

INTRODUCTION:

The Science and Education Resources Development (SERD) Unit’s “Education Portfolio” overview was developed with broad input and great candor from its extremely dedicated national program leaders (NPLs). It is clear that the NPLs are passionate about providing effective and competent leadership to address SERD’s education vision of increasing the numbers of highly trained college graduates in the food and agricultural sciences who are globally experienced in applied research and extension, and are representative of America’s cultural and ethnic diversity. Minority populations are significantly underrepresented in higher education programs in the food and agricultural sciences; CSREES provides funding for this critical need of addressing human capital development in a very visible and focused process. Continuing to address this need through a distinct organizational unit rather than by diffusing attention to Minority Serving Institutions (MSIs) throughout the National Institute of Food and Agriculture (NIFA) is strongly recommended by the External Review Panel (hereafter referred to as the Panel). If the focus on MSIs is dispersed, then the impacts of enhancing diversity in the food and agricultural sciences will be lost or diminished significantly.

The following are responses to the *Portfolio Assessment Scorecard* which was provided to the Panel to assess the work of the CSREES Education Portfolio using the OMB Research and Development Evaluation Criteria of *relevance, quality, and performance*.

Section 1 - Relevance:

The Panel operationally defined relevance as the ability of the Agency to make high quality investments and to focus on real and critical issues that “will strengthen institutions that prepare for and meet the future workforce needs in the food and agricultural sciences.”

Panel Comments for Relevance:

Comments on Relevance:

- According to the National Program Leaders (NPLs), relevance is addressed by aligning educational programs into what they have identified as six “target areas.” They also felt that their programs are aligned with the vision and mission of SERD if programs fit within the six target areas.
- The Panel perceived that SERD’s individual program areas have relevance, but could be more interrelated, and more effectively utilized to bridge programs across the educational continuum (K-20) that the unit supports.
- The limited and passive means of securing stakeholder input described by the NPLs suggest that educational need areas may not be receiving the attention that SERD funding could potentially provide. Funding priorities may not be appropriately assessed due to limited external input.

- The portfolio indicates that SERD NPLs have the flexibility to target funds to address selected issues; greater focus should be placed on determining how the prioritization of critical issues impacts the agency’s effectiveness in addressing its mission.

Strengths:

- SERD has programmatic authority that spans the entire educational continuum, K-20, post baccalaureate degree programs and life-long learning.
- The NPLs are passionate about making their programs successful and are champions for MSIs; their dedication to these institutions is commendable.

Challenges:

- NPLs develop programs to fit into one or more of the six target areas. The Panel views the list of target areas as activities, not targets or program objectives. The six areas are the means of addressing the quality education and associated capacity building needed to address the agency’s education mission.

Recommendations:

- The Panel recommends that SERD assess the programmatic balance of funding within the portfolio. For example, limited funding is dedicated to K-12 initiatives, which is a critical aspect of recruiting and retaining students capable of matriculating college-level courses. Additionally, providing a quality educational experience includes emphasizing a globally relevant curriculum. The Panel has concerns that programs addressing K-12 or global relevancy are significantly underfunded; more balanced funding is needed for broader programmatic success.
- It is critical to actively engage stakeholders in assessing educational needs as well as evaluating the allocation of funds to address critical needs and emerging issues.

1.1 Scope

Indicator - Does the portfolio cover the range of work it should, given the mission of the agency and the portfolio and available resources? Are there significant programmatic gaps?

1.1 Panel Comments:

- Strategic goals are essential to clearly defining the range of work to be addressed in the future. Goal setting was not clearly evident; NPLs are disadvantaged by using activities (listed as target areas) rather than using defined strategic objectives to judge whether programmatic gaps exist. The scope of the education mission is broad, so it is critical to establish defined goals and associated desired outcomes. Compelling strategic goals are vital to establishing future direction and attracting increased funding.
- The lack of a commonly agreed upon definition of “education” adversely influences the agency’s ability to accurately assess program gaps.

Strengths:

- SERD’s education programs have been successful in building institutional strength, educational capacity and human capital.
- The programs provide funding to support the entire continuum of formal education.
- NPLs have worked to evaluate the range of initiatives funded within the specific program they manage.
- The Education Portfolio is inclusive of all levels of education, including life-long learning.
- The educational areas targeted are highly commendable and include strong focus on diversity in human capital development, teaching excellence, learning enhancement, capacity building, innovation, integration, and collaboration.

Challenges:

- Education is not explicitly defined as a part of either the USDA or CSREES strategic plans.
- Limited funding for K-12 programs is a concern and could be addressed in more than just secondary education programming or Ag in Classroom. All SERD programs could help address this priority area if RFAs were written to provide the incentive.
- CSREES has flexibility within the legislative authorities, but available flexibility has not been used to its fullest advantage.
- Gaps with building capacity and/or enhancing quality will persist if funding is inconsistent or short-lived.
- Capacity is broadly defined to address infrastructure, student learning, instructional quality, availability of current technology, updated equipment, degree programs, student numbers, and faculty. Thus, there is a very full range of capacity building that must be considered.

Recommendations:

- Establish a commonly agreed upon definition of the word “education.”
- Develop strategic goals to clearly define the range of work to be addressed in the future.
- Engage stakeholders in helping to establish clearly defined goals and desired outcomes.
- Enhance the USDA and CSREES strategic plans by including explicit educational goals.
- Explore ways to enhance K-12 education programs despite limited K-12 funding.
- Promote greater communication among NPLs within and outside of SERD to focus on how existing flexibility within programs might be used to address existing programmatic gaps.
- Continue strong efforts to focus on diversity and to recognize the importance of K-12 programs to influence the successful recruitment and retention of college students.

