

Division of Social & Economic Sciences 2010 Committee of Visitors (COV) Combined Report

For the COV Meeting held at NSF September 22-24, 2010



Includes COV Reports for the Disciplinary Programs of SES:

Decision, Risk & Management Sciences
Economics
Innovation & Organizational Sciences
Law and Social Science
Methodology, Measurement, and Statistics
Political Science
Science, Technology, and Society
Sociology

**CORE QUESTIONS and REPORT TEMPLATE
for
FY 2010 NSF COMMITTEE OF VISITOR (COV) REVIEWS**

Guidance to NSF Staff: This document includes the FY 2010 set of Core Questions and the COV Report Template for use by NSF staff when preparing and conducting COVs during FY 2010. Specific guidance for NSF staff describing the COV review process is described in Subchapter 300-Committee of Visitors Reviews (NSF Manual 1, Section VIII) that can be obtained at <www.inside.nsf.gov/od/oia/cov>.

NSF relies on the judgment of external experts to maintain high standards of program management, to provide advice for continuous improvement of NSF performance, and to ensure openness to the research and education community served by the Foundation. Committee of Visitor (COV) reviews provide NSF with external expert judgments in two areas: (1) assessments of the quality and integrity of program operations and program-level technical and managerial matters pertaining to proposal decisions; and (2) comments on how the results generated by awardees have contributed to the attainment of NSF's mission and strategic outcome goals.

Many of the Core Questions are derived from NSF performance goals and apply to the portfolio of activities represented in the program(s) under review. The program(s) under review may include several subactivities as well as NSF-wide activities. The directorate or division may instruct the COV to provide answers addressing a cluster or group of programs – a portfolio of activities integrated as a whole – or to provide answers specific to the subactivities of the program, with the latter requiring more time but providing more detailed information.

The Division or Directorate may choose to add questions relevant to the activities under review. NSF staff should work with the COV members in advance of the meeting to provide them with the report template, organized background materials, and to identify questions/goals that apply to the program(s) under review.

ARRA Addendum: If awards funded by the American Recovery and Reinvestment Act (ARRA) were made during the period of time under review by the COV, you will need to add guidance to the COV on review of these activities and some specific questions to the template that cover the ARRA award processes and the resulting portfolio of awards. While the COV need not review all ARRA awards, there should be ARRA awards included as part of the sample of awards, and there should be materials that explicitly describe the ARRA portfolio and its characteristics. The NSF Recovery Act Policies and Procedures can be found at:

<http://infoshare.nsf.gov/showFile/3370/2009RecoveryPoliciesProcedures1009.pdf>.

The NSF Funding Priorities are found in Section III.

Suggested sources of information for COVs to consider are provided for each item. As indicated, a resource for NSF staff preparing data for COVs is the Enterprise Information System (EIS) –Web COV module, which can be accessed by NSF staff only at <http://budg-eis-01/eisportal/default.aspx>. In addition, NSF staff preparing for the COV should consider other sources of information, as appropriate for the programs under review.

Guidance to the COV: The COV report should provide a balanced assessment of NSF's performance in two primary areas: (A) the integrity and efficiency of the *processes* related to proposal review; and (B) the quality of the *results* of NSF's investments that appear over time. The COV also explores the relationships between award decisions and program/NSF-wide goals in order to determine the likelihood that the portfolio will lead to the desired results in the future. Discussions leading to answers for Part A of the Core Questions will require study of confidential material such as declined proposals and reviewer comments. *COV reports should not contain confidential material or specific information about declined proposals.* Discussions leading to answers for Part B of the Core Questions will involve study of non-confidential material such as results of NSF-funded projects. The reports generated by COVs are used in assessing agency progress in order to meet government-wide performance reporting requirements, and are made available to the public. Since material from COV reports is used in NSF performance reports, the COV report may be subject to an audit.

ARRA Addendum: Awards funded by the American Recovery and Reinvestment Act (ARRA) were made during the period of time under review by the COV. We have included questions on the template that deal explicitly with this subset of the overall portfolio and the extent to which it met the objectives of the Act and the priorities articulated by the NSF Director. Key information regarding ARRA and NSF priorities as well as optional program-specific priorities will be provided to you.

We encourage COV members to provide comments to NSF on how to improve in all areas, as well as suggestions for the COV process, format, and questions. For past COV reports, please see <http://www.nsf.gov/od/oia/activities/cov/covs.jsp>.

**FY 2010 REPORT FOR
NSF COMMITTEES OF VISITORS (COVs)**

Date of COV: September 22 – 24, 2010
Program/Cluster/Section: All eight SES programs
Division: Social and Economics Sciences
Directorate: Social, Behavioral, and Economics Sciences
Number of actions reviewed: Awards: 328 projects Declinations: 253 projects Other: 0
Total number of actions within Program/Cluster/Division during period under review: Awards: 1346 projects Declinations: 3437 projects Other: 1079
Manner in which reviewed actions were selected: Only competitive proposals were considered. Continuous grants and supplements were not considered. 10 awards and 10 declines from each of the three fiscal years (60 actions total) were randomly selected for each program and provided to the COV members for review. Additional selection methods varied within each program. COV members were permitted to request additional proposals.

Note:

All eight SES programs were evaluated concurrently on September 22-24, 2010. This is a combined report consisting of all of the disciplinary COV reports submitted for each program.

SES Advisory Members on 2010 COV

John King, Ph.D., Chair
Christopher Achen, Ph.D. , Ph.D.
Ernst Berndt, Ph.D.

SES Committee of Visitors 2010

Decision, Risk, and Management Sciences Program

Linda Skitka, Ph.D.
Frank Yates, Ph.D.
Daniel Houser, Ph.D.

Economics Program

Katharine Abraham, Ph.D.
Jennifer Reinganum, Ph.D.
David Romer, Ph.D.

Innovation and Organizational Sciences Program

Richard Burton, Ph.D.
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Pamela Tolbert, Ph.D.

Law and Social Sciences Program

Paul Walhbeck, Ph.D.
Herbert M. Kritzer, Ph.D.

Doris Marie Provine, Ph.D.

Measurement, Methodology, and Statistics Program

Daniel Nagin, Ph.D.

Judith Tanur, Ph.D.

Marc Armstrong, Ph.D.

Political Science Program

Janet Box-Steffensmeier, Ph.D.

Margaret Levi, Ph.D.

Kelly Kadera, Ph.D.

Science, Technology, and Society Program

Bruce Seely, Ph.D.

Miriam Solomon, Ph.D.

Susan Bell, Ph.D.

Sociology Program

John Logan, Ph.D.

Joane Nagel, Ph.D.

Milagros Peña, Ph.D.

SUMMARY REPORT FROM
SBE ADVISORY COMMITTEE MEMBERS ON THE SES COV

John Leslie King (Chair)
Christopher Achen
Ernst Berndt

Background

Three members of the Advisory Committee (AC) of the Social, Behavioral and Economic Sciences (SBE) Directorate participated in the Committee of Visitors (COV) meeting for the Social and Economic Sciences (SES) Division, held at NSF September 22-24, 2010. They were part of a group of 30 scholars working in teams conducting COV reviews for each of eight SES programs: Decision, Risk and Management Sciences (DRMS); Economics (Econ); Innovation and Organizational Sciences (IOS); Law and Social Science (L&SS); Methodology, Measurement and Statistics (MMS); Political Science (PoliSci); Science, Technology, and Society (STS); and Sociology (Socio). The three members from the SBE AC worked among the program COV groups from September 22-24, read the reports of those groups, and produced this report between October 1 and 12. The report has been reviewed by all members of the SES COV.

This report does not recapitulate individual program COV reports, each of which constitutes a stand-alone document for use by program, division and directorate leadership. This report provides an overall assessment of the SES Division, grounded in the program COV reports, deliberations among program COV members, and discussions among the three SBE AC members, the leadership of the SES Division, and the leadership of the SBE Directorate.

Overall Assessment

According to the Charge to the Committee of Visitors for this assignment, this COV is to:

- Assess the quality and integrity of operations, including technical and managerial matters pertaining to proposal recommendations; and
- Comment on how the outputs and outcomes generated by awardees have contributed to the attainment of NSF's mission and strategic goals.

The SES Division solicits and reviews proposals, makes research awards that are likely to produce useful results, and works in support of NSF goals such as broadening participation in scholarly research. These are covered in the questions provided in parts A.1 through A.4 of the template given to each program COV. Table 1 summarizes the results of this effort. The COV also assesses the SES Division's performance toward the goal of producing knowledge beneficial to science and the national welfare. This is addressed through answers to questions in parts B and C of the template, as well as commentary accompanying the overall reports and discussions among program COV members, the SBE AC COV members, and the SES and SBE staff during the COV process.

	Econ	DRMS	IOS	MMS	STS	L&SS	PoliSci	Socio
Part A.1								
1	Y	Y	Y	Y	Y	Y	Y	Y
2	Y	Y1	Y	Y1	Y	Y1	Y	Y
3	Y	Y	Y	Y1	Y	Y	Y	Y
4	Y	N1	Y	Y	Y	Y1	Y	Y
5	Y	Y	Y	Y	Y	Y	Y	Y
6	Y	C	Y	Y	Y	Y1	Y	Y
7	Y	Y	Y	Y	Y	Y	Y	Y
8	C	NA	C	C	C	C	C	NA
Part A.2								
1	Y	Y	Y	Y	Y	Y	Y	Y
2	Y	C	Y	Y	Y	Y1	Y	Y
3	Y	Y	Y	Y	Y	Y	Y	Y
4	NC	NA	C	NC	C	NC	NC	C
Part A.3								
1	Y	Y	Y	C	Y	Y	Y	Y
2	Y	Y	Y	Y	Y	Y	Y	Y
3	Y	Y1	Y	Y	Y	Y	Y	Y
4	Y	Y	Y	Y	Y	Y	Y	Y
5	Y	Y	Y	Y	Y	Y	Y	Y
6	Y	Y	Y	Y	Y	Y	Y	Y
7	Y	Y	Y	Y	Y	Y	Y	Y
8	Y	C	Y	Y	Y	Y	Y	Y
9	Y	N	Y	Y	Y	Y	Y	Y
10	Y	Y	Y	Y	Y	Y	Y	Y
11	Y	N	Y	Y	Y1	Y	Y	Y
12	Y	Y	Y	Y	Y	Y	Y	Y
13	C	NA	C	NC	NC	NC	NC	NA
Part A.4								
1	C	C	C	C	C	C	C	C
2	C	C	C	C	C	C	C	C
3	C	C	C	C	C	C	NC	C
4	C	C	C	C	C	C	NC	C
5	C	C	NC	NC	NC	NC	C	C

- Y Yes/Appropriate
Y1 Yes/Appropriate w/exceptions
Y2 Often, not always
NA Not applicable
C Comment provided (NC is no comment)
* Commentary rather than specific answers to questions
- N No
N1 No, with exceptions
DNA Data Not Available

The program COV teams have found the SES Division to be doing an excellent job with respect to integrity and efficiency. There are minor areas of concern, but a careful reading of the comments provided by the program COV teams shows these exceptions to reflect either idiosyncratic characteristics of a given program (e.g., a challenge resulting from a program's special mandate), or general concerns raised in

one way or another by all programs (*e.g.*, a need for increases in funding in order to accomplish goals). None of the program COV teams expressed integrity or efficiency issues that warrant remedial attention. In all, the SES Division is doing an outstanding job with respect to efficiency and quality.

Issues of Concern

SES is doing things quite well, but it could be contributing more to the nation's welfare. The issues noted below are not easy to address. The COV raises them in the hope that they will be helpful in charting the future direction of the SES Division.

The Big Issue: Changing Circumstances

Rather than enumerate all the specific issues in a laundry-list fashion, the COV chooses to focus on the one big issue, namely the changing circumstances confronting the SES Division. We weave a set of specific issues into this discussion. Notably, all the issues raised in the 2007 COV remain issues in 2010, so we assume that those issues are being carried forward even if they are not mentioned specifically in this document. We focus on the SES Division, but we assume that many of these challenges extend to the SBE Directorate and perhaps to NSF overall.

The single dominating issue can be stated in one sentence: *The long-standing question of whether the SBE Sciences are important has been superseded by the question of how best to use the resources available for the SBE sciences in service to the nation.* The question of whether the SBE sciences are important to the NSF and to the nation has been answered unequivocally, and the answer is *yes*. Science and engineering disciplines in NSF and other federal funding agencies increasingly recognize that the issues they confront require expertise in the human sciences as represented in SBE. This is a significant change from an era when the very legitimacy of the SBE sciences was challenged. The SES sciences, as well as those of SBE broadly, must adjust to a new reality in which demand for the SBE sciences from *outside those sciences* grows more rapidly than the available resources. SBE continues to have the lowest level of funding among all the science directorates of NSF, and this COV echoes the plea of all the SBE-related COVs that have gone before for a significant increase in the SBE budget. Irrespective of whether such an increase is forthcoming, the SES, SBE and NSF leadership confront four serious challenges in this regard.

1. Workload. All the program-level COV teams for 2010 reiterated a concern raised by the 2007 SES COV: that professional staff resources are insufficient to deal with the workload. This is in addition to the observation made by every program-level COV that the professional staff attending to the programs is excellent. Most NSF funding goes directly to research and related activity, while only a small fraction goes to administration. This is a virtue, but it appears to have crossed the line into vice. Increased expectation of compliance regarding solicitations, proposals, awards, and post-award reviews has created overload. Monitoring and reporting requirements imposed for ARRA-funded projects have exacerbated this workload. The growing portfolio of cross-discipline and cross-directorate initiatives makes the situation worse. Even for the outstanding SES professionals, there are still only 24 hours in a day. It is impossible to increase workload more rapidly than staff resources on a sustained basis and maintain high quality. This is not mainly an issue of professional staff morale (although that has suffered). The quality of the science being supported is itself beginning to suffer from this problem.

As workload relative to staff resources increases, program officers need to work harder simply to keep up. NSF's tried-and-true model of "leading-by-following" is becoming threatened because professional staff do not have time to collect ideas from the community and synthesize them into new programmatic initiatives. The 2007 SES COV report said, "SES is already at a point where insufficient support for administration is hampering the nation's ability to get a full return from the research investment now being made in SES programs. This should be addressed immediately." This problem must be engaged aggressively before more serious damage is done. This is not a simple issue; the question of workload overall is conflated with other issues, such as setting the right balance between permanent and rotator staff within SES. This and similar challenges are *trade-offs* that have no simple solutions. Moreover, the relationship between administration and program size and complexity is probably non-linear: as program size and complexity grow, proportionately *more* administrative resources might be required to deal effectively with the challenges. NSF should not be caught in a trap where a ratio of administration to research established in earlier times strangles the quality of the science being supported today.

2. *Beyond Business-As-Usual.* Given the changing circumstances, SES cannot hope all will be well by focusing on business-as-usual. In fact, business-as-usual has not worked very well for some time. To take but one example, there is a long-standing tension between core disciplinary programs (*e.g.*, economics, political science, sociology) that constitute the foundation of SES, and cross-cutting programs (*e.g.*, DRMS, MMS, STS, IOS, L&SS) that bring expertise to bear on topics important to national welfare. This can easily break down into a squabble over whether SES should preference "traditional" curiosity-driven, investigator-initiated research or "newer" research in cross-cutting areas -- a squabble that can quickly turn into a cartoon fight between incumbency vs. emergence.

