

Fiscal Year 2019
Panel Outcome Report
Crop Production (NP 305)

David Shapiro-Ilan, Ph.D., Scientific Quality Review Officer
(January 2018-December 2019)

Date

Marquea D. King, Ph.D., Director/Program Coordinator

Date



Office of Scientific Quality Review
Agricultural Research Service
United States Department of Agriculture

Panel Outcome Report FY 2019 Crop Production (NP 305)

This Panel Outcome Report is a summary of the Crop Production, National Program (305) Office of Scientific Quality Review (OSQR) Project Plan Peer Review (PPPR) process held from May 2019 – December 2019.

The project plans reviewed by these panels were applicable to the mission of the National Program (305) to enhance American agricultural crop productivity, efficiency, and sustainability, and ensure a high quality and safe supply of food, fiber, feed, ornamental, and industrial crops for the nation.

This panel outcome report is intended to inform the Office of National Programs (ONP) and each Area of their research (research scientist or SY) progress as it relates to the NP 305. Data tables display outcome of scoring by Areas, Panels and overall program.

Selected chairs (Table 1) were in part, recommended by National Program Leaders (NPLs) from NP 305 and/or previous OSQR service; others were sought based on their nationally recognized expertise by the OSQR Director. They were examined for suitability to lead a panel review, screened for conflicts of interest (COI) and finally concurred upon by the current Scientific Quality Review Officer (SQRO), Dr. David Shapiro-Ilan.

Table 1.
Panels reviewed for the Crop Production, National Program (305)

Panel	Panel Chair	Panel Meeting (Re-Review)	Number of Panelists	Number of Projects
NP 305 Panel 1. Ad Hoc-Productive & Profitable Systems for Sustainable Production of Agronomic Crops	N/A	Ad Hoc	3	2
NP 305 Panel 2. Productive and Profitable Systems for Sustainable Production of Fruit and Nut Crops	James Syvertsen	11/15/2019	5	5
NP 305 Panel 3. Ad Hoc-Productive and Profitable Systems for Sustainable Production of Ornamental, Nursery, and Protected Culture	N/A	Ad Hoc	3	3
NP 305 Panel 4. New and Improved Automation and Spray Application Systems	Celina Gomez	12/9/2019	3	3
NP 305 Panel 5. Ad Hoc-Bees and Pollination 1	N/A	Ad Hoc	3	2
NP 305 Panel 6. Bees and Pollination 2	Elina L. Nino	12/16/2019 (5/19/2020)	4	4

Review Process

Following panel review for each plan, OSQR Director, with SQRO concurrence, sends each Area Director a panel consensus recommendation document. This may include recommendations for revision of the plan to which researchers are required to respond in writing and, as appropriate, revise their written plans in accordance with guidelines as detailed in the OSQR Handbook (see www.ars.usda.gov/osqr).

In addition, as part of the panel deliberation, a scoring of the overall quality of the plan, is judged based on the degree of revision the panel deems is required. This scoring is termed an “Action Class.” Each reviewer is asked to anonymously provide an Action Class rating for each plan. OSQR assigns a *numerical equivalent* to each Action Class rating and then averages these to arrive at an overall Action Class score for the plan.

The Action Class is defined as follows:

No Revision Required. An excellent plan; no revision is required, but minor changes to the project plan may be suggested.¹

Minor Revision Required. The project plan is feasible as written, requires only minor clarification or revision to increase quality to a higher level.

Moderate Revision Required. The project plan is basically feasible but requires changes or revision to the work on one or more objectives, perhaps involving alterations of the experimental approaches in order to increase quality to a higher level and may need some rewriting for greater clarity.

Passed Review:

For plans receiving one of the above three Action Class scores (No Revision, Minor Revision or Moderate Revision), scientists are required to respond in writing to address all panel comments in the consensus recommendation document; revise their project plan as appropriate; and submit the revised plan and responses to the OSQR through their Area Office. Both the updated plan and the recommendations’ form are reviewed by the SQRO and, once they are satisfied that all review concerns have been satisfactorily addressed, the project plan is certified, the Area Office is notified, and the project plan may be implemented.