1.1 External Panel Score: 2

1.2 Focus

Indicator - Does the portfolio appropriately emphasize the most critical issues through its program design and resource allocation?

1.2 Panel Comments:

- Strategic goals are essential to identifying critical issues. The scope of the education mission is broad; strategic goals and desired outcomes have not been clearly defined. Stakeholders must be engaged to help identify key issues.
- Focus on critical issues may be constrained by available funds.

Strengths:

- Supporting MSIs and serving underrepresented populations are critical national issues that are being addressed in this portfolio.
- The issues emphasized in the portfolio are addressing some of the national education priorities.

Challenges:

- Availability and/or allocation of resources has created an imbalance in funding directed toward initiatives across the full continuum of education and has limited the ability to ensure global relevancy of the curricula.
- Perceptions of critical issues vary; stakeholder input on critical issues is not aggressively nor systematically sought.
- While the issues addressed in the portfolio are germane, other critical issues go unaddressed because they have not been clearly identified and/or defined; no purposeful process has been developed for identifying critical and/or emerging issues in education.
- Appropriate age levels of students may be ignored if critical issues are not properly identified.
- The portfolio may not demonstrate a full understanding and prioritization of critical issues and may therefore attempt to address more than available time and resources effectively allow.

Recommendations:

- Develop strategic goals and then critical issues can be successfully addressed.
- Establish a process to more effectively gather input on critical and emerging issues both across the Agency and within program areas; purposefully and actively engage appropriate stakeholders in providing input.
- Prioritize critical and emerging issues to make the most effective use of time and available resources.

1.2 External Panel Score: 2

1.3 Contemporary and/or Emerging Issues

Indicator - Does the portfolio address contemporary and/or emerging issues?

1.3 Panel Comments:

- The portfolio made no mention of new Farm Bill implications; did not reference recent national initiatives like the National Academies Academic Summit; and failed to address the mandates and priorities of the new federal administration.
- The Panel was struck by what appears to be a process of mostly insular thinking at SERD. The inward focus of SERD seems to limit the ability of NPLs to effectively identify the most critical contemporary and emerging issues.
- Current programs do not address the critical need to recruit and retain an appropriately diverse pool of faculty in the food and agricultural sciences programs at universities.

Strengths:

- The interdisciplinary nature of the programs and emphasis on developing partnerships are clear strengths of the portfolio.
- The portfolio is issue-driven and not discipline-driven; since no single discipline is addressed, grant programs have the flexibility to target common critical and emerging issues (recruitment, retention, student learning, quality teaching, etc).
- The portfolio recognizes a shift in demographic trends in the workforce and has programmatically attempted to address that shift.

Recommendations:

- Develop strategies for SERD to become more outwardly focused to effectively identify the most critical contemporary and emerging issues, and to consider Farm Bill implications, national initiatives and mandates/priorities of the new federal administration.
- Establish programs to recruit and retain a diverse pool of students **and faculty** in the food and agricultural sciences at universities.

1.3 External Panel Score: 2

1.4 Solicitation and/or receptiveness for Stakeholder Input

Indicator - Does portfolio staff actively solicit stakeholder input and is receptive to those who wish to give it?

1.4 Panel Comments:

- There is evidence that SERD recognizes the value of stakeholder input and has started to think about more purposeful ways to gather input.
- While some programs have implemented processes to gather stakeholder input, others have not fully engaged stakeholders; the Panel is concerned about the lack of consistency for gathering input across programs.

Strengths:

- Some program areas actively seek stakeholder input.
- The Panel was generally pleased with the diversity of the pool members, for example with the Secondary, Post secondary Educational Challenge (SPEC) grant program – personal experience.

Challenges:

- The process for gathering stakeholder input and the level of stakeholder participation is not well documented in the current system; it is not clear whether there is feedback to the stakeholders concerning recommendations.
- No purposeful process has been established for gathering stakeholder input for some programs.
- The current process of gathering input does not sufficiently include key people who address needs on a daily basis and could thus, come to the table to help identify the most critical contemporary and emerging issues in education or those of particular importance to MSIs.
- RFAs are often developed in isolation; stakeholders are not able to respond to changes in a timely manner.
- There is a perception that, in some instances, stakeholder input is met with defensiveness and lack of willingness to make changes.
- Because of extensive workloads and limited travel funds, it is perceived that SERD NPLs cannot make site-visits to the campuses that they serve. Also, small travel budgets limit opportunities for stakeholder input to be pursued.
- Diversity in the pool of stakeholders engaged in providing input is often too limited.
- It is perceived that all programs do not get the same level of attention/support from the NPLs.

Recommendations:

- Develop a formal process for gathering stakeholder input; document the level of stakeholder participation in the current system and the input provided.
- Develop ways to provide feedback to the stakeholders concerning their recommendations.
- The Panel recommends that stakeholder input be actively sought to directly influence consideration in the RFA development over a period (two-year cycle) so that major changes are not made year-to-year without getting stakeholder input and response before grant program changes are made.
- Encourage and support NPLs to more actively engage in professional meetings, particularly those that are inclusive of many disciplines of food and agriculture; efforts to assemble focus groups of stakeholders at these meetings would provide an opportunity for more meaningful input.
- Encourage and support NPLs to become more actively engaged with groups such as ACOP, AASCAR, etc., and to develop a closer relationship with NASULGC committees, HACU, AIHEC, NAS and other entities that focus on education as well as particular areas of needs of MSIs.

