Report of the
Business Systems Review Subcommittee

April 3, 2012

Submitted by the Subcommittee Members:

Kathryn S. Schmoll (Co-Chair), Vice President, Finance and Administration
University Corporation for Atmospheric Research

Dr. Richard Seligman (Co-Chair), Associate Vice President for Research Administration,
California Institute of Technology

Dr. Steven Cohen, Executive Director of the Earth Institute at Columbia University

Brian Fairhurst, Associate Director for Management and Administration, National High
Magnetic Field Laboratory

Dr. Joan Fuller, Interim Director, Aerospace, Chemistry and Material Sciences, Air Force
Office of Science Research

Gail Strobel, Director, Program Support Services, UNAVCO, Inc.

<u>Report of the Business Systems Review Subcommittee</u>

Executive Summary

NSF has constituted a Subcommittee of the Business and Operations Advisory Committee to review the Business Systems Review (BSR) processes and make recommendations for improvement. The Large Facilities Office (LFO) prepared the charge and appointed subcommittee members in November 2011. The Subcommittee held several conference calls, received a collection of documents pertaining to the BSR program, and met on site at NSF on February 6 and 7, 2012. This report contains the results of the Subcommittee's deliberations concerning the questions posed in the charge. Our recommendations are below.

Background

NSF has been conducting BSRs for its major multi-user facilities since 2005. The purpose of the BSR is to examine the business practices of awardee institutions to assure that they meet applicable Federal and NSF requirements for stewardship of Federal funds. A second purpose is to provide business assistance to the awardee institution. Since the establishment of the BSR program, two Subcommittee reviews have been conducted, each focused on a set of specific questions. The specific focus of this review is an evaluation of the BSR program with particular attention to (1) assessing the progress of the BSR program since the 2008 Subcommittee review; (2) examining the better, cheaper, faster process; and (3) suggesting opportunities for strengthening the business assistance of the BSR.

Observations and Recommendations

1. Responsibility for carrying out the BSR Program has been assigned to the Large Facilities Office (LFO). Adequate resources have not been provided to LFO to enable the BSR Program to operate with maximum efficiency and effectiveness. This makes the attainment of its objectives impossible. If NSF intends to have a BSR Program for its large facilities, senior management must make a commitment to provide the support necessary for a program of this nature. Support means much more than dollars or people. Senior leadership must be clear and vocal about the importance of this program and the necessity for it to be conducted with strong support across the Foundation. In the absence of this support, the BSR Program will continue to struggle.

2. The active participation of experienced Subject Matter Experts (SMEs) is absolutely essential to the success of the BSR program. BSR Teams should include SMEs from within NSF as well as from the awardee community. If

contractors are to serve as SMEs, they must be of sufficient background, training, and experience to perform the duties of an experienced SME.

3. The new workflow process is a definite step in the right direction. However, the process requires further revision, not just more compression. A more focused consensus on the desired purposes and scope of BSRs is required. The BSR Program tries to "be all things to all people" and in so doing cannot possibly satisfy all of its constituents. The workflow process should continue to be refined so that it is more closely aligned with program goals and objectives.

4. "Business assistance" is identified as one of the two major purposes of the BSR Program. Yet, there doesn't seem to be a common understanding of just what this means. Using the BSR as a vehicle for providing business assistance is a laudable goal. If the BSR Program is to provide business assistance to large facilities, more attention needs to be given to that aspect of the program in the design and conduct of BSRs, e.g., what is the nature of the business assistance that should be provided; who is best positioned to provide business assistance as part of the BSR; how can the Large Facilities Workshop (LFW) serve as a vehicle for providing business assistance to the large facilities.

5. The BSR Report is both lengthy and redundant. Although the report presents an exceptionally thorough and detailed description of the BSR process that was followed, its length and level of detail are such that it is highly unlikely that the majority of the report will be read. If the primary audience is the large facility itself, the BSR Report should be limited to a summary of the findings of the review and also include information on the business assistance that has been provided. The report should also summarize further actions to be taken by the awardee and NSF to continue the improvement of the large facility's business practices.

6. The eight Core Business Systems are indeed comprehensive. Given the constraints that have been placed on the BSR process (cheaper, better, faster), the scoping function at the early stage of the BSR must result in a more focused, limited review of fewer business systems. The use of a risk-based approach is essential.