Certification:

Certification is contingent upon making a good faith effort to satisfactorily address panel comments and recommendations. A plan has not “passed” the OSQR PPR process until the SQRO’s certification is delivered to the Area.

Major Revision Required. There are significant flaws in the experimental design and/or approach or 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.

¹ While a No Revision action class would imply that change to the plan is not required, where the panel requests specific additions to the plan, if accepted, these should be incorporated into the updated plan.

Failed Review:

For plans receiving one of the above two Action Class scores (Major Revision or Not Feasible), scientists are required to address, in writing, all panel comments in the consensus recommendation document; revise their project plan as appropriate; and submit the revised plan and responses to the OSQR through their Area Office *AND* then must undergo a Re-Review by the initial deliberating panel, at which time a second set of consensus recommendations and second Action Class score are obtained.

Per the Re-Review, if the plan receives an Action Class score of a No Revision, Minor Revision or Moderate Revision the project plan may be implemented after following the **Passed Review** section above. Plans receiving a second Major Revision, or Not Feasible score are considered failed reviews. The Action Class and Consensus Recommendations from the Re-Review are provided to the Area with NO further option for revision or review on that particular project plan as it has been submitted.

Such plans may be terminated, reassigned, or restructured at the discretion of the Area Office and ONP. For plans receiving Major Revision, it may be elected not to further revise them and to end review with the plan not receiving certification (plan fails review). For those receiving a score of Not Feasible, Area and National Program Leader (NPL) approval are needed for the plan to be revised for re-review. Otherwise the plan will be considered to have failed review. Subsequent action with regard to the research and researchers is left to Area and ONP-NPL leadership.

At the finale of each PPPR deliberation, the chair and panel reviewers are asked to provide general statements or recommendations on the overall process as well as the general quality of the plans which underwent review. The Chair is specifically asked to provide a Panel Chair Statement which they feel focuses on the overall conduct of the review or any broad areas with regard to the research they feel would be of benefit to future researchers or the Agency as a whole. Copies of such statements for (NP 305) are found in the following this report.

Review Outcomes

Reviews can vary, but ultimately, depends on a combination of the panelists selected and the scientific writing capabilities of the team who wrote the project plan. The OSQR is responsible for assuring that each panel contains subject matter experts who provide knowledgeable, clear, rigorous, and fair assessments. Therefore, PPPR panels vary in their overall outcomes.

Uniquely, the ability of an ARS research team to respond to panel recommendations/comments in order to *revise and improve project plans is, perhaps, the greatest strength of the ARS PPPR process.*

ARS uses the National Program Panel Outcome Report as a measure of scientific progress and as a demonstration of overall program quality, how well researchers understand and address the needs of the expert panel reviewers. Initial review scores that are moderate or higher are recorded as such and will not be certified as having completed the PPPR until the SQRO has deemed that all reviewer concerns have been satisfactorily addressed. For lower scores/failed reviews, the panel provides a re-review score, which is considered along with the initial review score.

Table 2.

Initial and Re-review Scores for Crop Production, National Program (305)

Panel	No revision	Minor	Moderate	Major	Not Feasible	Re-Review
NP 305 Panel 1		1	1			
NP 305 Panel 2			3	2		1 Minor 1 No Revision
NP 305 Panel 3	1	1	1			
NP 305 Panel 4		2	1			
NP 305 Panel 5		1	1			
NP 305 Panel 6		3		1		1 Minor

*Review conducted by no less than two (or greater) expert panel reviewers providing independent written reviews and scores without group panel deliberation. Scores reflect the average of no less than two expert reviewers and written reviews are compiled and screened by OSQR Director.

Table 3.

Area Scores for Crop Production, National Program (305)

Area	No revision	Minor	Moderate	Major	Not Feasible
MWA	1	2			
NEA		2		1	
PA		1	1		
PWA	1	3	2	2	
SEA		2	4		

Table 4.