It is easy to find ideological justification for any side in such fights; it is more difficult to find evidence on which to base judgment on how best to proceed. Some of the program-level COV teams were frustrated that it was difficult to evaluate the extent and impact of traditional disciplinary work going on in cross-cutting programs. Others found it difficult to judge whether NSF's objectives of broader and deeper impact were being reached. Still others found it hard to tell if the efforts to broaden participation were successful. In short, there is seldom good information available to know whether business-as-usual is going well, and it is much more difficult to determine whether business-under-changing-circumstances is going well. The accounting and information systems at the NSF lack transparency, making virtually impossibly any tracking and comparisons of within and cross-disciplinary award outputs, outcomes and achievements. Yet, without such information it is virtually impossible to provide grounded evidence-based assessment or advice.

Of particular interest to the COV is the set of major surveys that NSF supports through SBE: the General Social Survey, the American National Election Study, and the Panel Study of Income Dynamics. These surveys have generated a loyal following of SES scholars from every state in the Union. Findings from analysis of data from these surveys have transformed our knowledge of American society, democracy, and the economy. The surveys also play a vital role in the teaching of undergraduates and in graduate student research projects. The surveys represent state-of-the-art in survey design, execution, and analysis. The COV commends NSF's support of these investments for their continuing scientific merit and their contribution to an informed democratic citizenry. They are also a particularly compelling example of efficiency and quality: the investment in these surveys provides great leverage in the social and economic sciences. At the same time, these surveys have been running for many years. They draw attention -- both praise and criticism -- in a time of great change. These surveys should be assessed

regularly to ensure they are engaged with the best scientific ideas, and that they continue to represent the leading edge of survey efficiency and quality.

3. Organization and Information. The SES Division is undergoing significant stress as a result of the changing circumstances discussed above. Not surprisingly, the nature of SES as an organization is facing changes that do not fit well within norms or social conventions, not to mention policies developed in an earlier era. The information infrastructure that supports the SES, and by extension the rest of SBE and NSF, has been evolving to fit the realities of the organization over time, but this infrastructure is by necessity designed to be backward-looking. As information infrastructure has evolved to support organizational activity, the NSF organization itself has been pushed by circumstances in new directions. There is a disconnect between backward-looking information infrastructure that is typically expensive and hard to implement, thus becoming “embedded” in the organization, and the need for the organization to evolve in new directions. The co-evolution of organization and information is a major challenge facing many organizations, and SES is but one. Unlike other organizations, however, SES has within its programs scientific expertise to address such questions.

The COV suggests that SES consider opening itself to serious study and experimentation with respect to the emerging relationship between information and organization. This could be pursued via a number of organizational mechanisms, including selective use of the SBE Advisory Committee, the COV process, workshops, grants, and “dear colleague” mechanisms. We believe there is considerable interest in and willingness by leading members of the SBE research community to participate in this self-study. We recognize that this suggestion is possibly in conflict with the comments on workload above, given that any efforts along these lines will require serious staff engagement during a period when the professional staff members are overloaded. Nevertheless, unless SES and SBE undertake such challenges, it seems doubtful that SES and SBE will be able to field the research that needs to be done in this area, or to help lead the NSF in these challenges. This is a major consideration, as we next discuss.

4. The Package. SES has much to contribute to the welfare of the nation, but that potential is under-leveraged. There is stress across the entire “package” of SES: disciplinary, multi-disciplinary, cross-cutting initiatives, etc. We have already mentioned insufficient funding for SES programs, a point made by previous COVs and still un-remediated. Insufficient funding makes it impossible to cover what each considers vital for its own interests, and makes attention to broader interests almost impossible. Yet, it seems the case that research serving the broader interest is the only way to secure additional funding over the long run. Recent years have seen the mobilization of all sciences, including those represented by SES, around concerns of national importance. This clearly fits within the NSF mandate. However, what NSF does best is basic science that creates the foundation for application of knowledge in the national interest. It is not either/or: NSF must do both, and SES must be part of that strategy. SES and SBE together need a sophisticated and refined strategy for articulating and acting on the interdependency of fundamental and practical knowledge. Addressing problems of national significance must also serve to build competence and knowledge in the core disciplines. This is the most serious challenge facing SES, and by extension SBE and NSF.

Decision, Risk and Management Sciences

**FY 2010 REPORT FOR
NSF COMMITTEES OF VISITORS (COVs)**

Date of COV: September 22 – 24, 2010
Program/Cluster/Section: Decision, Risk, and Management Sciences / Economics, Decision, and Management Sciences
Division: Social and Economics Sciences
Directorate: Social, Behavioral, and Economics Sciences
Number of actions reviewed: Awards: 30 projects Declinations: 30 projects Other: 0
Total number of actions within Program/Cluster/Division during period under review: Awards: 114 projects Declinations: 289 projects Other: 45
Manner in which reviewed actions were selected: Only competitive proposals were considered. Continuous grants and supplements were not considered. 10 awards and 10 declines from each of the three fiscal years (60 actions total) were randomly selected (proportional to the number of standard proposals, dissertation proposals, CAREER proposals, etc) and provided to the COV members for review. COV members were permitted to request additional proposals.

PART A. INTEGRITY AND EFFICIENCY OF THE PROGRAM’S PROCESSES AND MANAGEMENT

Briefly discuss and provide comments for *each* relevant aspect of the program's review process and management. Comments should be based on a review of proposal actions (awards, declinations, and withdrawals) that were *completed within the past three fiscal years*. Provide comments for *each* program being reviewed and for those questions that are relevant to the program under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

A.1 Questions about the quality and effectiveness of the program’s use of merit review process.

Provide comments in the space below the question. Discuss areas of concern in the space provided.

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE¹
<p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>Comments: The DRMS review process consists of individual (ad-hoc or external) reviews, followed by panel reviews. The use of both ad-hoc and panel reviews is desirable, since the panelists serve as additional reviewers, but can also evaluate the quality of the ad-hoc reviews (for example, if a reviewer misunderstood the purpose of a particular proposal), and have the benefit of being able to deliberate among themselves. Reviewers and panelists need to address two primary review criteria: scientific merit and broader impact. The panel then places each proposal in one of four categories:</p> <ul style="list-style-type: none"> (1) highly competitive (2) competitive (3) not competitive, with encouragement (PIs with proposals in this category are encouraged to submit a revised proposal if they believe they can address the major concerns raised in the panel summary and reviews) (4) not competitive <p>The panel also composes a Panel Summary for the PI that explains what the panel considered the key factors leading to its rating of the proposal. After the panel meeting, the program directors convene, decide the disposition of each proposal, and make their recommendations to the Division Director.</p>	<p>Yes</p>
<p>2. Are both merit review criteria addressed:</p> <ul style="list-style-type: none"> a) In individual reviews? Yes, usually b) In panel summaries? Always c) In Program Officer review analyses? Always <p>Comments: Intellectual merit is always addressed in reviewers, but broader impact is not always. More instruction to both PIs about how to address broader impact, and to reviewers about evaluating it, might be helpful.</p>	<p>Yes, with exceptions</p>

¹ If “Not Applicable” please explain why in the “Comments” section.

<p>3. Do the individual reviewers provide substantive comments to explain their assessment of the proposals?</p> <p>Comments: Reviewers usually provide substantive comments to explain their assessment of proposals, but there is considerable variability. Negative reviews tend to be more in depth than positive ones; it would be helpful if reviewers were explicitly encouraged to explain why strong proposals are strong. Perhaps all that needs to be done is add the question “Why does the proposal have or not have scientific merit?” would encourage more elaborate responses. For internal purposes, it might be useful to grade reviewers for review quality, to guide future decisions about who to invite for reviews. Our group wondered if there is a way for the review process to be structured for not only assessment, but to also serve a teaching function, especially for more junior applicants. The goal is not only assessment, but to mentor PIs in the art of grantsmanship.</p>	<p>Yes</p>
<p>4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)?</p> <p>Comments: The quality of the panel summaries were incredibly uneven, and not always particularly helpful. More effort needs to be given to providing feedback on what aspects of the reviewers’ comments weighed most heavily, especially in decisions to decline. Perhaps a basic template for the panel summary would be helpful, e.g., one that explicitly asked to list positives and negatives. Similar concerns were noted in the 2007 COV report.</p>	<p>No, with exceptions</p>
<p>5. Does the documentation in the jacket provide the rationale for the award/decline decision?</p> <p>(Note: Documentation in jacket usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), program officer review analysis, and staff diary notes.)</p> <p>The jackets –and especially the review analysis—provide clear rationales for the award/decline decision.</p> <p>During FY 2009, NSF permitted reversal of a declined decision for funding through ARRA for proposals declined after October 1, 2008. (NOTE: This question does not apply to programs for which the reversal decline option was not used.)</p> <p>i) Were the reversals of the decision to decline based on both the high quality* of the reviews received on the initial submission</p>	<p>Yes</p>

<p>and the lack of available funding at the time the origin was made?</p> <p>*Rated "Very Good or above" or the functional equivalent by review panels.</p> <p>There were no reversals in our sample with the exception of one ARRA. The ARRA decision was based on gathering supplementary information and additional review, and seemed justified.</p> <p>ii) Is documentation provided, including a revised Review Analysis, to support the award decisions? Yes.</p>	
<p>6. Does the documentation to PI provide the rationale for the award/decline decision?</p> <p>(Note: Documentation to PI usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), and, if not otherwise provided in the panel summary, an explanation from the program officer (written or telephoned with diary note in jacket) of the basis for a declination.)</p> <p>Comments: Often the information provided to PIs does not go much beyond the reviewers' comments. More could be done to provide PIs with additional feedback, especially for those whose proposals were declined and encouraged. The kinds of information provided in the Review Analyses (which are not shared with PIs) would be enormously helpful to in fact share with them to provide clearer guidance on what, exactly, needs to be revised to increase the odds of the proposal being successful upon resubmission. This kind of feedback is especially necessary when reviewer feedback is inconsistent, or when panel discussion identifies very concrete areas of concern. Perhaps a more specific action list should be provided to PIs in the form of program officer notes that provide a similar degree of feedback as is provided in the Review Analysis.</p>	<p>Could improve; not always</p>
<p>7. Is the time to decision appropriate?</p> <p>Note: Time to Decision --NSF Annual Performance Goal: For 70 percent of proposals, inform applicants about funding decisions within six months of proposal receipt or deadline or target date, whichever is later. The date of Division Director concurrence is used in determining the time to decision. Once the Division Director concurs, applicants may be informed that their</p>	<p>Yes</p>

<p>proposals have been declined or recommended for funding. The NSF-wide goal of 70 percent recognizes that the time to decision is appropriately greater than six months for some programs or some individual proposals.</p> <p>Comments: DRMS is well ahead of the NSF-wide goal of providing feedback on proposals within 6 months: between 85-88% met the target date of 6 months. We cannot judge the legitimacy of these targets, and whether earlier targets could be set for dissertation proposals, given that these are inherently time-constrained. We would like DRMS to explore ways to speed up the decision-time on dissertation proposals.</p>	
<p>8. Additional Comments</p> <p>a) Additional comments on the quality and effectiveness of the program’s use of merit review process.</p> <p>On the whole, we think the effectiveness of the program’s merit review process is very good. Our suggestions are motivated primarily by a desire to increase feedback to PIs to allow them clearer instruction to improve future proposals. The context of our comments should be taken within our firm belief and understanding that DRMS is already doing things very well.</p> <p>b) To what extent does the documentation in the jacket or otherwise available provide the rationale for use of ARRA funding?</p> <p>Adequate information was provided in the jacket.</p>	

A.2 Questions concerning the selection of reviewers. Provide comments in the space below the question. Discuss areas of concern in the space provided.

SELECTION OF REVIEWERS	YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE ²
1. Did the program make use of reviewers having appropriate expertise and/or qualifications?	Yes

² If “Not Applicable” please explain why in the “Comments” section.

<p>Comments:</p> <p>Panelist comments: The selection of panelists seems substantively appropriate and balanced across the areas the panel is likely to receive proposals in. Given the number of proposals DRMS considers that use survey research (e.g., those studying environmental risk), we recommend that more efforts be made to include more than one panelist with expertise in survey and non-experimental methods on the panel.</p> <p>Comments about reviewers: The selection of reviewers is based on a combination of both PI suggestion of inclusion/exclusion and discretion of the program directors, who work from personal knowledge, web searches for those with appropriate expertise, etc. On the whole, the reviewers have appropriate expertise and qualifications.</p>	
<p>2. Did the program use reviewers balanced with respect to characteristics such as geography, type of institution, and underrepresented groups?</p> <p>Note: Demographic data is self reported, with only about 25% of reviewers reporting this information.</p> <p>Comments: DRMS is consistent with NSF rates overall on recruiting women and disabled reviewers, but is low with respect minority representation. DRMS should explore why representation is low, and continue to strive to include more minorities in the review and panel process. Geographical representation seemed appropriate.</p>	<p>Could improve</p>
<p>3. Did the program recognize and resolve conflicts of interest when appropriate?</p> <p>Comments:</p> <p>The management of COIs seems very thorough and complete, and we cannot think of additional procedures that would be valuable in protecting against COIs. The honoraria COI strikes us as potentially too restricted, and we wonder if levels above some bar that exceeds usual levels of honoraria could be set to preclude unnecessary exclusion from participating in discussions or reviews of various proposals.</p>	<p>Yes</p>
<p>4. Additional comments on reviewer selection:</p>	

A.3 Questions concerning the resulting portfolio of awards under review. Provide comments in the space below the question. Discuss areas of concern in the space provided.

<p align="center">RESULTING PORTFOLIO OF AWARDS</p>	<p align="center">APPROPRIATE, NOT APPROPRIATE³, OR DATA NOT AVAILABLE</p>
<p>1. Overall quality of the research and/or education projects supported by the program.</p> <p>Comments: DRMS’s overall funding rate for FY 2007-2009 was about 28% (including 2009) and 25.5% not including FY 2009. The funding rate for regular research projects is 23% including 2009 (and 21% not including 2009), is lower than the mean for all merit reviewed proposals.</p> <p>Past investments of DRMS have paid off in significant new insights into behavioral economics, understanding cultural cognition, response to natural disasters and much more. In one among many examples, DRMS funded research shows just how ubiquitous the effects of behavioral economics principals like loss aversion and framing are. A number of economists and psychologists have speculated that one of the reasons people have difficulty exerting self-control to do things like save for the future is loss aversion - taking money out of one's pocket and putting it away for some vague "rainy day" feels like a loss and losses are painful. In collaboration with a bank in the Philippines, DRMS grantee Dean Karlan (0547898) and co-authors Nava Ashraf and Wesley Yin (published 2006 in the <i>Quarterly Journal of Economics</i>) tried to design a saving vehicle that would short-circuit this loss aversion induced problem by having savers commit to saving toward a given dollar goal but to also identify a specific purpose for the savings (e.g., to finance a Christmas celebration). Identifying the objective of the savings was intended to make the savings feel more like money paid in an exchange (dollars for goods) and not like a loss. This appears to have worked as, at least among women, the savings rates rose substantially.</p> <p>Previous results are highly exciting and current investments, based on our review of annual and final reports from our sample, look equally promising.</p>	<p>Yes</p>

³ If “Not Appropriate” please explain why in the “Comments” section.

