuccessful in evaluating hypotheses or attaining objectives.

Collaborations – Describe collaborations with scientists outside of this project (ARS and external to ARS) that are necessary to attaining the objectives. Necessary is meant to mean required for a successful project outcome. Necessary collaborations should be documented by an appended electronic letter from the scientist briefly detailing the collaboration. The letters of intent to collaborate must discuss what the collaborator will do and what level of commitment is anticipated.

If appropriate, sets of the above subsections may be used for each major objective.

Physical and Human Resources – Describe availability of major physical resources (i.e., facilities, major instrumentation and equipment*, etc*.) that are necessary to accomplish the research. Estimate the number (FTE) of non-Cat. I project personnel (postdocs, technicians, students, etc.) who will be available for this project.

Milestones and Expected Outcomes – Describe a series of milestones (significant points in the project where progress can be documented) for the life of the project. Construct a time-line estimating when these milestones can be reasonably met, showing which scientists will be responsible for each milestone or step in the process. Describe how progress will be documented and evaluated (*i.e*., products of the research).

AT THIS POINT, the Plan should not exceed:

<2 Scientific Years= 15 pages
2-3.9 Scientific Years= 20 pages
$4 Scientific Years= 25 pages

The plan can have up to two pages of illustrative material (e.g., schemes, figures, flow diagrams) that will not be counted against the page limit.

Literature Cited – Begin the Literature Cited on a new page. Literature can be listed alphabetically by author or in order of citation in the text. If papers are cited by author(s) and year, they must be listed alphabetically in the Literature Cited section. However, any citation format accepted by a scientific journal that includes all authors, article title, and complete page numbers may be used. Only material or papers that are published or in press should be provided in this section. Theses and dissertations, state and federal documents intended for professional distribution, and peer-reviewed proceedings of meetings generally are acceptable citations. Meeting abstracts, unpublished materials, and non-peer-reviewed materials are not acceptable as citable materials.

Past Accomplishments of Investigator(s) – Begin each investigator's past accomplishments on a new page. In one single-spaced page or less per scientist, provide education and work experience, and describe accomplishments of the investigator(s) of this project over the past 10 years that are significant and pertinent to the proposed research. Follow each investigator's past accomplishments with a list of all peer-reviewed publications authored by the investigator in the past 5 years and all publications by the investigator that are clearly relevant to the area of this research project during the past 10 years.

Use of figures, schemes, and tables can greatly enhance the plan, especially the milestones and expected outcomes section. Remember, up to two pages of figures, schemes, and tables will not be counted as part of the 15-25 page limit.

> Order the publications according to publication date, most recent last. Any citation format accepted by a scientific journal that includes all authors, complete article title, and complete page numbers may be used.

Health, Safety, and Other Issues of Concern Statement – Address the safety concerns for seven issues including identification of necessary permits either in hand or requested. If not relevant, please state as such.

- Animal Care
- Endangered Species
- Environmental Impact Statement – Scientists and their Research Leaders shall make a determination on the potential environmental impact of the research. Many ARS research projects are conducted in contained facilities such as laboratories, greenhouses, or field plots. Such projects would be considered to the Categorically Excluded under ARS National Environmental Policy Act regulations. Project statements would then include the following statement*: "THE RESEARCH PROJECT HAS BEEN EXAMINED FOR POTENTIAL IMPACTS ON THE ENVIRONMENT AND HAS BEEN FOUND TO BE CATEGORICALLY EXCLUDED UNDER ARS REGULATIONS FOR THE NATIONAL ENVIRONMENTAL POLICY*

ACT." The appropriate NPL(s), in discussion with the scientist about a replacement project, will decide whether it is Categorically Excluded.

- Human Study Procedure
- Laboratory Hazards
- Occupational Safety & Health
- Recombinant DNA Procedures

Appendix – On a new page, list appendices by page number (if in the main file), or by filename (if additional files are submitted electronically). Letters of collaboration should be included here, as well as any other supplementary materials that are essential to the plan. Scan or paste the collaborators letters into the project plan appendices after the list of appendices page. If this is not possible, electronically submit additional files as attachments.

Submit files of large graphics as attachments only if the project plan would exceed 1 megabyte.

Comments

for Section 20

The ARS Research Project Plan Instructions and Format