7. The BSR Guide is a very complete document that describes the BSR process in great detail. At first sight, it is quite daunting. The Guide needs to be clear that a "good" BSR need not review all business systems and that only the highest risk areas should be reviewed in a given BSR.

8. The scoping, content, and conduct of each BSR must take into account the nature of the recipient organization. BSRs cannot be conducted in a one-size-fits-all fashion. One would expect to see differences between a BSR conducted

at a large, comprehensive university and one that occurs at a single-purpose, independent research facility.

9. From the point of view of the recipient, the distinctions between a BSR and an audit are nearly impossible to discern or appreciate. Their similarities should be acknowledged and accepted as a "fact of life."

10. In the process of finalizing and closing a BSR, there should be a formal handoff from LFO to the Division of Acquisition and Cooperative Support (DACS), Program and others as appropriate so that the results of the BSR become part of the ongoing post-award monitoring of the large facility.

Charge to the Committee

The Subcommittee charge is set forth in four groups of questions which are addressed in the following section.

Charge No. 1: Assess the progress since the last Subcommittee Report, June, 2008.

Has the BSR Team coordinated the BSR activities with the Awardee's cognizant Federal Agency for audit at the earliest stages of planning a BSR?

- The BSR Team has made a good faith attempt to coordinate the BSR activities with the cognizant Federal audit agency of each recipient of a BSR. The responsiveness of the audit agencies to the BSR Team has been mixed. There appears to be some lack of clarity on the part of the audit agencies as to the purpose of the BSR and the manner in which it relates to the functions of the audit agency.

- Coordination with the cognizant Federal audit agency is a worthy activity, but is best done by the awardee institution which has already established working relationships with the audit agencies. The awardee may be in a better position to work directly with the audit agency to articulate the relationship between the BSR and cognizant agency audits.

Has NSF Senior Management made it a requirement for all BSRs to have the participation of experienced Subject Matter Experts (SMEs)?

- The participation of experienced SMEs in the BSRs has been a key element of the BSR program and strongly supported by both previous Subcommittee reviews. Nonetheless, it has not been made a **requirement**. The BSR team has struggled to obtain experienced SMEs within NSF, but has been unsuccessful because of the reluctance of some managers within NSF to release their staff for this important duty.

- If the BSR is an important tool for award management and monitoring, it should be "required" that staff from DACS, the Programs, and other NSF staff, as appropriate, participate in the BSR program. There is no doubt that it is part of their job, and a very important part.

Has the use of outside SMEs by BSRs been a practice as recommended in the 2008 report? Should this practice continue?

- Two previous Subcommittee reviews of the BSR program recommended the use of "outside SMEs" in the conduct of BSRs. The rationale was that using outside experts for a BSR is comparable to involvement of outside experts in the peer review process that is at the very heart of scientific or programmatic reviews throughout NSF. To date, use of "outside" SME's has been limited to three BSRs, with outside SMEs from another NSF large facility and another government agency.

- The BSR program has relied on the use of contractors to partially staff the SME positions on BSR Teams. For a variety of reasons, including training and skill levels of contractor personnel who have been made available, this has not always been satisfactory for either NSF or the awardee institutions.

Has NSF worked to provide coordination within the NSF and OIG to minimize the burden of duplicative reviews?

- The BSR Team and the OIG have made progress in coordinating their activities to the greatest possible extent.

- While the OIG has been open to working with the BSR Team, there are limits to the extent to which BSR and OIG activities can be coordinated. They serve different purposes and "march to different drummers."

- Efforts to minimize the burden of duplicative reviews should continue, not only between the NSF and OIG, but also with other government reviews and audits and with A-133 audits.

<u>Charge No. 2: Assess the new workflow process and pending changes to the BSR Guide 3.2</u>

Does the new workflow process address these requirements? Does it provide the framework to achieve a better and cheaper approach to BSRs?

- The new workflow represents a compressed timeline for completing a BSR and does shorten the process to approximately 4 months. However, a faster process does not necessarily mean the new schedule will result in a better or cheaper BSR process.