- Actively engage key people who address education needs on a daily basis to help identify the most critical contemporary and emerging issues in education.
- Develop strategies to enhance diversity in the pool of stakeholders.

1.4 External Panel Score: 1.5

1.5 Utilization of Stakeholder Input

Indicator - Is stakeholder input given appropriate attention in allocating resources, designing programs, and general decision making?

1.5 Panel Comments:

Information was not provided in the portfolio or in associated discussions to allow reasonable confidence in scoring this section. However, as comments in Section 1.4 indicate, there are clearly deficiencies that must be addressed. Stakeholder input is not aggressively sought and there are known examples of requests for change that took years to take effect.

More formal routes of collecting stakeholder input are strongly recommended. NPLs should be strongly encouraged and supported to become more actively engaged with ACOP, AASCAR, and similar groups, and should develop a closer relationship with NASULGC committees that focus on education.

The lack of a systematic process for gathering stakeholder input seriously limits the ability of NPLs to effectively allocate resources, design programs, and make programmatic decisions.

1.5 External Panel Score: 2

Section 2 – Quality

The Panel operationally defined quality as whether the portfolio focused on the “right things” that would contribute to significant outcomes (in contrast to outputs).

Panel Comments for Quality:

The determination of quality indicators is a challenge given the wide variety of activities supported in the Education Portfolio. This portfolio includes curriculum development, recruitment and retention of students, faculty professional development and infrastructure strengthening, such as the purchasing of land and construction of buildings and facilities. It therefore becomes important to recognize the long-term nature of the potential outcomes from this diversity of activities. The Panel also felt recognition must be given to the idea of capacity building for more than infrastructure, but for example educational programming and professional development for faculty.

2.1 Significance of Results

Indicator – Overall, does the portfolio produce results of significance and value to the mission of the agency?

2.1 Panel Comments:

Strengths:

- Clear anecdotal evidence indicates that the portfolio produces results of great significance and value to the mission of the agency.
- This portfolio offers opportunities for the partner institutions to expand or create new programs with the necessary facilities and equipment that are not offered through other competitive grant opportunities.
- The funding provided by this portfolio leverages local funds as seed money; in some cases the additional funds, i.e. for the facilities grant program, exceed the initial educational portfolio funding by multiple times.

Challenges:

- There needs to be better documentation of significance and value; this will help strengthen programs and justify funding need and relevance.
- Grant recipients are mildly accountable for documenting impacts and outcomes (according to comments of most NPLs), and consequently some grant recipients do not take accountability reporting seriously.
- Frequent turnover at some Minority Serving Institutions (MSIs) impedes institutional capacity to implement and fiscally manage grant programs consistently.
- There are no meaningful qualitative measures across the board within the portfolio and specific quantitative measures have only recently begun to be requested.

2.1 External Panel Score: 3

2.2 Usefulness and Utilization of Results

Indicator – Are portfolio results useful and are utilized by intended recipients and ultimate beneficiaries?

2.2 Panel Comments:

The consensus of the Panel is that there is not enough documentation to accurately assess the results produced under this portfolio. An additional difficulty is the definition of the intended recipients and ultimate beneficiaries given the program breadth. The ultimate beneficiary is society but the educational programs can be limited to the students pursuing a career objective. In addition, a facility program can be limited to students at a particular institution but documenting the utilization of the facility is not done consistently and reported to the Agency. Again, indicators are anecdotal and not quantitative, a shortcoming of this aspect of the portfolio.

Strengths:

- It is evident that SERD is beginning to transition to better documentation of outcomes and impacts of funded initiatives from grant recipients.
- Stakeholders can go to CRIS to obtain some information; though CRIS is imperfect, it still has utility and the CRIS report format for inputs for education has been revised.

Challenges:

- Better tools to document impacts and outcomes have to be developed.
- Outcomes are far reaching and as a result obtaining documentation of impacts will be tedious sometimes and oftentimes the most significant outcomes may occur after the program funding is concluded.
- Results are being utilized but it is difficult to access evidence of utilization. Projects that result in model curricula or lesson plans for Ag in the Classroom should be electronically available in a way that it is easily cross-referenced, can be searched for and found to be very user-friendly. Sometimes these types of program results are too localized to be widely used. Results are accessed but not consistently and the Agency should look for more effective ways to access results. If no one is mining the results, are the results getting out to a broad audience? (i.e., rather than expect teachers to search the web for the lesson plans of Ag in Classroom, develop a listserv of teachers that could be used to send monthly materials to enhance their teaching.)
- Results are easily found within the portfolio, but not impacts. For example, what is the long-term benefit of a new facility being developed or a new graduate-level educational program at a partner institution? It is difficult to get these success stories out and adapted as a model for additional higher education institutions since the impact is often local.

Recommendations:

- Increased advertising of many of the educational programs in the form of publications is a key need for reporting results to key audiences. Can the support units of the agency having the appropriate marketing expertise be of more assistance to SERD?
- Expand results reporting to be more than just the quantitative data.
- Documentation on facilities, for example, should clearly explain to outside reviewers/stakeholders the extent to which this money is heavily leveraged. The reporting from SERD oftentimes does not reflect that federal government funding may partially cover the construction of university buildings. Reporting must show how USDA funds are the impetus to obtaining matching dollars that are far more substantial.
- The Panel recommends that an Agency-wide education goal be developed, followed by the development of an Educational Portfolio strategic plan to operationalize and implement this goal. An integral part of this plan would be developing instructions on how to measure quality, as appropriate, for each of the portfolio activities.
- NPLs should develop significant values and measurable objectives for their programs to assist in defining the portfolio outcomes as metrics are developed so that each program will lead to achieving the Agency education goal.