Overall Scores for Crop Production, National Program (305)

	No revision	Minor	Moderate	Major	Not Feasible
# Plans with each score	2	10	7	3	

Overall Panel Characteristics:

Panel Characteristics

The OSQR PPPR relies heavily on expert panel member selection by the OSQR Director and SQRO selected Panel Chairs. ARS scientists, research leaders, and ONP are encouraged to recommend panelists they understand to be free of any COIs. While the selected/seated Panel Chair is under no obligation to use Agency recommended panelists, the SQRO must review and approve the Chair's panelist selections and may ask for substitutions or provide additional experts for consideration.

Factors and qualifications considered in PPPR panel selection (chair and panelist) are those such as: being a qualified expert overall in the field being reviewed, research tenure, publication record, award history, geographic location, overall diversity and availability to participate fully in the process all play an integral role in who is invited to serve an ARS/OSQR PPPR panel. Many of the reviews are composed with a balance of nationally and internationally recognized experts. Tables 5-6 display various characteristics of the panel composition, all affiliations were accurate at the time of the panel review.

Affiliations

Peer reviewers are affiliated with several types of institutions, primarily those in academia, but also special interest groups and industry. In some cases, peer reviewers have recently retired but are still active as consultants, scientific editorial board members, and members of professional societies.

Table 5.

Panelist Faculty Rank and Affiliations for Crop Production, National Program (305)

Panel	Professor	Associate Professor	Assistant Professor	Government (Agency)	Industry & Industry Organizations
NP 305 Panel 1	2	1			
NP 305 Panel 2	2	1		1 Retired as an extension agent. 1 program manager	
NP 305 Panel 3	2	1 (Also an extension specialist)			
NP 305 Panel 4	2	1	1		
NP 305 Panel 5	2	1			
NP 305 Panel 6	3	1		1 (Assistant Specialist in Cooperative Extension)	

Research Impact and Ethnicity/Gender

The OSQR PPPR process is lauded as a rigorous and objective ARS function striving for the highest possible scientific credibility. In general, panelists shall hold a doctoral degree unless the discipline in question is one which does not subscribe to a doctorate level education to achieve the highest recognition and qualification (e.g., engineers and modeling specialists). Panelists are also judged by their most recent professional accomplishments (e.g. awards and publications completed in the last five years). Finally, the panelists who are currently performing or leading research to address a problem similar to those being researched in the National Program under review are preferred.

Table 6.

Panel Additional Information Crop Production, National Program (305)

Panel	H-index	Gender	Geographic Locations
NP 305 Panel 1		2 Males 1 Female	2 Mid West Area 1 Plains Area
NP 305 Panel 2	Average: 24	5 Males	2 Pacific West Area 2 South East Area 1 Plains Area
NP 305 Panel 3		1 Male 2 Females	1 Plains Area
NP 305 Panel 4	Average: 17	3 Males 1 Female	2 South East Area 1 North East Area 1 Mid West Area
NP 305 Panel 5		1 Male 2 Females	1 Mid West Area
NP 305 Panel 6	Average: 18	2 Males 3 Females	1 United Kingdom 1 Canada 1 Pacific West Area 1 North East Area 1 South East Area

List of Panel Chairs

NP 305 Panel 2

James P. Syvertsen, PhD

University of Florida
Professor Emeritus

Education:

PhD, New Mexico State University

NP 305 Panel 4

Celina Gomez

University of Florida
Assistant Professor in Controlled Environment Horticulture, Environmental Horticulture Department (ENHD)

Education:

MS, University of Arkansas
PhD, Purdue University

NP 305 Panel 6

Elina L. Nino

University of California at Davis
Assistant Specialist in Cooperative Extension - Apiculture, Department of Entomology and Nematology

Education:

MS, North Carolina State University
PhD, The Pennsylvania State University

NP 305 Crop Production, National Program Panel Chair Statements

Panel Chair responsibilities include providing the OSQR with a statement that describes their overall panel experience, how the panel was conducted, and general quality of the plans reviewed, it does not lend itself to discussing details of specific research project plan reviews nor attribution to individual panelists. Panel Chairs are given a format to follow for writing their statements, however, are free to discuss what they believe is important for broader audiences.