<p>2. Does the program portfolio promote the integration of research and education?</p> <p>Comments: DRMS program support of DDRIGs, RUIs, and CAREERs all reflect targeted efforts to promote the integration of research and teaching. This goal is furthered by funding of post-doctoral, graduate and undergraduate students in standard and non-standard research proposals. During FY 2007-2009, DRMS supported 55 undergraduate, 174 graduate student, and 36 post-doctoral student position-years. Given the number of proposals DRMS funded (127), on average 0.5 undergraduate students, 1.5 graduate students, and 0.3 post-doctoral student-years are funded per proposal.</p> <p>Training of future scientists should be considered an essential educational mission, and DRMS is doing well in investing in CAREER awards, dissertation improvement grants, and in the number of graduate and undergraduate students supported by the grants it funds. We noticed that few RUIs, however, were funded in recent years and would like to encourage NSF to perhaps do more to solicit and encourage submissions from RUIs. Given the challenges researchers at RUIs have with teaching loads that may prevent grant development, perhaps NSF could implement competitive summer fellowships to support grant development.</p> <p>We also noted that post-doc support is increasing at the same time that support for graduate students is becoming relatively uneven. We think it would be useful to carefully consider the implications of these changes.</p>	<p>Yes</p>
<p>3. Are awards appropriate in size and duration for the scope of the projects?</p> <p>The DRMS portfolio of funded research for FY 2007-2009 consists of 114 distinct research projects where DRMS is the sole or lead program. Of these, 32 were Dissertation Improvement Grants and another 4 were SGERs. Dissertation Improvement Grants and SGERs tend to be short in duration, generally a year or less, and involve modest amounts of money, generally less than \$100,000. Standard research projects, in contrast, tend to run for two or three years (mean 2.4 years) with total budgets of about \$300,000 (mean \$309,850 per grant or \$122,176 per year).</p> <p>Given the size of these budgets we are surprised by the limited amounts of graduate student support for these projects. We would like to see budgets grow to the point where more than one graduate student could be supported on grants, both to do the work involved, but to also facilitate the training</p>	<p>Could improve</p>

<p>opportunities for a new generation of scholars. Grant durations seem standard and appropriate, though there might be some funding vehicle provided for more senior scholars with larger projects that resulted in standard awards with longer duration (we suggest five years).</p>	
<p>4. Does the overall program portfolio (including ARRA funded awards) have an appropriate balance of innovative/potentially transformative projects?</p> <p>NSF defines potentially transformative research as —research that generates ideas, discoveries, or tools that radically change our understanding of an important existing scientific or engineering concept or lead to the creation of a new paradigm or field of science or engineering. Such research is characterized by its challenge to current understanding or its pathway to new frontiers. Common characteristics of transformative research are that it is unexpected, has the potential to disrupt accepted theories and perspectives, has the potential for creating entirely new fields, and holds out the possibility of revolutionizing entire disciplines.</p> <p>DRMS projects can be characterized broadly as addressing individual decision making, strategic interaction, or risk perception and valuation. Among this great range of projects, some involve a single discipline, but many bring together scholars with remarkably diverse methodological skills and theoretical perspectives. The mix of awards include traditional projects that produce significant new knowledge and methods by building upon and extending existing theories, and also risky projects that have transformative potential. As the history of science demonstrates, transformations usually do not emerge from the genius of a single scientist or the findings of a single project. Instead, transformations occur through a myriad of projects that bring new thinking and methods to an area of inquiry. DRMS is advancing transformations both through individual projects and through the entirety of its portfolio that produces scientific value beyond the sum of the worth of the individual projects.</p> <p>One important example of this is with respect to understanding risk perception, and how risk communications might be tailored to most effectively inform people regarding the nature of the risks they face. DRMS has supported a number of projects addressing this critically important question. Mozumder (0838683), for example, has examined how prior experience with hurricanes impacts evacuation decisions. Importantly, he finds that experiences in which forecasts turn out to be incorrectly dire do not result in large numbers of people failing to evacuate the next time dire forecasts occur; the "cry wolf" effect appears minimal. The Mozumder award was one of four projects that DRMS funded from the Communicating Hurricane Informaton solicitation</p>	<p>Yes</p>

<p>(http://www.nsf.gov/pubs/2008/nsf08551/nsf08551.htm) that DRMS co-sponsored with the National Oceanic and Atmospheric Administration and the Infrastructure Management and Extreme Events Program in the Engineering Directorate at NSF.</p> <p>It is worth reiterating that the DRMS portfolio has tremendous breadth, scope and quality. Some portions, like projects examining dual process theories of decision making, pertain to topics that are significant foci of one or more DRMS communities. Others, like the research examining decision making over the lifecycle, are driven by societal trends like the aging of the population. Still others, like much of the work involving fMRI and related scanning techniques, exploit new technologies and methods. Finally, there are small numbers of still more speculative projects involving novel inquiries into the nature of decision making or risk (e.g., John Alford and John Hibbing's (0721707) inquiry into the genetic basis and heritability of pro-social traits.)</p> <p>Overall, we are enthusiastically convinced that the overall program portfolio has an appropriate balance of innovative and potentially transformative projects:</p> <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of innovative/potentially transformative projects?</p> <p>The portfolio of projects funded through the American Recovery and Reinvestment Act (ARRA) mirrored the sorts of projects funded by the program as a whole. ARRA provided an opportunity to support well-established research themes and agendas like Tom Gilovich's dual process work and John Kagel's (0924764) work on learning by groups in comparison with individuals. At the other extreme, ARRA funds were used to support more speculative, but also potentially transformative projects like Sarah Brosnan's (0847351) CAREER award to study responses of non-human primates to inequitable outcomes and to Roy Perlis's (0952050) EAGER to examine genetic influences on moral judgments.</p> <p>We enthusiastically believe that the ARRA in our portfolio has considerable potential to be transformative, and indeed is already showing considerable fruit in publications in top-tier journals.</p>	<p>Yes</p>
<p>5. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Inter- and Multi- disciplinary projects? <p>DRMS, as an interdisciplinary program, does a great deal of co-funding both within the directorate of Social, Economic and Behavioral Sciences and with other directorates. During FY 2007-2009, 28% of the DRMS portfolio (all DRMS related proposals) were co-funded. Of that 28%, 12% of DRMS funds</p>	<p>Yes</p>

<p>go to programs within SES, 8% with programs in BCS and 8% with programs in other NSF directorates. Indeed, DRMS contributes \$4.20 million to other programs for proposals that involve DRMS work. DRMS also received \$4.66 million from other programs to help fund DRMS-lead projects. In total, although \$8.86 million is spent on cofunds for DRMS related work, only \$4.20 million is DRMS money. Therefore, using only DRMS funds, the program spent about 16% on co-reviewed proposals ($\\$4.20/(\\$4.20\text{mil}+\\$22.64\text{mil})$).</p> <p>DRMS co-funds most extensively with the Economics, Innovation and Organizational Sciences, Law and Social Sciences and Political Science within SES. In BCS, DRMS co-funds most extensively with Social Psychology and, consistent with burgeoning interest in interdisciplinary research involving neuroscience, has begun to co-fund regularly with the Cognitive Neuroscience program. Outside the SBE Directorate, DRMS co-funds most extensively with the Infrastructure Management and Extreme Events program within the Engineering Directorate on proposals dealing with disasters.</p> <p>In light of this, our view is that DRMS has an appropriate balance of inter- and multi-disciplinary projects: The projects portfolio, as discussed in the answer to question A3.4 above, is generally of interest and relevance to more than one traditional research discipline. It is clear that the ability of DRMS research to be of interest to multiple constituencies is one of its core strengths.</p>	
<p>6. Does the program portfolio have an appropriate balance considering, for example, award size, single and multiple investigator awards, or other characteristics as appropriate for the program?</p> <p>A multiple investigator award is one in which two or more investigators wish to work together on a unified research project. Investigators wishing to work together do not need to be located at the same institution. NSF awards multi-institution awards in one of two ways: as a single proposal, in which a single award is being requested (with sub-awards administered by the lead organization); or by collaborative proposals which involves different organizations making simultaneous submissions of proposals with the same project descriptions, but with separate budgets from each organization involved in the project. DRMS funds more multiple investigator awards compared to single investigator awards (73 versus 41, respectively). From FY 2007-2009, DRMS received a total of 253 project requests with multiple investigators and 150 project requests with single investigators.</p> <p>About 2/3 of the funded proposals to DRMS are multiple investigator awards. This level reflects the pool of proposals, and the multi- and interdisciplinary nature of project proposals to DRMS. Many of the projects require a broad</p>	<p>Yes</p>

<p>range of skill sets to accomplish, and having more investigators is often an asset. The distribution of awards to individual versus multi-investigators therefore seems appropriate given the nature of the field.</p> <p>As mentioned earlier, we would like to see greater funding for graduate student support, but not at the expense of total number of awards. The total number of awards given seems appropriate, though we would like to see grad student funding as a clear priority (as said before, we encourage a discussion regarding the trend toward increasing number of post-docs).</p>	
<p>7. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> Awards to new investigators? <p>NOTE: A new investigator is defined as an individual who has not served as the PI or co-PI on any award from NSF (with the exception of doctoral dissertation awards, graduate or postdoctoral fellowships, research planning grants, or conferences, symposia & workshop grants.)</p> <p>It is important to point out that DRMS supports junior scholars and new investigators in four ways:</p> <p>Standard grants with a junior scholar as the PI. Examples include awards to Maya Tamir (0920918) and Jacqueline MacDonald. (0922315)</p> <p>Standard grants involving a junior scholar as a Co-PI or post-doctoral fellow. Examples of the former include awards to Joshua Weller with Paul Slovic (0820585) and Tamar Kugler with Lisa Ordonez and Terry Connolly (0819780).</p> <p>Post-docs supported by DRMS funded grants include Alec Smith⁶² and Cendri Hutcherson (0851408).</p> <p>CAREER awards. During the COV period, DRMS made new CAREER awards to eight scholars, while continuing to support a number of CAREER scholars whose projects were funded before FY2007 but were not completed prior to 2007.</p> <p>Having said this, one place there is a clear, although unsurprising, discrepancy in funding rates is between projects with at least one new PI (i.e., PIs that have not been previously funded by NSF) and those projects submitted by PIs who have been previously funded by NSF. The mean funding rate for projects with at least one new PI is approximately 16 percentage points lower than that of projects submitted by only veteran PIs (24.2% vs. 40.0%). A similar trend is found NSF-wide, where proposals by new PIs have a mean funding rate</p>	<p>Yes</p>

<p>approximately 12% lower than proposals by veteran PIs, 21.1% vs. 32.7%, respectively. However, proposals with new PIs account for a majority of the submissions received by the program in the past three years (approximately 74%). DRMS received 298 project proposals with at least one new PI or Co-PI, and received 105 project proposals from prior PIs. DRMS subsequently awarded 72 projects with at least one new PI and 42 projects with only prior PIs.</p> <p>All considered, our view is that awards to new PIs seems to be at an appropriate level. An implication of the funding discrepancy, however, might be that junior people should be encouraged to submit proposals with more senior and experienced scholars when it makes sense to do so, and senior PIs might be encouraged to include junior collaborators. Perhaps a special funding vehicle to encourage submissions by scholars at different career-stages could be developed.</p> <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of awards to new investigators?</p> <p>Among the 13 ARRA funded proposals, 12 new PIs and Co-PIs were involved out of the total 25 PIs and Co-PIs funded (48% were new). As for the lead PI, 38.5% of the ARRA funded proposals involved a new lead PI (5 out of 13). Thus, the majority of ARRA funded proposals had new PIs or Co-PIs, which seems an appropriate balance.</p>	<p>Yes</p>
<p>8. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> Geographical distribution of Principal Investigators? <p>A majority of proposals received and awards made go to institutions in states with large numbers of Ph.D. granting institutions (e.g., New York, California, Pennsylvania, Massachusetts, and Texas). The correlation coefficient between number of proposals by state and number of Ph.D.s granted by state in 2008 is 0.90. States that fare particularly well in terms of overall funding rates (Illinois and Oregon) do so as a consequence of a concentration of researchers doing high quality work on individual decision making and group decision making at institutions in Illinois or a single research group (i.e., the Decision Science Institute in Oregon.)</p> <p>While the geographic funding is thus geographically uneven, it should be noted that the Experimental Program to Stimulate Competitive Research (EPSCoR) is designed to fulfill the Foundation's mandate to promote scientific progress nationwide. The EPSCoR program is directed at those jurisdictions that have historically received lesser amounts of NSF Research and Development (R&D) funding. In FY 2007-2008, twenty five states, the Commonwealth of Puerto Rico and the U.S. Virgin Islands were eligible to</p>	<p>Could Improve</p>

<p>participate. In FY 2009, the EPSCoR program added two more states (Iowa and Utah) to the jurisdiction. The EPSCoR program occasionally co-funds meritorious proposals from EPSCoR states with the DRMS program. The mean DRMS funding rate for proposals from EPSCoR states is about 10 percentage points less than non-EPSCoR states (19.3% vs. 28.9%) and comparable to the NSF-wide mean of 24.5%</p> <p>Thus, it appears that appropriate efforts are being made to increase funding to EPSCoR states and to provide more even geographic support.</p>	
<p>9. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Institutional types? <p>Data on the types of institutions that submitted proposals and received awards from DRMS reveals that a majority come from research-intensive schools and, to a lesser extent, other Ph.D. granting institutions. As might be expected, success rates are slightly higher than the DRMS mean funding rate in the former and slightly lower than mean in the latter.</p> <p>Overall, insufficient funding is provided to RUIs, no doubt due to the lack of submissions. Given RUIs compete for the same funds as being competed for by PhD level institutions and non-profit academic research centers, we wondered if money should not be specifically set aside for RUI research in an effort to allow students at RUIs greater involvement in research.</p>	No
<p>10. Does the program portfolio have an appropriate balance:</p> <ul style="list-style-type: none"> • Across disciplines and sub disciplines of the activity? <p>The breadth and balance of DRMS funded research is reflected in the range of topics covered in the DRMS Portfolio as discussed in our response to A3.4 above. Research topics range from examinations of fairness in primates, to errors in eyewitness identification among the elderly, to the contribution of social networks to sustainable agriculture. Broadly, one can categorize projects according to individual decision making, strategic interaction, or risk perception and valuation.</p> <p>In light of this we are satisfied that the balance across disciplines and sub disciplines is fully appropriate.</p>	Yes
<p>11. Does the program portfolio have appropriate participation of underrepresented groups?</p>	No

<p>With regard to gender, roughly 39% ((54+123)/459) of proposals submitted to DRMS have woman involvement (i.e., women PIs or co-PIs.) This percentage is higher than the 30% of proposals with woman involvement NSF-wide. Funding rates for these proposals are slightly higher than the overall DRMS funding rate (31% vs. 28% including FY 2009). The NSF-wide funding rate for proposals with woman involvement is 29%.</p> <p>Proposals with Minority Involvement include proposals for which either the PI or co-PI is a self-reported minority. While there is variability in the number of proposals with minority involvement per year, on average 9% ((7+34)/459) of proposals submitted to DRMS have minority involvement and the funding rate for these proposals across the three year span differs by about 11 percentage points from the DRMS proposals overall (17% versus 28%). NSF-wide 10% of proposals have minorities involved on average with a mean funding rate of 27%.</p> <p>Overall then, funding levels to women are slightly higher than the DRMS average (2%), whereas funding levels to minorities is 11% lower than DRMS proposals overall. The discrepancy in funding levels to minority PIs is a problem and must be investigated. The submission rate seems on par with NSF average, but is at the level of award status that the discrepancy occurs. A similar lack of success in funding proposals from minority serving institutions (1 out of 11 submitted) is alarming (see Fig. 21). Greater effort needs to be made to understand why this discrepancy is occurring and how to improve minority success rates. Part of a potential solution might include facilitating greater opportunities for collaboration – perhaps a “match-maker” program to help provide mentors/collaborators with experience in the art of grantsmanship.</p>	
<p>12. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports.</p> <p>The key relevant report is Investing in America’s Future: Strategic Plan, FY 2006-2011. As discussed beginning on page 5 of that report, the four major goals of NSF are discovery, learning, research infrastructure, and stewardship. We have covered how DRMS serves the discovery and learning/education goals of NSF in previous sections of this report in our comments on innovation and transformative knowledge, as well as training and mentorship (see especially sections A3.1-A3.11.)</p> <p>In terms of building infrastructure, two specific examples stand out. DRMS funded a series of six advanced training institutes on new methods and techniques for conducting research on behavioral decision making and</p>	<p>Yes.</p>

behavioral economics through the internet (0721126). DRMS also contributed to funding. The Workshop on the Concept of a National Hazard Vulnerability and Resiliency Observatory Network, the objectives of which were to develop a framework for long-term research on natural hazard vulnerability and resiliency, identify the core research themes and more specific research questions related to hazard vulnerability and resiliency, and identify critical data that should be collected and organized in order to enhance and facilitate research efforts for understanding and monitoring vulnerability and resiliency (0831115). This effort is contributing to inter-directorate discussions within NSF as well as inter-agency activities aimed at the creation of a resilience and vulnerability research network.