- The Panel recommends that a FAEIS Expert Panel can be convened annually to review and advise FAEIS on the development of quantitative matrices for documenting outcomes. In developing an advisory board, include stakeholders to ensure data collected are obtainable considering university resources and constraints and to receive their valuable input on what data should be collected that would best define outcomes and impacts. Once this has been done, there should be training for project directors and their program directors to make certain the information to be gathered is clear to the recipient up-front as well as to inform them of the consequences for not submitting required data.
- As long as FAEIS remains a voluntary data submission process, it will be considered as an unreliable data collection source. However, it would be useful to discern why grantees/stakeholders do not submit the requested information or what are their complaints about the matrices, or to discern how to improve upon what is reported.
- In addition to an Expert Panel to assist FAEIS to develop quantitative matrices for documenting outcomes, this same expert panel members should also help the Education Portfolio with establishing qualitative matrices for documenting outcomes. The Panel recommends including individuals who are familiar with higher education or secondary education accreditation standards for example, or by drawing from types of information gathered from other federal agencies. The education portfolio should be asking the same questions about the educational programs it supports as accreditation bodies ask about the quality and outcomes of the education programs they evaluate, i.e. information on how teaching practices are enhanced, if and how student learning is strengthened, etc. Additionally, stakeholders must be involved as these quantitative matrices are developed to ensure data collected are obtainable considering the educational entities' resources and constraints.
- Once the quantitative and qualitative matrices that will be used to measure success are developed, this must be explicitly stated in the RFAs so that those submitting proposals are well informed about the requirement of data to be submitted annually to NPLs for documenting impacts and outcomes. In these RFAs, there must be explicit instructions for grantees to define assessment criteria for each project prior to start up; this would be much easier than trying to collect this information after the fact.
- The advisory input process through an expert panel to assist NPLs with program and post-award assessment should be periodic. Input should be aggressively sought, not passively requested which is the practice of having comments requested through the *Federal Register*.
- There is a continuum of assessment for the Education Portfolio; however, the Panel asks - are logic models the answer to document accomplishments and results? The capture of the continuum of education results as a shortcoming should be clearly acknowledged.
- To facilitate the workload of NPLs, given that this portfolio is targeting capacity building and outcomes that may occur after the funding of the grant, the Panel suggests offering small grants to support follow-up assessments or competitions for best follow-up assessments. The Panel suggests using site visits for both competitive and formula funding reviews with the intent of helping to develop Program Director skills in grants management and implementation including the reporting requirements. The site visits would assist the NPLs in gaining more insight about the

strengths, challenges of partner institutions and witness firsthand successful outcomes on campuses as a result of Education Portfolio funding.

2.2 External Panel Score: 2

2.3 Integration

Indicator – Where appropriate, does the portfolio integrate research, education, and extension in its funding activities?

2.3 Panel Comments:

Several of the Education portfolio programs described require integration and place high emphasis on multidisciplinary approaches. It is apparent that integration and interdisciplinary approaches are programming priorities even though the education program does not include legislation in reference to integration.

Strengths:

- There are major attempts to balance three mission areas (research, education and extension) within the portfolio

2.3 External Panel Score: 3

2.4 Interdisciplinary Balance

Indicator – Where appropriate, does the portfolio utilize an interdisciplinary approach in solving problems?

2.4 Panel Comments:

Interdisciplinary has become synonymous with all things progressive about education and research, not because of some simple philosophic belief in heterogeneity, but because of the scientific complexity of problems in the food and agricultural sciences currently under study. As a result, CSREES and many land-grant universities have committed themselves to fostering interdisciplinary scholarship.

Several of the Education portfolio programs described require integration and place high emphasis on multidisciplinary approaches. Also, the 2008 Farm Bill established AFRI which encourages interdisciplinary/multidisciplinary projects.

Strengths:

- There are major attempts to balance three mission areas (research, education and extension) within the portfolio
- This portfolio has a good mix of work with other disciplines

Recommendations:

- Since human capital development is the main thrust of the portfolio, it is recommended that students funded in doctoral programs should also be required to be trained and get experience in classroom teaching.

2.4 External Panel Score: 3

2.5 Alignment with Current State of Knowledge and Science and Use of Appropriate and/or Cutting Edge Methodology

Indicator – Does the portfolio use/build on the best and latest knowledge and science to carry its work? Do funded projects and programs utilize appropriate, creative, and/or cutting edge methodology?

2.5 Panel Comments:

In the federal proposal review process, well chosen panelists ultimately choose proposals that are innovative and current. This is inherent in the review process and in the RFA guidelines. It is the consensus that this occurs in the education proposal review programs; thus, the currency of science in the SERD programs related to this portfolio is maintained through input from well-chosen panelists. The one weakness, however, would be using the latest cutting edge knowledge in educational research outside of the agricultural sciences. Additionally, while distance education is still an understandably popular funding avenue, distance education is no longer cutting edge, but still very useful programmatically for a variety of purposes. It is critical to engage a broad spectrum of stakeholders to stay on top of cutting-edge programs and to engage and select proposal review panels that are representative of individuals with knowledge of cutting edge methodologies. Unless there are proposal review panelists with that knowledge or stakeholders involved significantly before RFAs are developed, the portfolio may not be well informed about what is novel and innovative.