- The scoping component of the new process remains a critical component of the BSR and should continue to be based on inputs from both the awardee and relevant external audits to determine the scope of the BSR.   Appropriately scoping the BSR has the potential to result in a better, faster and cheaper process that has value to both the NSF and the awardee.

- NSF acknowledges the importance of the scoping process in conducting BSRs. A tension remains between conducting a total or complete BSR, i.e., one that addresses all eight "Core Functions," and conducting a BSR that may focus on only a limited number of the Core Functions and thereby run the risk of not covering "everything."

- The desk review step has the potential to optimize the use of NSF SMEs; however, it is very important that the SMEs continue to be involved in all aspects of the review including scoping, desk review, site visit and report preparation.   The SMEs should also continue to be available to the awardee to help address the BSR recommendations.

- The BSR reports are repetitive and too long to be useful. Rethinking the report as a short summary of findings versus documentation of the process would save BSR resources and make it more useful to awardees.

Are there any recommendations or suggestions that the new BSR Guide and workflow should address from the NSF and/or Awardee perspective?

- The new BSR process should clearly define the Roles and Responsibilities of each participant of the BSR process. NSF should consider enhancing the position descriptions of its internal SMEs to specifically include their requirement to support the BSR process.

- Whenever possible, the awardee's participation in all aspects of the BSR process should be enhanced, including scoping, to most efficiently focus the review, minimize duplication with other audits and enhance transparency.

- Given the resource limitations, the BSR process should increase its focus on the highest risk areas only and rely heavily on other audit reports as well as input from awardees and NSF program and DACS staff to identify potential problem areas.

- The scoping process should result in a smaller subset of Core Functions being addressed in each BSR. The BSR Guide and Report Template should reflect that the goal of the new BSR workflow is to review only the very highest risk areas and should not require all eight modules.

- The BSR Guide is too lengthy and includes details that are useful for background information but are not helpful in preparing for a targeted BSR.

- Handing off monitoring of corrective actions from the BSR team to NSF line management such as DACS would enhance efficiency of the BSR process.

For some of the Awardees this year will be the 2nd time around for a BSR. Are there some Core Functions that should be used from the past BSRs?

- The second cycle of the BSR should be based on a review of the prior BSR Report and should only address items of concern in that review and those aspects of the facility that have changed since the last BSR. The awardee should be encouraged to conduct self inspections and reaffirm compliance so that the 2nd BSR would focus on only those areas where an audit or self inspection has not occurred, or has revealed areas in need of further improvement.

Charge No 3: Identify opportunities for strengthening business assistance

As we approach the 2nd round of reviews for many Awardees and/or Large Facilities we see this as an opportunity to use some lessons learned to strengthen the business assistance. Are there some metrics we should use to assess the effectiveness of the BSR from the perspective of the Awardee and other stakeholders? Would a survey be a good means for example?

- NSF acknowledged that the business assistance aspect of the BSR is potentially very valuable. However, business assistance during or resulting from the BSRs has been limited or non-existent. It is not clear that there is a common understanding of what might constitute business assistance at NSF.

- In order to better prepare for BSRs and to identify the type of any desired business assistance, it may be useful for Awardees to perform a self-assessment (survey) and to determine any perceived deficiencies. Such an assessment may include a review of prior audits for findings, transactions that may have appreciable risk of triggering engagement by the OIG, management systems, structures and internal controls/approvals. A survey after the BSR process is completed could help determine areas where the BSR provided appropriate business assistance to address any deficiencies or opportunities.

- Analysis of prior BSRs may provide the basis for development of appropriate metrics and the adoption of best practices from other BSRs. The new BSR process and timeline increases the number of days for the scoping process by 20%. Similar to many planning tasks, judicious risk assessment during this phase may provide individualized plans and avoid the "overuse" of Awardee and other stakeholder resources during subsequent examination of low-risk, functional areas.

What are the barriers to providing business assistance while concurrently providing compliance oversight? What steps could be taken to overcome these barriers?

- NSF Staff suggested that a set group of NSF employees would be an ideal solution for SMEs to support the BSR process, rather than continuing the current approach of using NSF "volunteers" and contractors to staff BSR requirements. It is clear that existing NSF personnel have the appropriate expertise and training required for both oversight and some aspects of business assistance.