More generally, DRMS contributes to the infrastructure for scientific research by funding individual labs and PIs, who in turn provide opportunities for students others at their home universities and institutes. DRMS researchers disseminate their research findings widely in not only academic conferences and publications and also in the popular media. For example, CAREER grant recipient Sarah Brosnan (08473510) has produced research that has been noted by National Geographic, Scientific American, the Economist, BBC and NPR, among other outlets. Dr. Brosnan is not alone in achieving this level of research coverage, and indeed DRMS may well be leading the producer of NSF research with broad popular appeal and application in a host of settings.

13. Additional comments on the quality of the projects or the balance of the portfolio:

ARRA Specific Comments: Additional comments regarding the portfolio of ARRA awards addressing the NSF or program-specific priorities for ARRA funding?

According to the "National Science Foundation Agency Recovery Plan American Recovery and Reinvestment Act of 2009 (update May 2010) NSF's ARRA supported investments in Research and Related Activities were to:

- 1) Directly benefit researchers, post-docs, and graduate and undergraduate students in institutions of higher education and other organizations throughout the Nation.
- 2) Support highly rated research proposals that would otherwise have been declined for lack of funds.
- 3) Contribute to new job creation and reinvestment.

The 13 ARRA proposals DRMS funded with ARRA funds supported a total of a 25 PIs, 8 postdocs, 29 graduate students and 8 undergraduates. As noted earlier, the DRMS funding rate for 2007 and 2008 was approximately 25% whereas it was 32% in 2009. As such, some subset of the proposals funded under ARRA would not have been funded otherwise. Indeed, one of the funded proposals, Vancouver (0851764), had been declined in the Fall of 2009, and the decision reversed given the availability of ARRA funds.

A.4 Management of the program under review. Please comment on:

1. Management of the program.

Comments:

The program officers (Leland, O'Connor, and Meszaros) are incredibly hard working, knowledgeable, skilled, and experienced. They are very up-to-date on current trends in DRMS, and are respected and known scholars in their own right. Their skill sets are complementary, and they are an incredible asset to DRMS and NSF.

2. Responsiveness of the program to emerging research and education opportunities.

Comments:

DRMS is frequently at the forefront of emerging research trends, and is uniquely positioned to encourage innovative and transformative science. Among other things, DRMS has been particularly receptive to the integration of, for example, neuroscience with social and economic sciences and similar truly interdisciplinary efforts and advances.

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio.

Comments:

The program officers are clearly on top of developments and opportunities at NSF and elsewhere, which informs their own program priorities. They have developed a truly cutting-edge portfolio.

4. Responsiveness of program to previous COV comments and recommendations.

Comments:

We felt that the program officers' responses to previous COV comments and recommendations were measured, serious, and appropriate.

5. Additional comments on program management:

NSF is fortunate to have exceptionally strong program officers who complement each other so well. The team is experienced, each have their own scholarly areas of expertise, and it is incredibly beneficial to both NSF and DRMS to have this level of talent willing to devote their

time to serve as program officers.

PART B. RESULTS OF NSF INVESTMENTS

The NSF mission is to:

- promote the progress of science;
- advance national health, prosperity, and welfare; and
- secure the national defense.

To fulfill this mission, NSF has identified four strategic outcome goals: Discovery, Learning, Research Infrastructure, and Stewardship. The COV should look carefully at and comment on (1) noteworthy achievements based on NSF awards; (2) ways in which funded projects have collectively affected progress toward NSF’s mission and strategic outcome goals; and (3) expectations for future performance based on the current set of awards.

NSF investments produce results that appear over time. Consequently, the COV review may include consideration of significant impacts and advances that have developed since the previous COV review and are demonstrably linked to NSF investments, regardless of when the investments were made.

To assist the COV, NSF staff will provide award “highlights” as well as information about the program and its award portfolio as it relates to the three outcome goals of Discovery, Learning, and Research Infrastructure. The COV is not asked to review accomplishments under Stewardship, as that goal is represented by several annual performance goals and measures that are monitored by internal working groups that report to NSF senior management.

B. Please provide comments on the activity as it relates to NSF’s Strategic Outcome Goals. Provide examples of outcomes (“highlights”) as appropriate. Examples should reference the NSF award number, the Principal Investigator(s) names, and their institutions.

B.1 OUTCOME GOAL for Discovery: *“Foster research that will advance the frontier of knowledge, emphasizing areas of greatest opportunity and potential benefit and establishing the nation as a global leader in fundamental and transformational science and engineering.”*

Comments:

As summarized on pp. 23-29 of the report to the COV committee, DRMS supports a great range of projects. Some involve a single discipline, but many bring together scholars with remarkably diverse methodological skills and theoretical perspectives. The mix of awards include traditional projects that produce significant new knowledge and methods by building upon and extending existing theories, and also risky projects that have transformative potential. As the history of science demonstrates, transformations usually do not emerge from the genius of a single scientist or the findings of a single project. Instead, transformations occur through a myriad of projects that bring new thinking and methods to an area of inquiry. DRMS is advancing transformations both through individual projects

and through the entirety of its portfolio that produces scientific value beyond the sum of the worth of the individual projects.

Individual Decision Making

Studies of individual decision making and/or judgment comprise the largest category of DRMS awards. A significant amount of this research on individual decision making focuses on dual process models of the decision process in which the affective-intuitive system and the deliberative-cognitive system produce decisions. For example, Tom Gilovich (0820316) is examining the hypothesis that the match between people's experiences and the features they associate with intuition and with reason triggers the predominance of one system over the other. Another example is the work of Tamar Kugler, which explores the influence of fear and anger on risky choice and attitude toward risk (0819780).

Dual decision process models and the relative influence of affect-emotion versus cognition reason figure prominently in research on the nature of and changes in the decision process over the lifecycle, which is a significant research theme in the FY2007-2009 DRMS research portfolio. Funded researchers such as Kristin Lagatutta (0723375) are focusing on the development of decision processes from infancy and the process whereby children as young as four begin to make inferences regarding the likelihood of future events from past experience. Others such as Joshua Weller and Daniel Vastfjall (0922783) are examining how factors like stress, anticipation, and regret influence the process and outcomes of decisions as people move from adolescence to old age (0820585). Still others such as Elke Weber (0922743) are yoking dual process theory with cutting-edge tools like trans-cranial magnetic stimulation, functional magnetic resonance imaging (fMRI), and diffusion tensor imaging to advance understanding of risk attitudes among young children, adolescents, and adults. These scholars are focusing specifically on the marked tendency for adolescents to be disproportionately risk seeking. This research not only provides insight into the origins of the observed differences in risk attitude, but is also revealing a close neural relationship between attitudes toward risk and attitudes toward delay, preferences that have historically been treated as distinct and separable.

The portion of the DRMS research portfolio devoted to individual decision making also reflects a remarkable deepening and broadening of the area of inquiry -- a shift brought about in part by access to new tools. One example of deepening is Rick Jenison's (0820316) examination of the role of the amygdala in encoding risk and uncertainty. By recording single neuron activity in the human amygdala of patients undergoing surgical treatment for medically intractable epilepsy, he has found that amygdala neurons appear to encode a form of expected utility for gambles.. As yet another example of a deepening of research on individual decision making, Aldo Rustichini (0924896) is working on a model of individual choice that, consistent with economic theory, assumes a decision process that is axiomatically derived and satisfies optimality. Rustichini's model, however, makes testable predictions not only regarding choices, but also reaction times and neural activations.

The domain of inquiry reflected in decision-making projects also reflects a broadening of inquiry. Examples include Ralph Adolph's (0924896) study of the role of the unconscious in decision making, Colin Camerer's (085084) attempt to infer the private value of public goods from neural activity, and Josh Greene's (0821978) examination of the cognitive and affective components of moral decision making.

In addition to funding work exploring the nature of individual decision making, DRMS funds a number of projects that examine the consequences of what we have learned about decision making in real-world applied contexts. These projects are of immense practical importance to the extent that they take what we now know about decision making to shine a different light on or to formulate novel policies for addressing societal problems. Eldar Shafir and Sunil Mullainathan's (933497) inquiry into the possibility that deprivation may produce a self-reinforcing cycle of poverty through its negative impacts on the quality of decisions people make is an example of the former. Antonio Rangel's (0851408) examination of the neuroeconomics of self-control in the dieting population and Heather Royer's (0819804) inquiry into the use of incentives to promote exercise among employees are examples of basic research with close ties to policy applications.

Social Interactions

Another large category of research funded by DRMS focuses on examinations of the nature and determinants of social interactions. Some of these studies involve examinations of unexplored questions in game theory. For example, Dan Friedman (092503) is examining how people actually play "continuous games" (those for which there are infinite pure strategies but for which conditions hold to assure the existence of Nash equilibria). While the mathematics of these games has developed over decades, little is known about how people actually play them -- a glaring gap in our knowledge base given that situations like price or quantity setting or deciding when to stop doing something are accurately depicted as involving an infinite number of pure strategies. An additional benefit of this project is that Friedman will make the experimental platform developed to conduct the experiments publicly available so other researchers can also explore behavior in continuous games.

Several other projects on game theory examine how factors outside the scope of traditional game theory and, as such, viewed as "irrelevant," can nonetheless have profound impacts on players' choices and the outcomes of strategic interactions. Drawing from the behavioral decision literature of framing effects, social psychologist Susanne Abele (0744696) is examining how trivial relabeling of players' strategies can influence their play and the outcome achieved in games. She shows that obtaining desirable outcomes in coordination games is easier to achieve when obtaining the desirable outcome requires that both players choose the same strategy (or strategies assigned the same label) than when the desirable outcome requires that they choose strategies that do not share the same label. Economists like Yan Chen and colleagues (0720943), are examining how feelings of social identity or ostracism as developed in social psychology influence cooperation and coordination rates in games. They have learned that perceptions of shared group identity increase cooperation and coordination and that inducing participants to take the "out-group" member's perspective reduces the disparity in cooperation and coordination rates -- findings with implications for organizational settings.

A third class of projects examining social interactions explores the consequences of interaction with others in the context of learning. In prior DRMS-funded research, John Kagel and colleagues (0924764) found that teams placed in strategic settings learn much more rapidly than do individuals. In research funded in the FY2007-2009 period, they determined that the key to this finding is bi-lateral communications, the process of talking with others. Instructing individuals to talk out loud to themselves had a negligible effect. This research has implications for effective design in organizational settings.

Risk Perception, Communication, and Governance

A final broad class of research funded by DRMS in FY 2007-2009 concerns risk perception and communication and the role these and other factors do and/or should play in the formulation of policies on the part of organizations, industries, communities, and governmental bodies. At the micro-level much of the work in this area involves examinations of how risk perceptions form and evolve over time. DRMS funded research examining these questions in a variety of contexts. In November of 2008, DRMS awarded Bill Burns⁴⁹ a SGER to examine how people's attitudes and behavior in real-time emergencies (in this case, the financial crisis) change over time. Perceived risk with respect to retirement declined from September of 2008 to November of that year, held steady from November 08 through March of 09 and then declined from there. Experiences of negative emotion (e.g., anger and fear) exhibit a similar time course. Curiously, and unfortunately for the economic recovery, the percentage of respondents stating they were likely or very likely to postpone major purchases, visits to the doctor, and routine auto maintenance remained remarkably stable across surveys. In July of 2009 DRMS awarded Gretchen Chapman and colleagues (0924764) a SGER to conduct follow-on surveys examining the time course of risk perceptions associated with a different calamity, the H1N1 flu epidemic. They found that perceived risk of infection increases over time yet both interest in vaccination and engagement in precautionary behaviors declined over the same time period. Taken together, these sets of findings suggest the linkage between risk perceptions and protective behavior is often weak.

One explanation for the weak relationship between expressed concern and observed behavior in much DRMS research is that the linkage between concerns and behavior is simply more complex than we think. An alternative is that the processes tapped by asking questions about perceived risk and emotional states are simply unrelated to behaviors generated in the demanding context of everyday life. These possibilities are mirrored in what has been a long-standing tension in the literature on risk perception and decision making between the traditional approach in which well defined hypotheses are tested under controlled experimental conditions and the naturalistic approach in which researchers attempt to divine the nature of the decision process from observing actual decision makers in real-world high-stakes environments. In a novel application of simulator technology, Wai-Tat Fu (081984) is attempting to combine realism with control -- examining the effects of task-specific knowledge, time pressure, and workload on risk assessment performance of novice and expert pilots in a flight simulator.