(Note: NP 305 Panel 6 Chair Statement Not Received)



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July 15, 2020

David I. Shapiro-Ilan, Ph.D.
Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

Dear Dr. Shapiro-Ilan,

re: Assessment of the review process and panel

On 18 Dec 2019, we finished the review process of NP 305 Panel 2. Productive and Profitable Systems for Sustainable Production of Fruit and Nut Crops (2019). Overall, the five research plans were well organized with valid approaches to accomplish objectives. Three of the five received passing evaluations while two will need to be modified and re-reviewed. A common concern throughout was the lack of detail in the Milestone table with respect to the specific timing of accomplishing objectives within the 5-year period beyond simply stating the duration of each. This may have followed the guidelines given to the lead scientists so I think it would be helpful for future panel members to receive a copy of the plan preparation guidelines prior to the review process.

The materials and organization given to the panel was good. The plans had mostly good objectives and were comprehensively written. As evidenced by the written reviews, the scientific expertise of the panel members enabled them to thoroughly evaluate their assigned plans and point out strengths and weaknesses. Oral discussions focused on weaknesses to ensure concurrence rather than simply reiterating strengths. A principle weakness in plans that needed more work was a lack of focus on too broad of an approach. In several plans, better descriptions of ongoing related research (beyond topics and titles) could have been made and better linkages between ongoing research and what the plan added could have been established.

I and several panel members expressed that they valued the opportunity to evaluate research beyond their expertise and welcomed the role of working to contribute to the improvement of ARS research.

Sincerely,

A handwritten signature in black ink, appearing to read "J.P. Syvertsen".

J.P. Syvertsen, UF Emeritus Professor of Plant Physiology
Field Trial Program Manager, CRDF/CPDC

Friday, January 3, 2020

David I. Shapiro-Ilan, Ph.D.
Scientific Quality Review Officer
Office of Scientific Quality Review
Agricultural Research Service, USDA
5601 Sunnyside Avenue, MS 5142
Beltsville, MD 20705

Dear Dr. Shapiro-Ilan:

The scientific review panel consisting of three experts in remote sensing and spray application technology met via Webex on Monday, December 9, 2019 at 11 AM Eastern time. The panel reviewed three project plans relevant to automation and spray application technologies. Each panel member had almost five weeks to review two proposals as either primary or secondary reviewer. Comprehensive written review forms were submitted one week prior to the panel review and distributed among all panel members. Specific comments were summarized during the panel by the corresponding primary and secondary reviewers. Overall, comments from the panel were favorable for all three project plans and no major issues were noted regarding their organization, approaches, or direction.

Two recommendations for future project plans were noted from the review discussions. One is to specifically require the description of experimental hypotheses, as this would enable reviewers to accurately assess the validity of the proposed methodology for the assigned objectives. Another suggestion is to request the inclusion of diagrams or images when describing certain equipment or instruments, particularly those with unique components that are critical to address specific research questions.

Overall, the review process was efficient and productive. Reviewers were quick to respond and complied with their assigned responsibilities in a professional and timely manner. The review comments provided detailed constructive criticism that will help improve the quality of each project plan.

Thank you for the opportunity to lead this USDA-ARS a scientific review panel.

Sincerely


Celina Gomez, Ph.D.

Assistant Professor, Environmental Horticulture Department
University of Florida
Email: cgomezv@ufl.edu

Office of Scientific Quality Review

The Office of Scientific Quality Review manages and implements the ARS project plan peer review (PPPR) functions for all intramural research projects including administering the peer review policies, processes and procedures. OSQR centrally coordinates and conducts the PPPR for project plans within the Office of National Programs during a 5-year cycle.

The OSQR staff is responsible for:

- setting the schedule of Project Plan Peer Review sessions
- Panel organization and composition (number of panels and the scientific disciplines needed)
- Distribution of project plans
- Reviewer instruction and panel orientation
- The distribution of review results to Areas, ONP, and other interested parties
- Notification to panelists of the Agency response to review recommendations
- *Ad hoc* or re-review of project plans
- Final certification of each Area project plan

Contact

Send all questions or comments about this Report to:

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