Strengths:

- The proposal review process for awarding grants is inclusive of members from across the agricultural and natural resource sciences. This level of involvement is a means to assure the relevance and appropriateness of the Educational Portfolio programs to the most current needs of the nation.

Challenges:

- It must be stated again, the substantial stakeholder input and consequent utilization of ideas and suggested changes at all levels of SERD remain lacking.
- Aligning SERD's work with current state of science should be given more attention.

Recommendations:

- It is important to involve stakeholders in various parts of the grant process including RFA development when defining cutting edge methods in the various scientific and educational fields, followed by pre-award and post-award input.
- The Panel also recommends that the Agency convene stakeholder input sessions for beneficiaries, including students.
- NPLs should review the composition and process for proposal review panel invitations. The goal is to expand the formula or criteria for configuring a panel to ensure members are knowledgeable enough about the eligible institutions to make informed judgments while evaluating proposals and also be appropriately representative of science and education expertise.
- Personnel involved in SERD and CSREES projects may need retooling themselves about cutting edge technology and pedagogical advances. The Panel recommends that there be professional development activities for and/or mentorship for individuals who need to upgrade knowledge or skills in this area.
- Hold discussions outside the Agency to develop or revise RFAs to include more of the latest cutting edge programming opportunities in any new call for proposals. Concerted efforts should be made to ensure the ultimate end users/implementers of the Education Portfolio programs participate in defining the methodologies, foci, and priority areas for use on the ground as the RFAs are being developed.

2.5 External Panel Score: 2

Section 3 – Performance

The Panel operationally defined performance as whether or not the Agency did a good job, and whether or not the portfolio was comprehensive.

Panel Comments for Performance:

Strengths:

- The Panel recognized and acknowledges the commitment of the staff to programs and participants and the comprehensive nature of activities under the portfolio. However, the lack of permanent leadership, and the time lags in filling senior positions in some programs resulted in less robust program results.

Challenges:

- Programs and activities funded under CSREES do not have quantifiable metrics to adequately determine the success and shortfalls of activity results. Recipients must be required to collect and submit outcomes to NPLs in an acceptable standardized format and CSREES should assess the data for future program efforts. In addition, staff is too focused on grants activities with limited time or effort targeted to program enhancement.

Recommendations:

- The Panel recommends further utilizing the CSREES evaluation team in the RFA development phase and to support measuring program results. Submission of outcome data by grant recipients is essential to demonstrate program success; to enhance and build on successful programs; and to restructure failing programs.

3.1 Productivity

Indicator – Does the portfolio produce a substantial number of outputs and outcomes given available funding?

3.1 Panel Comments:

- The Panel noted repeated description of outcomes and outputs that are substantial but with little or no quantifiable data.
- There are outputs but not outcomes in many of the program reports. There is a need for outcomes with standardized metrics for RFAs and enforce RFA requirements for outcomes.
- Education RFAs require outcomes with standardized metrics.
- Long-term impacts are not addressed or are not analyzed once the grant ends. The use of prediction models to infer long-term impacts of terminated projects is recommended, but the staff noted that universities, particularly in the MSI community, may not have adequate personnel and other resources to do the necessary follow-up for expired grants
- Typically, a project director has the outcomes of activities, but it is unclear if at the end of a project, NPLs are provided with that information. As a standard requirement, RFAs should have measurement, assessment, and evaluation criteria for outcome data so that the appropriate information is collected. As a part of an RFA, outcomes assessment strategies should be proposed requiring grant recipients identify three or four outcomes that are to be achieved with quantifiable outcomes
- With RFA outcome requirements, is there follow-up to gather outcome information?
- Information on numbers of students graduating from the food and agricultural sciences has traditionally been gathered. The Panel recommended the need to systematically track students post graduation to determine job placement. This will allow NPLs to develop and adjust programs to meet USDA and academic needs.
- Collection of data should not be limited to students funded by CSREES and USDA. Where possible, all students with concentrations in food and agriculture regardless of public sector funding should be tracked to effectively determine the number of students in the field.
- All RFAs should clearly specify outcome expectations.

Recommendations:

- The Panel recommends that the Agency continue to work with its partners and key stakeholders in improving its ability to collect important outcomes and impact data via a system that respects local differences in needs and resources.

- RFAs should have measurement, assessment, and evaluation criteria for outcome data so that the appropriate information is collected. As a part of an RFA, outcomes assessment strategies should be suggested or have each grant recipient identify three or four outcomes and/or impacts that are expected to be achieved and the outcomes and/or impacts should be quantifiable.
- There must be accountability measures put in place for grant recipients that can be enforced so that there are follow-up requirements to gather outcome information.

3.1 External Panel Score: 2

3.2 Comprehensiveness of Work Produced

Indicator – Did the portfolio produce significant results across its entire scope?

3.2 Panel Comments:

The Education Portfolio covers a large number of projects that are within a very broad scope. The consensus of the Panel was that the portfolio was moderately comprehensive (quite broad, yet not deep enough). The chosen six target areas are guiding the RFA developments.

Strengths:

- The SERD education portfolio covered a large number of projects.
- In reviewing the target areas, the portfolio is active in each area.
- Considering limited funding availability, the NPLs are doing a good job addressing the many priority facets of the portfolio.
- A comprehensive K-20 approach is employed.

Challenges:

- Limited and inadequate funding is available to broadly maximize impacts.
- Finding time to be more of a National Program “Leader” than primarily a program “manager.”

Recommendations:

- Increased emphasis/funding needs to be placed on the K-12 portion of the total portfolio.
- Engage stakeholders to develop a plan for enhancing funding for a more comprehensive K-20 portfolio.