Understanding the determinants of risk perception is an important question. So too is understanding how risk communications might be tailored to most effectively inform people regarding the nature of the risks they face. DRMS has supported a number of projects addressing this question. Mozumder (0838683) for example, has examined how prior experience with hurricanes impacts evacuation decisions. Importantly, he finds that experiences in which forecasts turn out to be incorrectly dire do not result in large numbers of people failing to evacuate the next time dire forecasts occur; the "cry wolf" effect appears minimal. The Mozumder award was one of four projects that DRMS funded from the Communicating Hurricane Information solicitation (<http://www.nsf.gov/pubs/2008/nsf08551/nsf08551.htm>) that DRMS co-sponsored with the National Oceanic and Atmospheric Administration and the Infrastructure Management and Extreme Events Program in the Engineering Directorate at NSF. A final sub-area of research loosely placed in the Risk category has to do with how people's perceptions of risk, the value of different outcomes, the uncertainty of outcomes, and their perceived fairness can be effectively represented and combined

to produce desirable social decisions. Robin Gregory (0725025) is studying how different ways of treating uncertainty beyond individual responses to technical descriptions of the information can facilitate better group decision making. Nathan Hultman and Simone Pulver (0851898) are examining what factors influence firms' willingness to participate in carbon markets. Finally, Marco Janssen (0748632) is attempting to identify what makes groups successful in changing their institutional rules in the face of new challenges involving common-pool resources.

Observations

The preceding paragraphs convey the breadth and character of the overall DRMS portfolio. Some portions, like projects examining dual process theories of decision making, pertain to topics that are significant foci of one or more DRMS communities. Others, like the research examining decision making over the lifecycle, are driven by societal trends like the aging of the population. Still others, like much of the work involving fMRI and related scanning techniques, exploit new technologies and methods. Finally, there are small numbers of still more speculative projects involving novel inquiries into the nature of decision making or risk, such as John Alford and John Hibbing's inquiry into the genetic basis and heritability of pro-social traits. In this study, the scholars tease apart the roles of genes, shared environment, and unique experiences by comparing the play in games of monozygotic twins, who share 100 percent of their genetic material and dizygotic twins, who share 50 percent of their genetic material.

The portfolio of projects funded through the American Recovery and Reinvestment Act (ARRA) mirrored the sorts of projects funded by the program as a whole. ARRA provided an opportunity to support well-established research themes and agendas like Tom Gilovich's dual process work and John Kagel's (0922323) work on learning by groups in comparison with individuals. At the other extreme, ARRA funds were used to support more speculative, but also potentially transformative, projects like Sarah Brosnan's (08473521) CAREER award to study responses of non-human primates to inequitable outcomes and to Roy Perlis's (0952050) EAGER to examine genetic influences on moral judgments.

B.2 OUTCOME GOAL for Learning: “*Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens.*”

Comments:

Among many efforts to disseminate knowledge related to DRMS funded research, a very recent example would be the book edited by Erwann Michel-Kerjan and Paul Slovic, “The Irrational Economist: Marking Decisions in a Dangerous World,” published in 2010. Many if not most of the chapters in this book report on research and scholars that were funded by DRMS. This book addresses what irrationality really means, and tackles head-on the issues affecting people when they need to make decisions in both everyday life, and also in the face of catastrophic including natural disasters, climate change, technological accidents, financial crises, and human malevolence. By distilling the best knowledge from decision sciences, behavioral economics, neuroscience, psychology, and management, this book reviews recent discoveries and thinking that may help policy makers and others avoid various errors in judgment.

In addition, DRMS has played a major role in shifting economic theory away from purely normative models, to focus more on building descriptively accurate assumptions about human behavior based on what we know about human psychology into models of economic behavior. Work in this new subfield, behavioral economics, has been increasingly disseminated in the publication of recent books designed to be accessible to lay audiences, such as Cass Sunstein's and Richard Thalers' book "Nudge," Dan Ariely's books, "Predictably Irrational," and "The Upside of Irrationality." Most of the authors of these books have been previously funded by DRMS, or rely heavily on summarizing research that has been funded by DRMS in their books. Malcolm Gladwell's book, "Blink," although written by a journalist rather than a scientist, similarly relied heavily on reporting research funded by DRMS to a popular audience.

In addition to giving science away to popular audiences, DRMS also funds a number of projects designed to educate specific audiences. For example, DRMS funded Michael Birnbaum and colleagues over a period of several years to provide workshops for academic scholars to increase general knowledge of internet-based tools that can be used to facilitate research (e.g., html, JAVA script, etc.). Increasingly, researchers are turning to the internet to facilitate computer-mediated data collection, or to find more appropriate subject populations for their research: by training scientists how to better use internet-based tools and resources, these workshops are helping to update researchers' skills and abilities to conduct cutting edge research.

Another good illustration of DRMS-funded broad education efforts is represented by the Symposium Exchange between the Society for Judgment and Decision Making and the Society for Medical Decision Making (Schwartz, 0817831). Representative members of SJDM offered a symposium at the 2008 annual meeting of SMDM in which they described decision behavior research (some of it funded by DRMS) with clear implications for decision making issues in medical practice. And at the "mirror" symposium at the 2008 annual meeting of SJDM, a parallel group of SMDM scholars presented work that highlighted the special decision problems that confront medical practitioners. The symposia were well attended and well received. For instance, the SMDM symposium received the highest ratings of all the 2008 SMDM sessions that carried continuing medical education credit for physician attendees. Both symposia were videorecorded and are available via the Internet to the general public.

Sarah Brosnan's research (08473510), funded recently by NSF, has also received widespread news attention and has educated a variety of audiences. For example, her work has recently been showcased by National Public Radio, the BBC, MSNBC, and in a number of popular magazines, including National Geographic, the Economist, and Scientific American. Her work has made important discoveries about the evolutionary origins of concerns about fairness by testing how primates (e.g. Capuchin monkeys) respond to inequitable allocations of desirable rewards. Jennifer Lerner's DRMS funded research was recently the topic of a NOVA episode on public television. Lerner studies how emotions affect financial decision making. The NOVA episode covered a new study she and her team are conducting that has revealed, among other things, how anger and sadness have very different effects on our economic choices, and how this work helps explain aspects of the recent economic meltdown. Irwin Levin's (xxxxxxx) work on making food choices that found that although parents may prefer nutritious foods for the entire family, their preference for healthy foods is about 50 percent weaker when they're selecting products for the kids, rather than for themselves. Parents give in at the grocery store—or before they even get there, in the case of Levin's study—

compromising their preferences based on what they believe their children will accept. This research was showcased in a number of blogs and newspapers. In summary, research that results from DRMS is frequently picked up by major news outlets for a host of reasons, and often because decision and risk are important problems people deal with in their everyday lives.

In other efforts to educate the public, DRMS provided the funding to create a new interdisciplinary research center at Columbia University, the primary goal of which is to conduct research on human responses to climate change and climate variability, as well as to improve communication and increased use of scientific information on climate variability and change, each of which has important implications for the dissemination of DRMS research to both policy makers and the public (0756845, 0820496).

Educational efforts by DRMS-funded researchers have extended beyond efforts to increase awareness of important decision principles and phenomena to students and other scholars. Particularly significantly, they have also been directed toward policy makers. A good example is provided by Elke Weber's (xxxxx) July 2009 Congressional briefing on environmental decision making. Weber carefully explained how various findings in decision research, including work funded by DRMS, offer good accounts for characteristics of human decision making which, in the aggregate, contribute significantly to degradation of the environment. In effect, Weber suggested that proposed legislation that has a good chance of being effective in better protecting the environment—as well as persuasive to legislators and the public—must accommodate such accounts. A concrete example concerned the effects of labeling carbon surcharges as “taxes” or “offsets.”

Ali Abbas was funded with a CAREER grant that focuses on constructing a multiattribute utility function to facilitate decision analysis. One aspect of this work is an explicit goal of using the research discoveries this project will yield to create a web-based decision support system to help with decision making. In addition, decision training will be provided to teens at the Juvenile Detention Center in Champaign County, IL, and will also help train a group of Teens, the Peer Ambassadors group, who will learn decision skills and teach it to teens of their same age at the Juvenile Center.

The portfolio of DRMS funded work involves a variety of scholars at different points in their careers. DRMS takes care to invest in our future by supporting outstanding work by junior as well senior scholars. DRMS supports junior scholars in four ways: (1) Standard grants with a junior scholar as the PI. Examples include awards to Maya Tamir (0920918) and Jacqueline MacDonald (0922315); (2) Standard grants involving a junior scholar as a Co-PI or post-doctoral fellow. Examples of the former include awards to Joshua Weller with Paul Slovic (0820585) and Tamar Kugler with Lisa Ordonez and Terry Connolly (0819780); (3) Post-docs supported by DRMS funded grants include Alec Smith (0850840) and Cendri Hutcherson (0851408); and (4) CAREER awards. During the COV period, DRMS made new CAREER awards to Rajagopal Raghunathan (0645553), John Anderies (0645789), Marco Janssen (0748632), Erin Baker (0745161), Xuanming Sun (0748327), Ali Abbas (0846417), Laurie Garrow (084675), and Sarah Brosnan (0847351). DRMS also continued to support a number of CAREER scholars whose projects were funded before FY2007 but were not completed prior to 2007.

Dissertation Improvement Grants. For FY2007-2009, DRMS funded Doctoral Dissertation

Improvement Grants. Examples include dissertations supervised by senior scholars such as Jay Russo (0717643, Cornell), Robin Keller (0823458, UC Irvine), and John Dickhaut (0820455, University of Minnesota). DRMS also invested in the future of the field by funding several activities aimed at community and research infrastructure building. In 2008 and again in 2009 DRMS funded an exchange of symposia between the annual meetings of the Society for Judgment and Decision Making and the Society for Medical Decision Making. The objective of these actions was to increase communication and dissemination of research between the basic sciences of judgment and decision making and the applied science of medical decision making (0817831). DRMS also contributed to ACES 2008: A Conference on Ecosystem Services. ACES 2008 brought together government, non-governmental organization, academia, tribal, and private sector leaders to advance the use of ecosystem services and related science in conservation, restoration, resource management, and development decisions (0912200).

B.3 OUTCOME GOAL for Research Infrastructure: “Build the nation’s research capability through critical investments in advanced instrumentation, facilities, cyberinfrastructure and experimental tools.”

Comments:

DRMS funded a series of six advanced training institutes on new methods and techniques for conducting research on behavioral decision making and behavioral economics through the internet (0721126) DRMS also contributed to funding The Workshop on the Concept of a National Hazard Vulnerability and Resiliency Observatory Network, the objectives of which were to develop a framework for long-term research on natural hazard vulnerability and resiliency, identify the core research themes and more specific research questions related to hazard vulnerability and resiliency, and identify critical data that should be collected and organized in order to enhance and facilitate research efforts for understanding and monitoring vulnerability and resiliency (0831115). This effort is contributing to inter-directorate discussions within NSF as well as inter-agency activities aimed at the creation of a resilience and vulnerability research network.

PART C. OTHER TOPICS

C.1. Please comment on any program areas in need of improvement or gaps (if any) within program areas.

As mentioned earlier, there are gaps in the degree of funding of minority PIs, minority serving institutions, and RUIs relative to NSF at large that need to be studied and better understood.

Areas of proposal review we emphatically would like to see addressed is to provide clearer feedback to decline and encourage proposals to help facilitate successful revisions or to know when it is wise not to

pursue a revision. The feedback provided is for the most part, not clear enough to direct revisions, and this lack of clarity is revealed in the generally very low success rate of resubmitted proposals, which do not perform any better and perhaps worse than new submissions (lower bound of approximately 18%).

We recognize there are some institutional barriers in implementation of providing the kind of feedback available in the Review Analyses, but we see this issue as a crucial one that should be redressed. The peer and panel review process serves not only to make up and down funding decisions, but to hopefully to also educate and inform scholars how to improve their science. The panel summaries do not adequately summarize the content of the panel discussions; they often fail miserably at doing so. Given reviews are often contradictory, they alone are not sufficient guidance for PIs to improve their. In contrast, the quality of the review analyses was outstanding—similar feedback should be provided to PIs, especially when a proposal is getting a decline and encourage. Program officers are much better prepared to grasp the full panel discussion and which parts of the discussion is relevant in making funding decisions. Moreover, the ultimate funding decision is in the program officers' hands. If there are concerns about the program directors accurately reporting the panel discussion, the primary reviewers could be asked to review feedback and offer suggestions before the feedback is finalized and given to PIs.

In terms of substantive gaps, one goal might be to begin to encourage proposals that propose increasingly realistic and sophisticated models of individual decision making, incorporating research in decision making, behavioral economics, neuroeconomics, and genetics. In essence, we envision agent computational platforms for social science policy analysis akin to wind tunnels in aeronautical engineering, that is, scale operating models of systems that can be subject to experimentation and testing. One can imagine a number of applications of this kind of research, ranging from simulated local markets to predict prices or foreclosure rates, or using historical cases to predict terrorist attacks or areas at risk for war.

We would also like to encourage more funding more proposals that study decision making motivated by real world decision making concerns. We recognize that DRMS has been a leader in funding research related to human understand and decision making around environmental issues, such as climate change. We would like to see additional real world decision making contexts studied as well, such as medical decision-making, policy decision making etc. People sometimes make colossal mistakes—decisions to go to war, police decisions to shoot, physician's decisions about diagnosis, whether to intervene in the economy—or even decisions about whom to marry. The goal of this research would be to provide greater insight into the source of mistakes as well as how to improve decision making in these phenomenally important contexts.

Another possibility would be to encourage proposals that exploit the vast amount of data readily available through government and other sources to ask theoretically oriented questions or to allow for descriptive discovery.

C.2. Please provide comments as appropriate on the program's performance in meeting program-specific goals and objectives that are not covered by the above questions.

To better serve programmatic goals of DRMS—which are quite broad—we would like to see DRMS program officers attending and holding sessions at a broader array of disciplinary conferences, such

as consumer research, Academy of Management, Society for Neuroeconomics, Society for the Enhancement of Behavioral Economics, the Society for Personality and Social Psychology, and the Society for Experimental Social Psychology (and other areas that we are failing to name) to encourage proposal submissions from these different constituency groups. Listserv announcements and requests for submissions to these various constituency groups would also be another area of outreach.

C.3. Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

See many of the suggestions and issues raised in C.1, which apply agency-wide (e.g., funding of minority PIs and RUIs, and providing PIs with clearer feedback on proposals). One theme here is the teaching role of the peer review process: one role of applying for a grant involves obtaining money to support research; when funding is not provided, the peer review process is also an opportunity to grow as scientists. When reviews provide conflicting feedback, having explicit feedback about how best to proceed would be helpful. Panel summaries vary tremendously in their clarity of feedback. Therefore, at present, there is often no way for declined PIs to reconcile inconsistent or conflicting opinions of reviewers, which do frequently exist.

We would like greater clarity and clearer guidance about how the PIs are supposed to write about, and how reviewers (including COV) should appraise the role of broader impacts of funded research.

Finally, one program-wide initiative that we think might move science forward in productive ways would be to have a special program developed for “adversarial research.” It is not uncommon for different labs, for example, to arrive at startling different conclusions. Adversarial research could be designed by bringing together representatives from the different labs/perspectives to design a consensually agreed upon set of studies or crucial experiments to make progress beyond the deadlock.

C.4. Please provide comments on any other issues the COV feels are relevant.

The DRMS COV consensus opinion is that the DRMS and its leadership team are top drawer, and are performing extremely well. To the extent that we have made recommendations in this report, they are directed at improving an already very strong program, that is operating at a very high level.

C.5. NSF would appreciate your comments on how to improve the COV review process, format and report template.