- NSF has made extensive use of contractors to assist in the BSR process. However, anecdotal evidence suggests that some of the contractors who have participated in BSRs have very limited experience and would be unlikely to provide the required level of business assistance. It is suggested that NSF further explore a

reallocation of funds used to hire contractors and, instead, use such funds to recruit additional, permanent NSF Staff.

- If a major function of the BSR program is to provide "business assistance" to the awardees, then experienced SMEs within NSF and the awardee community are essential. This is particularly true if business assistance is seen as a form of high level management consulting, not simply identifying an institution's shortcomings.

- As discussed above, NSF suggests that confidentiality may be an impediment to peer Awardee organizations providing business assistance and serving on BSR Teams. We believe that many Awardees would waive confidentiality to offer business assistance if offered the opportunity.

- While Best Practices are called out in the various BSR reports, there is no mechanism in place for a "clearinghouse" of such practices.

Does using the annual Facility Workshop as a venue for providing Awardees and Large Facilities with information and assistance an appropriate way to reach the Facilities? Is it enough? If not, what other ways would be best for providing business assistance?

- The Large Facilities Workshop (LFW) is focused on topical areas of general and specific interest to Awardees. In addition to formal presentations, participants have benefited from networking with peers from other facilities.

- In 2011, the LFW was preceded by a short workshop to discuss very specific areas of interest. The intent was to convene a relatively small group of mentors and interested participants to examine examples of successful activities and to discuss/perform various "hands-on" exercises. The workshop was well received.

- At the conclusion of the 2011 LFW, 27 ideas were collected as candidates for presentation/discussion at the 2012 LFW. A survey to likely LFW participants may be useful to prioritize these ideas and to explore other ways of providing business assistance.

- While the LFW is certainly useful, there is a need for individualized business assistance unique to the needs of a specific institution. NSF staff or peers from other awardees who are experienced in the areas where business assistance is needed could provide this.

Charge No. 4: Review a recent completed BSR report

Does the BSR report support an accurate and thorough review?

All members of the Subcommittee were provided access to a BSR report from a recent BSR. In general, the BSR Report process supports an accurate and thorough review.

- The accuracy of the report is heavily dependent on the quality of the information provided by the facility. This, in large part, is strongly influenced by the quality and clarity of the request for information.

- Reviewers' training on what to look for in the BSR process, as well as their own level of experience and quality of communication skills, plays an incredibly important role. The report does not note the level of experience of the contractors with the BSR, nor their respective specialties. One conclusion is that the reviewers are heavily dependent on the BSR guide, past BSRs, and the guidance of the NSF officers to perform their task.

- The structure of the report and the eight "functional core areas" are designed to comprehensively review the administrative management of a large facility. Some functions of management do seem to be under-emphasized including safety and administrative information technology systems. These areas are part of "General Management" and may need additional attention.

- In general, yes, the materials and documents provided by NSF for the BSR were appropriate. The BSR Guide is very thorough and serves as a detailed, perhaps too detailed, roadmap for navigating a BSR. It would be helpful if the Guide were more "user-friendly" for awardee staff at all levels.

Were the materials provided by the facility to NSF appropriate?

The Subcommittee did not review examples of materials provided by the facility to NSF due to time constraints.

Comment on the differences between the BSR Report and a "typical" audit report.

- The BSR report is focused on management systems and structures, with a view towards the entire organizational structure of the facility. Audits typically focus on the more micro level of organization structures, looking specifically at internal controls in transactions, and approval structures.

- In terms of documentation, the BSR report is primarily focused on policies and procedures, not on a systematic review of data, as performed during an audit, though the NSF BSR Team does do some limited sampling.

What aspects of the BSR Review are most beneficial to prepare the Awardee and Large Facility for an audit?

- The BSR process initiates an organizational review of policies and procedures to ensure compliance with OMB Circulars, e.g., A-21, A-110, A-122, A-133, and other federal requirements.

- In those cases where the facility is nested within a larger organization or University, one of the most beneficial parts of the BSR might be raising awareness of the facility's unique administrative requirements to the organization's senior leadership.

- The holistic and encompassing nature of the BSR ensures that areas that are often neglected in other reviews or targeted audits are evaluated.