3.2 External Panel Score: 2.5

3.3 Accountability

Indicator – Were recipients of portfolio funding accountable for the funds they received, documenting use of funds and resulting accomplishments as directed?

3.3 Panel Comments:

- In reviewing the portfolio, it was noted that recipients do not report the number of students; difficult to get outcomes.
- NPLs do all of the tracking.
- Is there a way to do training for recipients on fiscal management at institutions? This has been requested; the response provided was to have quarterly conference calls. The Panel commented that quarterly conference calls were not the solution to this concern/need for the institutions.
- When CSREES had the funds, there was regular training; however, limited funding has limited this training.
- Is it possible to build the fiscal management into OneSolution? OneSolution could offer quarterly fiscal updates requirement.

Strengths:

- Development of dashboard is commendable and is a great asset for NPLs.

Challenges:

- Oftentimes, outcomes that are needed to document recipient accountability are not available until one or more years following grant termination, making outcomes collection and documentation of accountability difficult, if not impossible.
- In reviewing the portfolio, panelists noted that recipients do not report the number of students; making it difficult to get outcomes.
- Limited funds have limited training for grant recipients.
- Given the current funding and goal setting structures, the Panel regarded accountability as actually dispersed; yet, the partnership system itself puts the responsibility on the Agency.

Recommendations:

- Devise a comprehensive system for collection of post-project outcomes/impacts for purposes of accountability.
- In order to improve accountability, training for recipients on fiscal management at institutions has been requested, and quarterly conference calls have been utilized. The calls do not effectively meet the need, so the panel recommends devising a better method to accomplish the needed training.
- Consider utilizing OneSolution fiscal management. OneSolution could offer quarterly fiscal update requirements.
- NPLs apparently do all of the tracking. Additional staff is needed to assist with these efforts.

3.3 External Panel Score: 2

3.4 Program Leadership, Partnership and Guidance

Indicator – Does the agency provide strong program leadership, seek strong collaborations, and provide sound guidance to its partners for this portfolio?

3.4 Panel Comments:

- In order for the agency to provide strong program leadership, a sound organizational structure needs to be put in place that is supported by an engaged workforce. However, this is lacking at SERD. It is evident in the Portfolio Annual Report, in the Appendices, and in presentations by the NPLs. SERD should take active steps to address these organizational issues in order to drive for strong program leadership.
- The Panel believes that although every NPL is deeply involved in administering his/her program area, NPLs do not have time to lead, or become thought leaders for the programs that they manage.
- The Panel was disappointed by the lack of intra-department communication between the NPLs on ‘best practices’ and ‘promising strategies’ for program management, and general overall sharing of ideas and information.
- The Panel believes that SERD should do a better job at actively engaging input from its stakeholders. Panels could be set up to get broad and diverse input from its stakeholders and partners in developing the RFAs.
- The Panel is concerned by the fact that in certain areas of the portfolio, there is a cap on the number of applications an institution can submit. This is particularly distressing to an institution that may have more than one great project.

Strengths:

- SERD’s staff of NPLs should be commended for being able to manage a portfolio of over 700 active awards (at any one time). Ensuring adequate oversight over each and every one of these awards is commendable. It does require a significant amount of administrative time from RFA, through post-award administration.

Challenges:

- It appears that SERD is not appropriately staffed to support the program areas that it supports. There appears to be a lack of balance in terms of the workload across the staff in SERD.
- There does not appear to be a good amount of intra-department communication and coordination. This manifest itself in a lack of collaboration across NPLs.

Recommendations:

- The Panel recommends that SERD address its overall organizational structure and communications. There are definite opportunities to solicit input from the staff on developing streamlined and balanced workloads, which would drive staff engagement across the unit.

3.4 External Panel Score: 1.5

3.5 Program Management

Indicator – Does the agency manage the programs in this portfolio well, including appropriate use of resources, management of grant and formula processes, and documentation of results?

3.5 Panel Comments:

- The Panel believes that the NPLs do a good job at getting grant recipients to report on outputs. Some of them even get their grant recipients to report outcomes. However, documentation of results, outputs, and outcomes is not consistent across the unit.
- NPLs assist their grantees in drawing down funds and are competent in the formula processes.
- The Panel believes that the ‘Innovative grants program’ that was in place a couple of years ago, was a useful approach to supporting education, and recommends that it be brought into the forefront for discussion once again.
- The Panel believes that there is a great deal of educational knowledge that has been generated as a result of sustained funding over the years. However, the knowledge that has been generated needs to be actively disseminated in order for the knowledge to be applicable and enduring.
- Information generated through grant activities needs to be actively disseminated.
- There is a need for more efficient communication of grant opportunities.

Strengths:

- The Panel was impressed with the passion and commitment expressed by the NPLs on the programs that they oversee.
- NPLs are very effective at the overall process of awarding grant funds, following up to ensure that these funds are drawn down in time, and ensuring that grant outputs are being captured.
- NPLs are very knowledgeable of the legislation that authorizes how funds should be distributed/allocated and design their RFAs accordingly.

Challenges:

- There is no formal mechanism for identifying and reviewing the Agency’s priorities and successes.
- There is no formal structure for identifying critical needs.
- Information generated through grant activities needs to be actively and more efficiently disseminated.
- There is a need for more efficient communication of grant opportunities.

Recommendations:

- The Panel believes that SERD has an opportunity to strive to get better at program leadership. Currently, the NPLs are straddled with the administrative burden of managing their programs vs. providing leadership over the programs that they oversee. The overall effectiveness of the education portfolio can be enhanced by reducing the overall administrative burden on the NPLs, and enhancing their overall program leadership skills.