Program Specific Questions:

- 1. Now that you have built an appreciation of NSF and the DRMS program, your advice about how DRMS can best support this research community, what are the most important things we might do to catalyze advances, would be most appreciated.**

As mentioned in several sections of this report, we think the best things that DRMS can do to support (and continue to support) the research community it serves are to (a) strive to increase competitive submissions from minority PIs, investigators from institutions that primarily serve

minority populations, and RUIs, and (b) increase the degree to which the review process serves an educational function for PIs, and not only as a process that guides decisions to fund.

2. Our Assistant Director is keenly interested to know what might be “The Next Big Thing” in our various sciences. Do you have any comments or insights to offer us in this regard?

We identified a number of possible “next big things” in section C.1.

SIGNATURE BLOCK:

Dan Houser
Linda Skitka, Chair
Frank Yates

For the DRMS COV

Economics

**FY 2010 REPORT FOR
NSF COMMITTEES OF VISITORS (COVs)**

Date of COV: September 22-24, 2010
Program/Cluster/Section: Economics / Economics, Decision, and Management Sciences
Division: SES
Directorate: SBE
Number of actions reviewed: Awards: 31 projects Declinations: 33 projects Other: 0
Total number of actions within Program/Cluster/Division during period under review: Awards: 289 projects Declinations: 617 projects Other: 536
Manner in which reviewed actions were selected: Only competitive proposals were considered. Continuous grants and supplements were not considered. 10 awards and 10 declines from each of the three fiscal years (60 actions total) were randomly selected (proportional to the number of standard proposals, dissertation proposals, CAREER proposals, etc) and provided to the COV members for review. COV members were permitted to request additional proposals.

Executive Summary

Report of the Committee of Visitors for the Economics Program

The Economics Program continues to do an excellent job of soliciting, evaluating, and selecting projects for funding. The transition between permanent Program Directors appears to have gone smoothly. The number of reviews and the quality of reviewers are consistently high, and the review analyses written by the Program Directors are detailed and well-reasoned. The research funded by the program is of extremely high quality.

However, the administrative burden on the Program Directors and their staff is very high and the Program's funding budget is very tight. With respect to the administrative burden, we recommend that additional staff be provided to assist with the proposal review process. If hiring additional staff is not an option, we have made some suggestions about ways to streamline the proposal evaluation process. One suggestion that we do not endorse is reducing the number of rounds of proposal submission and review from two per year to one annual round. The research community values the flexibility over submission dates highly, and especially appreciates the ability to resubmit quickly in the event that a proposal is viewed as promising but failed to meet the Program's very high standards in a given round of proposal and review.

With respect to the budget for awards, real funding for the Economics Program is essentially unchanged from three decades ago, and there are many high quality proposals that the Program cannot fund. Thus, substantially increased funding would be highly desirable. However, given the current and likely future constraints, we agree with the Program Directors' decision to provide more grants with lower face value,

rather than spending a larger amount per grant. Of course, we also support the decision to award some quite large grants (e.g., for continuing data infrastructure and/or facilitating access to data).

The prospective payoff to basic economic research is enormous. Economic research has the potential to identify ways to significantly alleviate extreme poverty around the world; to reduce the chances of the recurrence of macroeconomic crises that can leave millions unemployed; to point to improved ways of investing in human capital and encouraging the adoption of innovations, and so lead to higher standards of living; and much more. The NSF clearly should be funding research by economists that contributes to our understanding of these issues and our ability to address them, and there may well be value in identifying key areas in which research is needed. Having said this, strong efforts to direct research into specific areas seem likely to be counterproductive. We believe that the dominant model of funding should be an open and eclectic evaluation of all types of research ideas. The proposal-driven model of funding has been extremely successful in the past – and the Economics Program specifically has an outstanding record of funding new areas of research – and we have every expectation that the opening up of new areas of research that address important societal concerns will be apparent in the submissions received by the Economics Program.

We are concerned that the allocation of funds in the Social and Economic Sciences Division (SES) – both between large interdisciplinary/multidisciplinary projects and the traditional discipline-based programs and among the traditional programs – does not appear to be based on a careful examination of the relative value of funds in different areas. Current procedures appear sometimes to involve the designation of significant funds for research in specific interdisciplinary/multidisciplinary topics without a process for carefully evaluating the quality of proposals in these areas relative to the quality of proposals in the permanent programs; further, relatively mechanical rules sometimes appear to be used to allocate incremental funds among the traditional programs. We are also concerned about the complexity and opacity of the SES budget, which is almost incomprehensible to outsiders and very difficult to understand even for insiders. Improvements in the allocation of funding could have a large payoff.

In our view, NSF should be taking steps both to ensure the appropriate assessment of projects' relative quality *ex ante* and to evaluate more rigorously the allocation of resources *ex post*. As an example of the former, rather than allocating a fixed amount of money to a specific interdisciplinary topic area, there could be a pot of money for which projects related to that topic area and other projects would compete. Solicitations should encourage projects on the stated topic, but the total amount of money awarded for projects on the topic should depend on the quality of the proposals received as compared to other submissions. As an example of the latter, the Committee of Visitors (COV) process could be restructured so that COVs are given the charge of examining all research within a discipline rather than focusing only on research funding decisions at the program level.

Similar concerns about the allocation of funds between interdisciplinary/multidisciplinary projects and the traditional programs and about the structure of the COV were raised by the previous two Economics COVs. We are not aware of significant steps having been taken to address them.

PART A. INTEGRITY AND EFFICIENCY OF THE PROGRAM'S PROCESSES AND MANAGEMENT

A.1 Questions about the quality and effectiveness of the program's use of merit review process.

<p>QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS</p>	<p>YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE</p>
<p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>For each standard proposal, the program directors request mail reviews from expert scholars in the specific research area. These scholars are identified by several methods: PI suggestions of reviewers whom they think are appropriate to review their projects; authors from references cited in a proposal, as well as authors cited in the references to other current and past proposals in the general topic area; scholars identified through Internet-based search tools, such as the Web of Science and Google Scholar; and, finally, the program directors' own familiarity with scholars in the scientific community. The goal is to select a fair, appropriate, and balanced set of reviewers. The program directors are encouraged to pursue affirmative action and EEO goals in the selection of reviewers. Reviewers include both junior and senior faculty, economists working in policy positions for government agencies, and scholars in other disciplines as appropriate.</p> <p>Dissertation proposals are generally not sent to outside reviewers, but are instead reviewed by three members of the Advisory Panel.</p> <p>Data on the mean number of reviews received on proposals submitted to Economics and also taken to panel during FY 2007 – 2009 were made available to the committee.</p> <p>The results demonstrate that proposals that are eventually declined receive (slightly) fewer reviews on average (7.7 for proposals that receive awards versus</p>	<p>YES</p>

7.5 for proposals that are declined). There are two possible explanations for this. First, proposals that are co-reviewed with another NSF program generally receive more reviews because there are two sets of panelist reviews; co-reviewed proposals are slightly more likely to be funded than ‘standard’ proposals. Second, reviewers are more likely to decline to review proposals that are obviously inadequate. Third, in the interests of reducing the burden on the reviewer community the Economics Program Directors are unlikely to send out multiple reminder requests for reviews on proposals that have already received several weak ratings from early reviewers.

In addition to providing a written evaluation of the proposal they receive, reviewers are asked to rank the proposal as Poor, Fair, Good, Very Good or Excellent. Program staff calculated an average review score by converting these scores to numeric values, with Poor = 1 and Excellent = 5. Not surprisingly, funded proposals have higher average reviewer ratings (4.4 for proposals receiving awards versus 3.1 for proposals that are declined).

The Economics program convenes a meeting in November and April of each year with respected economists who make up the program’s Advisory Panel.

The panelists meet at NSF’s Arlington offices to discuss the proposals. All proposals receive written reviews from at least two members of the advisory panel. Panelists are assigned to proposals by the Program Directors, who first ask panelists to identify the proposals they would (or would not) prefer to review. Conflicts of interest between panelists and PIs must be avoided in making these assignments. Panelists provide written reviews on all the proposals assigned to them using both NSF criteria. Just before the panel meets, all reviews are made available to all panelists, since they are unable to view other reviews prior to submitting their own.

During the meeting, the panel identifies what it considers the most important positive and negative features of each proposal, composes advice to the PI(s) about how their work might be improved, and evaluates the relative importance of the proposal compared with the other proposals in this round of competition. The comments and evaluations contained in the mail reviews are a vital component of this discussion. The panel places each proposal into one of three categories:

- highly competitive,
- competitive,
- not competitive.

The length of the panel discussion varies; a particularly weak (or strong) proposal may not be discussed at length if the panelists are confident that the written reviews are accurate evaluations of the proposal. Panel discussions are generally longer when reviews are more mixed. One panel member composes a “Panel Summary” for the PI(s) of a given proposal explaining the key factors that lead to the panel’s ranking.

After the Economics panel meeting, the Program Directors meet to decide which proposals to recommend for funding and formulate a “Review Analysis” for each

<p>proposal. These documents inform the Division Director as to the content of the proposal, the Program Directors' recommendation regarding the disposition of the proposal, and the basis for that recommendation.</p>	
<p>2. Are both merit review criteria addressed</p> <p>a) In individual reviews?</p> <p>The review request letter asked reviewers to identify the proposal's strengths and weaknesses for each of the two NSF Merit Review Criteria:</p> <p style="padding-left: 40px;">What is the <i>intellectual merit</i> of the proposed activity?</p> <p style="padding-left: 40px;">What are the <i>broader impacts</i> of the proposed activity?</p> <p>According to the NSF Enterprise Information System, these two criteria are explicitly addressed in almost 70% of the reviews received in FY 2007 – 2009. In fact, the two criteria are addressed more frequently than that since the data collection system only counts reviews as having addressed the criteria if the reviewer places his or her comments into particular fields in a web-based form. Reviewers frequently place their entire review in one these fields or in the "Summary" field. When this happens, the database system reports that the review does not include both criteria. Information provided by NSF staff indicated, based on a reading of the reviews from a small random sample of proposals (5 awards and 5 declines) drawn from our larger random sample of 30 awards and 30 declines, that 83% of the reviews received explicitly addressed both review criteria.</p> <p>b) In panel summaries?</p> <p>We looked at a small random sample of panel summaries. These data indicate that panelists in most cases explicitly and inevitably implicitly address the two NSF review criteria for proposals that are to be funded.</p> <p>c) In Program Officer review analyses?</p> <p>We looked at the Review Analyses for a small random sample of five awards and five declines drawn from the larger random sample of thirty awards and thirty declines. Program directors explicitly identify how proposals satisfy NSF's two review criteria.</p>	<p>YES to all.</p>
<p>3. Do the individual reviewers provide substantive comments to explain their assessment of the proposals?</p> <p>Comments: We have examined a sample of reviews. In general, the reviewers do an excellent job of explaining the reasons for their assessments.</p>	<p>YES</p>
<p>4. Do the panel summaries provide the rationale for the panel consensus (or</p>	<p>YES</p>

<p>reasons consensus was not reached)?</p> <p>Comments: We have examined a sample of panel summaries. The summaries consistently do an excellent job of providing the rationale for the panel's conclusions.</p>	
<p>5. Does the documentation in the jacket provide the rationale for the award/decline decision?</p> <p>(Note: Documentation in jacket usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), program officer review analysis, and staff diary notes.)</p> <p>During FY 2009, NSF permitted reversal of a declined decision for funding through ARRA for proposals declined after October 1, 2008. (NOTE: This question does not apply to programs for which the reversal decline option was not used.)</p> <p>i) Were the reversals of the decision to decline based on both the high quality of the reviews received on the initial submission and the lack of available funding at the time the origin was made?</p> <p>ii) Is documentation provided, including a revised Review Analysis, to support the award decisions?</p> <p>Comments: We examined a sample of review analyses, and found them to be of very high quality. Together with the other documentation, they provide clear rationales for award decisions.</p> <p>The Economics program reversed declines through ARRA on four specific CAREER proposals. Program staff based the decision to reverse these declines on the required criteria as well as the ARRA goal of funding additional CAREER awards. Appropriate documentation was provided for review.</p>	<p>YES to all</p>
<p>6. Does the documentation to PI provide the rationale for the award/decline decision?</p> <p>(Note: Documentation to PI usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), and, if not otherwise provided in the panel summary, an explanation from the</p>	<p>YES</p>

program officer (written or telephoned with diary note in jacket) of the basis for a declination.)

Comments:

Once a decision has been made, each PI is sent a copy of all panel summaries and reviews for his/her proposal. Each panel summary is coupled with a context statement that informs the PI of the number of proposals reviewed in the panel, the overall proposal ratings, and the number of projects the program anticipates funding. Reviews received by PIs remain anonymous.

7. Is the time to decision appropriate?

YES

Comments:

Table 1 summarizes information on dwell time – the time passing from the submission of a proposal to the date the Division Director notifies the PI regarding funding. As indicated, the mean dwell time for proposals submitted in FY 2007–2009 was 4.4 months, 92% of all proposals were processed within six months, 6% required 7 to 9 months and 2% required from 10 to 12 months. As a point of comparison, NSF-wide, 72% of proposals were processed within 6 months.

According to additional information supplied by the program staff, fewer than one out of every 16 PIs does not know the status of his or her proposal until after mid-February (for the fall competition) or until after mid-July (for the spring competition). The Economics program directors provide informal information to the vast majority of PIs about the status of their proposal well before mid-February or mid-July. Within days after the panel meeting, the program directors notify PIs whose proposals are no longer under consideration so they can make timely decisions about how to proceed with their work.

Table 1 – Dwell Time

Average Time to Decision ("Dwell Time")

FY	Number of Proposals	Average Dwell Time (Awards and Declines)	0-6 Months	>6-9 Months	>9-12 Months	>12 Months	Average Award Dwell Time (Months)	Average Decline Dwell Time (Months)
2007	324	4.3	96%	3%	1%	0%	5.5	3.7
2008	339	4.1	97%	3%	0%	0%	5.0	3.8
2009*	368	4.7	84%	11%	5%	0%	5.6	4.1

Overall**	663	4.2	97%	3%	1%	0%	5.3	3.7
Overall***	1031	4.4	92%	6%	2%	0%	5.4	3.9

ARRA*

Only includes FY07 and FY08**

Includes all years***

Dwell times exceed 6 months for three primary reasons: need for additional materials from PIs, co-reviewing complications, and strategic opportunities. For awards, processing is frequently delayed when program directors request addenda or additional supporting materials (e.g., Institutional Review Board approval for studies involving human subjects) or when a PI has not submitted annual or final reports on other projects funded by NSF. Delays in processing proposals beyond 6 months may also occur when a proposal is being co-reviewed by programs whose competitions and decisional processes do not align well with the timeline of Economics reviews.

Finally, there are also strategic reasons to delay processing certain proposals. Not infrequently, additional funds become available to the program near the close of the fiscal year, sometimes for general use and at other times earmarked for more specific purposes (e.g., to support new investigators, to fund particularly speculative but potentially transformative research). Funding decisions for proposals on the margin in terms of funding, or quality proposals with particular attributes, may be held back to see if they qualify for additional funds if and when those funds become available. For example, during FY 2009, dwell times were lengthier and not representative of the typical Economics FY dwell time due to the ARRA funding process. There was high uncertainty during the winter and spring of 2009 with regards to whether the programs would receive ARRA funding, and if so how much and what would be the requirements for such funding. In light of this uncertainty, program directors delayed declining many proposals as the decision reversal process and the overall ARRA funding criteria remained unclear.

We were quite concerned to learn that there is consideration of moving to only one round of proposal submissions per year. Such a change would cause a large delay in funding in some cases, particularly for proposals that go through one or more rounds of revisions and resubmissions before they are approved. Such delays would be especially costly for junior faculty. Since all proposals would still need to be reviewed and evaluated, we would expect the reductions in administrative burden from such a change to be modest (except perhaps as a result of discouraging some researchers from submitting proposals at all, which would be undesirable). Thus, we believe that such a change would be a mistake. Below we suggest other possible ways of streamlining the review process that we believe would be superior.

8. Additional Comments

- c) **Additional comments on the quality and effectiveness of the program's use of merit review process.**
- d) **To what extent does the documentation in the jacket or otherwise available provide the rationale for use of ARRA funding?**

ARRA funded awards met the ARRA criteria set forth by NSF and OMB. These criteria included:

- 1) proposals received after October 1, 2008,
- 2) review rating of "very good" or higher,
- 3) involvement of new PIs,
- 4) "transformative research",
- 5) involvement of a high number of personnel,
- 6) variation in duration of awards for the overall ARRA portfolio.

The Economics Program made its decisions about ARRA funding for specific awards based first on the average review score, selecting projects with an average review score of "Very Good" or higher. Program directors then looked for projects from new investigators, and projects that would employ a large number of personnel.

Additional comments on quality and effectiveness:

In order to make it easier for panel members to evaluate proposals on a consistent basis, the program may wish to consider ordering the discussion of the proposals during the panel meeting according to the average or perhaps the median of reviewers' evaluation scores. Doing this could avoid, for example, a good but not excellent proposal looking better because it followed a weak proposal than would have been the case had it been grouped with proposals of similar quality. This would require that scores be submitted with sufficient lead time that the necessary sorting could be performed but that should not be a significant constraint. Setting an earlier deadline for the submission of reports would have the additional advantage of permitting panel members to read and reflect on them prior to the panel meeting, thereby potentially improving the quality of the decision process.

It seems apparent that the large number of proposal submissions together with a growing set of administration and coordination requirements that must be satisfied is imposing an increasing burden on both reviewers and program officers. The committee suggests that it might be possible to limit this burden – and make the review process more efficient – by experimenting with a process of expedited reviews of proposals that the program officer deems clearly unsuitable for NSF funding. For example, for such proposals, the program officer could ask two or three reviewers for quick-turnaround summary assessments sufficiently in advance of the scheduled panel meeting to make a judgment about whether a full review is warranted. Sufficiently negative summary assessments could lead to a proposal being rejected without further review. Information about these proposals and the reviews could be provided to the panel so that the panel could check that decisions based on expedited reviews were being made appropriately. The panel then could provide guidance to the program officers concerning whether the expedited review process should be continued and, if so, whether it should be modified. If the expedited review process became a regular part of proposal

evaluation, it would be important for the panel to continue to oversee it and ensure that expedited decisions were continuing to be made appropriately.

A potentially relevant parallel is that a few years ago, the American Economic Association began to allow the editor and co-editors of the *American Economic Review* to reject some submissions without having them refereed. Despite concerns that such a policy might be at odds with the obligation of the flagship journal of the economics profession's leading organization to even-handedly evaluate all types of research, the policy has been an enormous success: It has led to a large reduction in workload with virtually no complaints about the fairness of the process or the decisions reached through it.

A.2 Questions concerning the selection of reviewers.

SELECTION OF REVIEWERS	YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE
<p>1. Did the program make use of reviewers having appropriate expertise and/or qualifications?</p> <p>Comments:</p> <p>The Economics Advisory panel is made up of distinguished scholars across the full range of fields and methods in the discipline. Program directors try to assure that at least two members of the panel have extensive experience in macro-economics, finance, economic theory, and econometrics. Additional economists are recruited for their expertise in labor economics, development economics, international trade, industrial organization, and public economics. The panel also includes an economic historian and two panelists with expertise in experimental economics. Some panelists, of course, fill more than one of these roles. While the target levels of representation generally make sense to us, we did not fully understand the rationale behind seeking as a general practice to have two panel members with expertise in finance, given the relatively small number of finance proposals received and the growing familiarity of economists more generally with this area of research.</p> <p>Panel membership is staggered so that panel membership always includes a few</p>	<p>YES</p>

<p>experienced panelists. Table 2 lists the names and institutional affiliations of panelists serving during the FY 2007–2009 period.</p> <p><i>Table 2 – Economics Panel Members [removed]</i></p> <p>Economics panelists are an elite group recognized as world-class scholars in their fields of expertise. Ten women were among the 34 panelists. All panelists are economists, but their interdisciplinary interests varied widely, from psychology to health to management science.</p>	
<p>2. Did the program use reviewers balanced with respect to characteristics such as geography, type of institution, and underrepresented groups?</p> <p>Note: Demographic data is self reported, with only about 25% of reviewers reporting this information.</p> <p>Comments:</p> <p>NSF data only includes institutional information for about 85% of the reviewers. Figure 4 summarizes information about reviewers by type of institutions. The largest single source of reviews is the top 100 Research-intensive PhD Institutions (52.1%) followed by other PhD-granting Institutions (17.8%).</p> <p>There is a relatively high positive correlation between the states from which the Economics Program receives proposals and the states from which it receives reviewers (Pearson’s $r = 0.690$). More reviewers come from California than any other individual state; the two states with the second and third largest number of reviewers are New York and Massachusetts. International reviewers are also solicited as appropriate.</p> <p>Evaluating additional data on reviewers is problematic since these data, although requested of the reviewer, are not required and, as a consequence, are generally not provided. Available data, such as they are, are reported in Tables 3 through 5. In terms of gender, women accounted for 26% of Economics reviews for which gender was reported (Table 3). As a point of comparison, looking NSF-wide, when gender of a reviewer is known (a small number), 29.8% of reviews come from females for the FY 2007-2009 period. Recent figures from the American Economic Association’s Committee on the Status of Women in the Economics Profession (CSWEP) show that women are 16.9% of the tenured and tenure-track faculty in PhD granting Economics departments. In our small random sample of 5 awards and 5 declines, 27% of the reviewers were women.</p> <p><i>Table 3 – Reviewers by Gender</i></p>	<p>YES</p>

Gender				
FY	Not Available	Unidentified	Female	Male
2007	77.5%	0.9%	5.2%	16.3%
2008	77.0%	1.2%	6.3%	15.5%
2009	79.1%	1.1%	5.6%	14.2%
3-Year Total	77.9%	1.1%	5.7%	15.3%

Table 4 displays the percentages of reviewers identifying as part of a minority group. These reviewers account for 9.0% of Economics reviewers where the minority status of the reviewer was self-reported.⁴ NSF-wide, 10.1% of reviewers report minority status.

Table 4 – Reviewers by Minority Status

Minority Status			
FY	Not Available	No	Yes
2007	77.5%	21.3%	1.3%
2008	77.0%	20.5%	2.6%
2009	79.1%	18.8%	2.0%
3-Year Total	77.9%	20.1%	2.0%

Reviewers who report disability status accounted for 2.9% of all Economics reviewers where the disability status of the reviewer was self-reported, as displayed in Table 5. NSF-wide, 2.6% of reviewers report disability status.

Table 5 – Reviewers by Disability Status

Disability Status				
FY	Not Available	Unidentified	Not Disabled	Disabled
2007	77.5%	6.8%	15.0%	0.7%
2008	77.0%	7.0%	15.7%	0.4%
2009	79.1%	6.5%	13.5%	0.8%
3-Year Total	77.9%	6.8%	14.7%	0.7%

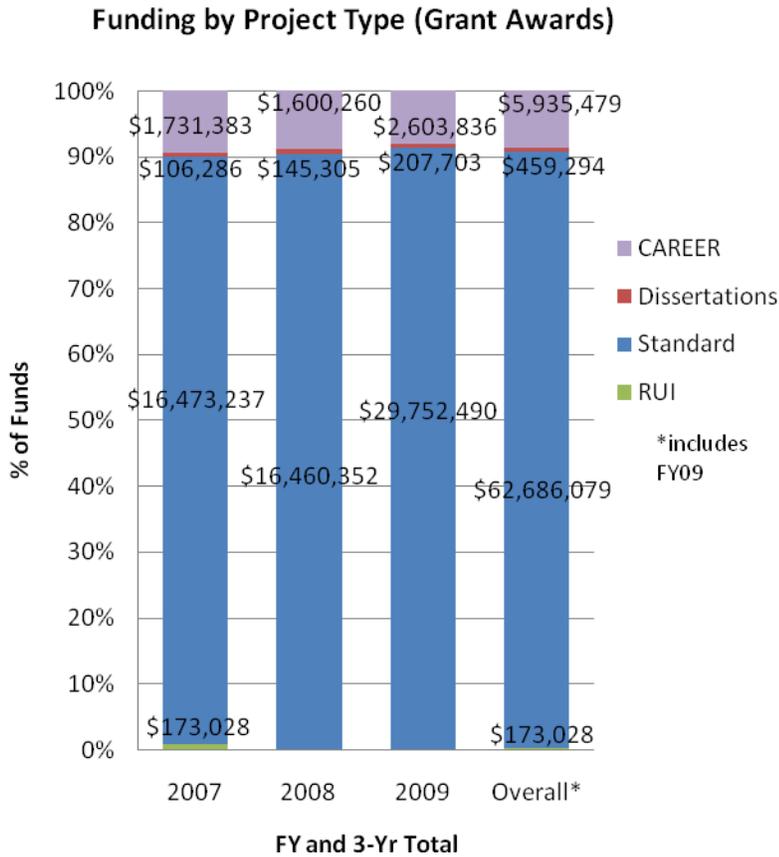
⁴ “Minority” includes American Indian, Alaskan Native, Black, Hispanic, and Pacific Islander.

<p>3. Did the program recognize and resolve conflicts of interest when appropriate?</p> <p>Comments:</p> <p>Prior to selecting ad-hoc reviewers, the program director reviews the Biographical Sketches of the PI and co-PIs to avoid asking reviewers who have a conflict of interest under NSF guidelines. If a requested reviewer notifies the program director of a conflict, they are removed from the reviewer list. As each review is received, the program director reviews the section on “Conflict of Interest”. If a conflict is noted, the review is “marked as un-releasable” and excluded from the review process. In cases where there is uncertainty regarding a conflict of interest, the program director consults appropriate officials at NSF before including the review.</p> <p>Upon receipt of proposals for a given round, the program director will ask panelists to identify those proposals for which they have conflicts of interest. If a panelist has a conflict of interest with any of the proposals, the panelist does not review the proposal. NSF staff will also mark panelist conflicts of interest in the computer system, blocking the panelist’s access to the proposal and its reviews. During the meeting, NSF staff members provide panelists with a briefing on conflict of interest procedures at the beginning of the panel meeting, and each panelist signs a conflict of interest statement. If a panelist has a conflict of interest in connection with any of the proposals, that panelist leaves the room during the discussion of the respective proposal. Any panelist who has a conflict of interest on a given proposal does not participate in any part of the review or decision process for that proposal.</p> <p>If the program director has a conflict of interest with a proposal, the program director does not participate in any part of the review process for that proposal. Another program director within the Economics program will manage the review process for that proposal. The conflicted program director will also leave the room during panel discussion of the conflicted proposal, and the program director who has handled the reviews oversees the panel discussion of the proposal.</p>	<p>YES</p>
<p>4. Additional comments on reviewer selection:</p>	

A.3 Questions concerning the resulting portfolio of awards under review.

<p style="text-align: center;">RESULTING PORTFOLIO OF AWARDS</p>	<p style="text-align: center;">APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE</p>
<p>1. Overall quality of the research and/or education projects supported by the program.</p> <p>Comments:</p> <p>The members of the committee reviewed materials describing a large number of the projects that have been funded. In each of the topic areas within economics, we were convinced that truly important research is being funded. From our perspective, the review process seems to be working well and to have resulted in an appropriate portfolio of funded projects.</p> <p>We could not help but notice, however, the significant number of high quality proposals that did not receive funding. This is not a criticism of the review process – it is well managed and performs as well as any such process can be expected to do. Rather, we are concerned that there are far more proposals that merit funding than can be in fact funded.</p> <p><i>Proposals and Award Characteristics and Their Disposition:</i></p> <p>For FY 2007–2009, the Economics program received a total of 1,030 proposals (906 projects). All went through the Economics panel with the exception of SGERs, EAGERs, RAPIDs, and proposals where the PI was also a current or recent (within 1 year) panel member. For conflict of interest reasons, program directors evaluate proposals involving current or past panel members based only on mail reviews and, when co-reviewed with other programs, on the evaluations of those panels.</p> <p>As previously mentioned, Economics’ overall funding rate for FY 2007–2009 was about 32% including FY 2009 and 29.4% not including FY 2009. For a more refined sense of funding rates, projects funded can be broken down by proposal type (i.e., standard research proposals, DDRIG, CAREER, and RUIs). Figure 1 shows the total percent of funds spent on each type of proposal. However, these figures are based on the projects’ total funded budgets and do not account for co-funding amounts contributed by other programs.</p>	<p>APPROPRIATE</p>

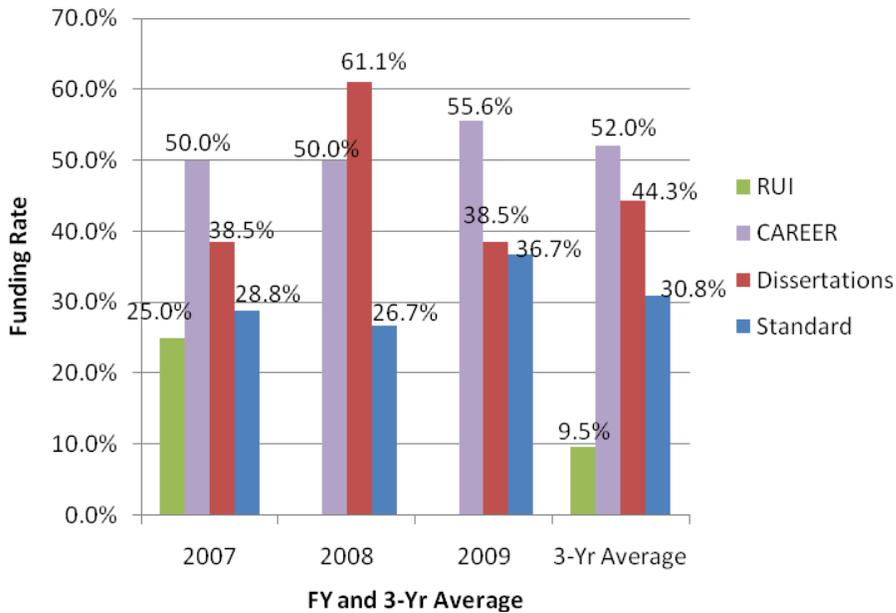
Figure 1: Funding by Project Type (Grant Awards)



As indicated in Figure 2, the funding rate for regular research projects is 30.8% including 2009 (and 27.7% not including 2009), about the same as the mean for all merit reviewed proposals.