3.5 External Panel Score: 2

Section IV: External Panel Recommendations and the Portfolio's Responses

Introduction:

At no time in history is there more opportunity for expertise utilization in the food and agricultural sciences. Food and agricultural issues are at the core of the major problems facing the U.S. and the world. Educational programs are critically important, and should be treated as such. And this is one of the Panel's strongest recommendations, as reinforced most succinctly by former John F. Kennedy, "Our progress as a nation can be no swifter than our progress in education. The human mind is our fundamental resource."

SERD/CSREES needs to work closely with land-grant universities to assure the highest quality education, communicate its strengths and importance within the scientific community, and revitalize the land-grant mission of high quality service to the Nation.

Appendix A – External Panel Recommendations to the Agency

In response to directives from the Office of Management and Budget (OMB) of the President, CSREES implemented the Portfolio Review Expert Panel (PREP) process to systematically review its progress in achieving its mission. Since this process in 2003, several expert review panels have been convened and each has published a report offering recommendations and guidance. These external reviews occur on a rolling five-year basis. In the four off-years, an internal panel is assembled to examine how well CSREES is addressing the expert panel's recommendations. These internal reports are crafted to specifically address the issues raised for a particular portfolio. Electronic versions of both external and internal reviews for all portfolios are located on the Agency's website (http://www.csrees.usda.gov/about/strat_plan_portfolo.html).

Even though the expert reports were all written independent of one another on portfolios comprised of very different subject matter, several themes common to the set of review reports have emerged. The first five issues have been identified repeatedly by expert panels and require an agency-wide response. In addition, this first External Review Panel convened to review the education portfolio identified five additional issues that also require an Agency response. The Agency has taken a series to steps to effectively

respond to the five overarching issues and the five issues identified by the Education Expert Panel.

Issue 1: Getting Credit When Credit is Due

For the most part, panelists were complimentary when examples showing partnerships and leveraging of funds were used. However, panelists saw a strong need for CSREES to better assert itself and its name into the reporting process. Panelists believed that principal investigators who conduct the research, education, and extension activities funded by CSREES often do not highlight the contributions made by CSREES. Multiple panels reports suggested CSREES should better monitor reports of its funding and ensure that the agency is properly credited. Many panelists were unaware of the breadth of CSREES activities and believe their lack of knowledge is partly a result of CSREES not receiving credit in publications and other material made possible by CSREES funding.

Issue 2: Partnership with Universities

Panelists felt that the concept of partnership was not being presented adequately. Panelists saw a need for more detail to be made available. Panelists asked a number of questions revolving around long-term planning between the entities; they also asked how the CSREES mission and goals were being supported through its partnership with universities and vice versa.

Issue 3: National Program Leaders

Without exception, the portfolio review panels were complimentary of the work being done by the NPLs. They believe NPLs have significant responsibility, are passionate and committed. Given the significance of human capital development, there needs to be significant attention paid to credentialing and competency in leadership of the education portfolio. Panelists mentioned that often times there are gaps in the assignments given to NPLs. Those gaps leave holes in programmatic coverage.

In addition, the Panel felt that NPLs should develop significant values and objectives for their programs to assist in defining the portfolio outcomes as metrics are developed. To facilitate the workload of NPLs, given that this portfolio is targeting capacity building and outcomes that may occur after the funding of the grant, the Panel suggests offering small grants to support follow-up assessments or competitions for best follow-up assessments, site visits for both competitive and formula funding with the intent of helping with reporting and developing Program Director skills in grants administration, grants management and implementation including the reporting requirements. The site visits would assist the NPLs in gaining more insight about the strengths, challenges of partner institutions and see for themselves successful outcomes on campuses as a result of Education Portfolio funding.

The Panel was made aware of the differential salary grades of the National Education Program Leaders (NEPL) compared to program leaders in other areas. Education projects cover every technical/science disciplinary area as found in research and extension and the degree of management required increases in direct proportion to the number of disciplines. The Agency should recognize the complexity of the grant programs in the education portfolio and the NEPLs' supervisory leadership and management responsibilities.

Finally, the many NPLs felt that their purpose is to work with grants; however, the Panel felt that they should be change agents, thought leaders and visionaries for the Agency.

Issue 4: Program Evaluation

Panelists were complimentary in that they saw the creation of OPA and portfolio reviews as being the first steps towards more encompassing program evaluation work; however, they emphasized the need to see outcomes and often stated that the scores they gave were partially the result of their own personal experiences rather than specific program outcomes documented in the portfolios. In other words, they know first hand that CSREES is having an impact but would like to see more systematic and comprehensive documentation of this impact in the reports.

Issue 5: Logit Models

Panelists were consistently impressed with the logic models and the range of their potential applications. They expressed the desire to see the logic model process used by all projects funded by CSREES and hoped not only would NPLs continue to use them in their work but, also that those conducting the research, implementing extension activities, and developing education programs would begin to incorporate them into their work plans. The external panel, however, poses the question – “are logic models the answer to document accomplishments and results?”

Issue 6: Developing and Articulating a Well-Defined Education Goal

The education goal in the food and agricultural sciences is noticeably absent from the Department's and Agency's Strategic Plan. The Agency has education as a congressionally authorized function; however, an education goal has not been developed and articulated. The Panel recommends that an Agency education goal, and a corresponding Educational Portfolio Strategic Plan, be developed. An integral part of this plan would be developing instructions on how to measure quality, as appropriate, for each of the portfolio activities.

While the Panel applauds SERD's ambitious plans and efforts, the lack of priorities is quite obvious. As such, the Panel recommends that the future directions be prioritized to achieve and further enhance the goals of education in the food and agricultural sciences. There is an enormous need to prioritize programs and efforts without jeopardizing its ability to be flexible and responsive to the education needs of the food and agricultural sciences.

Finally, to gain high prominence in both the Agency and the Department, the education portfolio cannot be dispersed such that there are no definable education activities; education activities should not be subsumed in the much larger research and extension portfolios. However, there should be cross-cutting education programmatic planning and support functions that are coordinated and address the major food and agricultural functions and programs.

Issue 7: Support for Education Programs at Minority Serving Institutions

The major programs in the education portfolio are the primary source of funding for minority serving institutions (MSIs). Historically, MSIs have not been supported under the National Research Initiative (NRI) at comparable levels. There is no agency goal to address institutions and programs that serve populations traditionally underserved in the food and agricultural sciences. With the 2008 Farm Bill providing the opportunity for Education-Only projects to be supported in Agricultural and Food Research Initiative (AFRI), the Agency needs to identify actions and strategies that will ensure the education portfolio does not become subsumed and/or neglected. The Agency needs to become engaged in education strategic planning to address its education function; to develop a coherent policy that is clearly articulated, appropriately funded and clearly addresses the unique needs of MSIs; and to identify new funding for education areas that are not currently addressed by the statutes in SERD (e.g. preparing teachers/faculty to teach cutting edge science; develop on-the-go curricula in food and agriculture; scholarships for teachers to graduate with degrees in agriculture education; student training and teaching enhancements in primary and secondary education; research in evaluation education programs; etc.).

Issue 8: Agency Leadership and Management

Several key leadership administrative positions in education have been vacant for too long, a negative impact on the program quality as an extramural funding agency. The agency needs to make a significant effort to fill open, critical positions with permanent, well credentialed and competent personnel. In addition, if not already in place across agency portfolios, grant program leaders should, at a minimum be trained in federal grants administration, and include indicators of quality for management and compliance so that all program leaders are assessed without bias to education or research or extension mission.

Issue 9: Food and Agricultural Education Information System (FAEIS)

The Panel recommends that an Expert Panel be established to advise FAEIS on the development of quantitative matrices for documenting outcomes. In forming this expert panel, include stakeholders to ensure that the data collected are obtainable considering university resources and constraints and to receive their valuable input on what data should be collected that would best define outcomes and impacts. Once this has been done, there should be training for Project Directors and their program directors to make certain the information to be gathered is clear to the recipient up-front as well as to inform them of the consequences for not submitting required data. As long as FAEIS remains a voluntary data submission process, it will be considered as an unreliable data collection source. However, it would be useful to discern why grantees/stakeholders do not submit the requested information or what are the complaints about the matrices, or how to improve upon what is reported.

Issue 10: Quality and Performance Indicators for Education Programs

The determination of quality indicators is a challenge given the wide variety of activities supported in the Education Portfolio Quality and Performance Sections. Targets and indicators should be required in all education grant programs. Since no single set of indicators will meet all needs, the indicators should be appropriately based on program goals and objectives. In addition, there should also be overall organizational-wide performance measures for education as well as performance measures for education capacity in traditionally underserved groups.

As discussed in Issue #9, the FAEIS Expert Panel should also help the Education Portfolio with establishing qualitative matrices for documenting outcomes. The Panel recommends including individuals who are familiar with higher education or secondary education accreditation standards for example or by drawing from types of information gathered from other federal agencies. The Education Portfolio should be asking the same questions about the educational programs it supports as accreditation bodies ask about the quality and outcomes of the education programs they evaluate, i.e. information on how teaching practices are enhanced, if and how student learning is strengthened, etc. Additionally, stakeholders must be involved as these quantitative matrices are developed to ensure that the data collected are obtainable considering the educational entities' resources and constraints.

Appendix B - Education External Panel Members

Alton Thompson, a rural sociologist, served as Chairperson of the External Review Panel and is the Interim Provost and Vice Chancellor for Academic Affairs at North Carolina A&T State University.

Carolyn B. Brooks, a microbiologist and Professor in the School of Agricultural and Natural Sciences at the University of Maryland-Eastern Shore, is the Executive Director of the Association of 1890 Research Directors, Inc.

Don Cawthon, an expert in nutrient management and water quality, is the Dean of Agriculture and Human Sciences at Tarleton State University.

Fatma Huffman, a nutritionist, is a Professor and Chair of Dietetics and Nutrition in the Robert R. Stempel School of Public Health at Florida International University.

Linda Martin, an animal scientist, is the Associate Dean and Director of Academic Programs in the College of Food, Agricultural and Environmental Sciences at The Ohio State University.

John Phillips, a rural sociologist, is the Executive Director of First Americans Land Grant Consortium (FALCON).

Conrad Rebello, a food scientist, is the Program Manager of “Ideas-to-Market”- New Product Development at Pepperidge Farm.

Jacqueline Rousseau is a Director of the Educational Partnership Program and the Associate Director of Student Opportunities at the National Oceanic and Atmospheric Administration.

John Vreyens is the Director of International Programs in the College of Food, Agricultural and Natural Resources Sciences at the University of Minnesota.

Ron Worth is an Agriscience and Natural Resources educator and Cooperative education coordinator at Northeast Michigan Career and Technical Education center in Alpena, Michigan.