Figure 2: Funding Rate by Grant Type for Projects

Funding Rate by Grant Type (Projects)



Dissertation Improvement Grants are requests for small amounts, generally \$10,000 or less, to cover expenses graduate students incur in the process of conducting their dissertation research (e.g., travel, special equipment, participation fees). These grants are an important means of promoting the next generation of scholars in the disciplines covered by the program. Given this goal, the small amounts of money involved, and the generally high quality of the dissertation proposals submitted, the funding rate for these is quite high, averaging 44%.

In addition to regular research proposals and Dissertation Improvement Grants, NSF programs can also fund some awards that do not require full merit review. In FY 2007 and FY 2008, these proposals were received through NSF’s SGER (Small Grants for Exploratory Research) mechanism. The stated intent of this activity NSF-wide was:

“[T]o support research involving: preliminary work on untested and novel ideas; ventures into emerging and potentially transformative research ideas; and application of new expertise or new approaches to established research topics or research for which there is severe urgency with regard to availability of, or access to data, facilities or specialized equipment, including quick-response research on natural or anthropogenic disasters and similar unanticipated events.”

Economics funded two SGER proposals during FY 2007–2009. Funding rates for SGERs, like Dissertation Improvement Grants, were quite high, averaging 77% NSF-wide. The high funding rate was a consequence of the fact that

<p>SGER proposals were to be discussed with the Program Directors prior to their submission. Program Directors discouraged submissions that are inappropriate as SGERs (i.e., the data are not ephemeral or the argument that the project is high risk, high potential is weak.).</p> <p>In 2009, NSF introduced the Early-concept Grants for Exploratory Research (EAGER) and Grants for Rapid Responses Research (RAPID) to replace the SGER. The EAGER is used to support exploratory work in its early stages on untested, but potentially transformative, research ideas or approaches. The RAPID is used for proposals having a severe urgency with regard to availability of, or access to data, facilities or specialized equipment, including quick-response research on natural or anthropogenic disasters and similar unanticipated events. Economics funded no RAPIDs and one EAGER during FY 2007–2009.</p> <p>The Economics program also participates in the Foundation-wide Faculty Early Career Development (CAREER) program. This award is the most prestigious award the NSF offers to junior faculty who “exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations.” These awards fund PIs for 5 years with a minimum award size of \$400,000 and are evaluated in the fall round of proposals. During the FY 2007–2009, Economics received 25 CAREER proposals, with an overall funding rate of 52%. Unlike the Dissertation proposals where the program is able to fund several proposals with relatively low cost, the high cost of CAREER awards limits the funding to a few proposals each fiscal year.</p> <p>Furthermore, the Economics program supports Research in Undergraduate Institutions (RUI). The RUI program supports research in predominantly undergraduate institutions through funding faculty members, shared-use research instrumentation, and research opportunities at other NSF supported institutions. The Economics program received 21 RUI project proposals and made two awards.</p>	
<p>2. Does the program portfolio promote the integration of research and education?</p> <p>Comments:</p> <p>Economics program support of DDRIGs, RUIs, and CAREERs all reflect targeted efforts to promote the integration of research and teaching. This goal is furthered by funding of post-doctoral, graduate and undergraduate students in standard and non-standard research proposals. During FY 2007-2009, Economics has supported 74 undergraduates, 642 graduate student, and 5 post-doctoral student position-years, not counting graduate students listed as PIs in DDIRG awards. Given the number of projects Economics funded (289), on average 0.8 undergraduate, 2.2 graduate, and 0.02 post-doctoral student-</p>	<p>APPROPRIATE</p>

years are funded per proposal

3. Are awards appropriate in size and duration for the scope of the projects?

APPROPRIATE

Comments:

The Economics portfolio of funded research for FY 2007-2009 consists of 114 distinct research projects where Economics is the sole or lead program. Of these, 32 were Dissertation Improvement Grants and another 4 were SGERs. Figures 3 and 4 summarize characteristics of those awards where Economics was sole or lead program with respect to the size and duration of awards. Standard research projects tend to run for two or three years (mean 2.6 years) with total budgets of about \$300, 000 (mean \$257,967 per grant or \$97,190 per year).

Figure 3 – Award Duration

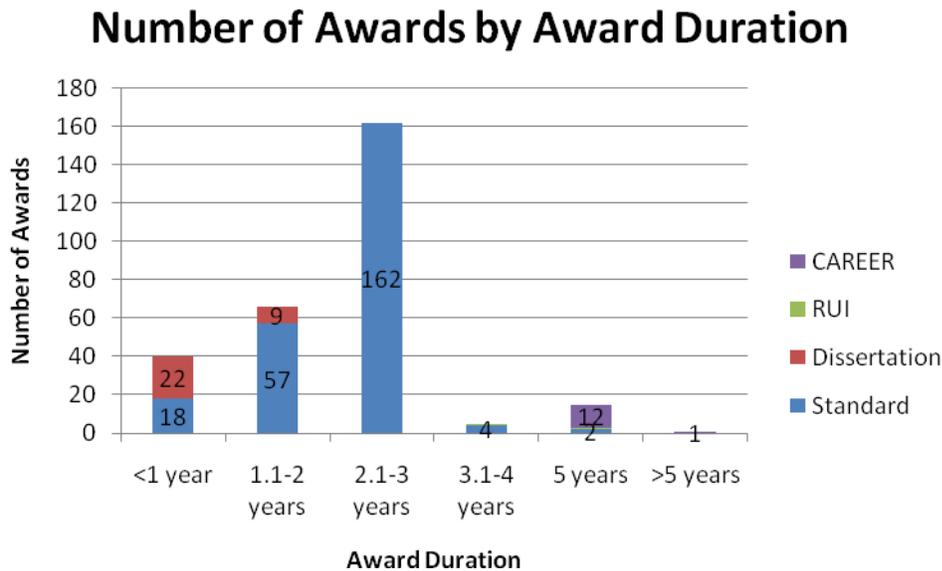
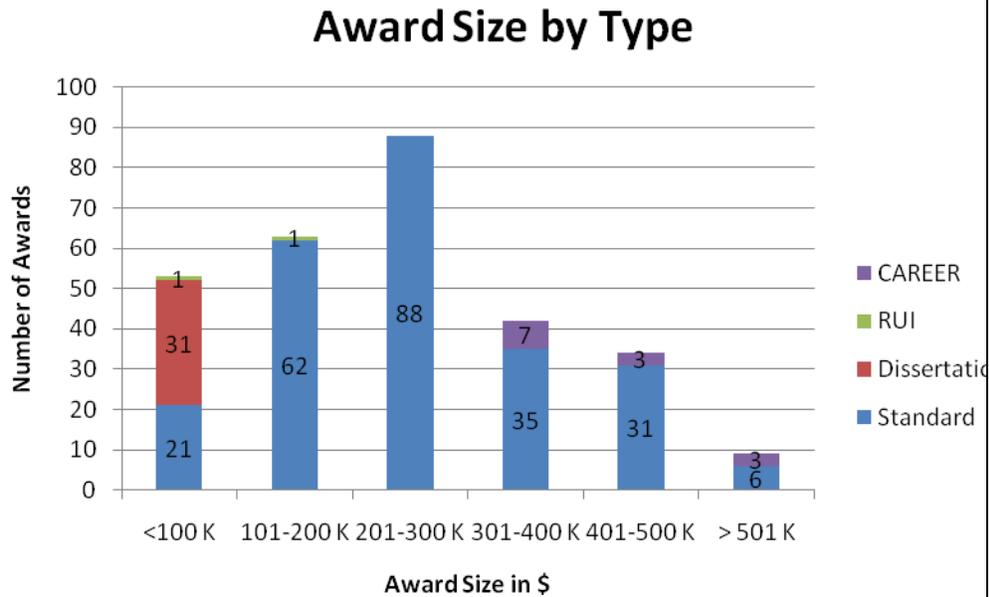


Figure 4 – Award Size



One symptom of the severely constrained funding for the Economics Program is that the program officers have been forced to impose relatively stringent caps on allowable funding amounts. This includes both caps on the salary payable to principal investigators and caps on the amounts available to support graduate students working on funded projects. We are especially concerned about the latter, as allowable funding amounts may not even cover minimum stipend payments, not to mention tuition support that may be required for graduate research assistants by the PI’s institution.

4. Does the overall program portfolio (including ARRA funded awards) have an appropriate balance of innovative/potentially transformative projects?

APPROPRIATE

ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of innovative/potentially transformative projects?

APPROPRIATE

Comments:

The NSF defines potentially transformative research as “research that generates ideas, discoveries, or tools that radically change our understanding of an important existing scientific or engineering concept or lead to the creation of a new paradigm or field of science or engineering. Such research is characterized by its challenge to current understanding or its pathway to new frontiers.” Common characteristics of transformative research are that it

is unexpected, has potential to disrupt accepted theories and perspectives, potential for creating entirely new fields, and the possibility to revolutionize entire disciplines. Our sense is that the portfolio of the Economics Program includes an appropriate balance of transformative projects.

The Economics Program officers use 12 different ‘field’ categories in managing proposals by research area: Theory, Econometrics, Macroeconomics, International (including trade, finance, and development), Finance, Industrial Organization (IO), Environmental, Labor, Public and Regional, Economic History, Behavioral Economics and Infrastructure (conferences, large data collection efforts, etc). Table 6 includes information on new awards by field for each fiscal year. We then provide an overview of NSF-funded research in each field.

Table 6 – New Awards by Field

Number of Awards (percentage of awards)				
Field	FY2007	FY2008	FY2009	Total
Theory	14 (15.9%)	8 (9.41%)	25 (21.37%)	47 (16.2%)
Econometrics	12 (13.6%)	13 (15.2%)	13 (11.1%)	38 (13.10%)
Macro	8 (9%)	9 (10.6%)	11 (9.4%)	28 (9.7%)
International	10 (11%)	7 (8.2%)	11 (9.4%)	28 (9.7%)
Finance	4 (4.6%)	3 (3.5%)	3 (3.26%)	10 (3.45%)
IO	4 (4.6%)	10 (12%)	17 (14.5%)	31 (10.7%)
Environmenta l	4 (4.6%)	1 (1.2%)	3 (2.6%)	8 (2.8%)
Labor	10 (11.3%)	9 (11%)	4 (3.42%)	23 (7.9%)
Public/Region al	7 (8%)	8 (9.4%)	8 (6.84%)	23 (7.9%)
History	3 (3.4%)	3 (3.5%)	5 (4.27%)	11 (3.8%)
Behavioral	7 (8%)	4 (4.7%)	10 (8.55%)	21 (7.2%)
Infrastructure	5 (5.7%)	10 (11.8%)	7 (5.98%)	22 (7.6%)
Total # Awards	88	85	117	290

Economic Theory

These projects develop and analyze formal mathematical models of decision making (by individuals and by organizations such as firms and governments), models of strategic behavior, and models of economic systems from small scale systems, such as a single market, to large scale work in general equilibrium modeling that considers entire economies. Work in this area is increasingly incorporating insights from other social and behavioral sciences.

For example, Matthew Jackson⁵ is developing new methods for modeling and analyzing social networks using both game theory and graph theory. Larry Epstein and Kyoungwon Seo are working to develop a fully axiomatic treatment of decision making under ambiguity, defined as situations where the decision maker is uncertain about the degree of uncertainty.⁶ Drew Fudenberg's research is using game theory methods to develop a consistent theoretical foundation for the rapidly growing field of behavioral economics. His work is also developing new methods in evolutionary game theory that have broad applications across the social sciences and into biology.⁷

A number of projects categorized as economic theory address issues in mechanism design. This area uses methods from economics and game theory to develop innovative incentive schemes for achieving desired goals. One major example of a mechanism design problem is developing new auction methods. Mechanism design problems arise in a wide variety of other contexts, from the design of regulatory policies to the design of "cap and trade" rules. Recent awards in this area include work by Paul Milgrom on the design of multi-good auctions, a project by Jakob Kastl on the characteristics of auctions for goods that are divisible (i.e., goods that can be split into smaller pieces or units), and a CAREER award to Paul Healy for a project that seeks to integrate a variety of insights from behavioral economics into specific mechanism design problems.⁸

Econometrics

These awards fund research that develops new methods for the analysis of data. Some of these projects are quite applied in their focus, including both the development of new methods and the immediate application of the methods. For example, Patrick Bajari and Han Hong are developing methods for structural estimation of dynamic games and are applying these methods to a range of topics from the possible presence of peer effects in stock analyst recommendations to a study of the determinants of investment decisions in the petroleum market.⁹ Other projects involve pure work in econometric theory. This area includes work that focuses on econometric methods widely used in macroeconomics, such as Peter Phillips' project that extends the econometric methodology of unit roots and co-integration to mildly integrated and explosive data.¹⁰ This project is developing new and potentially powerful

⁵ 0647867 Jackson, Studies of Social Structure and Economic Behavior.

⁶ 0917740 Epstein and 0917740 Seo, Collaborative Research: Symmetry, Ambiguity, and Frequencies.

⁷ 0646816 Fudenberg, The Economics of Self Control and the Evolution of Equilibrium.

⁸ 0648293 Milgrom, Market Design, 0752860 Kastl, Divisible Good Auctions with Constrained Bidding, and 0847406, Healy, CAREER: Behavioral Mechanism Design.

⁹ 0720463 Bajari and 0721015 Hong, Collaborative Research: Empirical Analysis of Static and Dynamic Strategic Interactions.

¹⁰ 0647086 Phillips, Mildly Explosive Time Series and Economic Bubbles. This award was co-funded by Economics and MMS and was made in early 2007.

tools for detecting and analyzing extreme movements in economic variables, and it is worth noting that the project began well before the current financial crisis highlighted the need for just such tools. Other projects develop methods that are useful not just for microeconomics but also for other social science and health science questions; Bo Honore for example, is developing new methods to investigate the causal relationship between health and socioeconomic status.¹¹

Macroeconomics

The award portfolio in this area includes a variety of perspectives and approaches and reflects the diversity of methods in modern macroeconomics. Despite the fact that the time period under review here largely predates the financial crisis of 2008/2009, there are still several projects that are related to the understanding of financial crises. Research by Vincenzo Quadrini and Enrique Mendoza explores the link between the process of financial globalization and the ongoing financial crisis.¹² Francois Gourio's work examines the manner in which changes in risk-premia affect the willingness to invest in risky projects, leading to lower expected returns, a phenomenon currently being observed.¹³ Harald Uhlig's research seeks to identify the interrelationship between macroeconomic shocks and financial markets.¹⁴ Christopher Sims continues his work in macroeconometrics with a goal of developing new methods that will reduce reliance on computationally convenient restrictions, and he is applying these methods to monetary policy and monetary-fiscal interactions in confronting budget impasses.¹⁵ This field also includes work connecting micro and macro economics, for example in considering the economics of productivity. A CAREER award to Nicholas Bloom is funding his research on the role of uncertainty shocks, as well as his work on the effects of management practices on the success and failure of individual firms.¹⁶

International

This group of awards is especially wide-ranging, since it includes work on the macroeconomics of international finance, work in microeconomics on specific markets affected by international trade, and some projects that examine questions in development economics. Two examples in international finance are Xavier Gabaix's project seeking to explain the failure of uncovered interest parity to hold by introducing risk dynamics, especially the vagaries of risk perceptions relating to rare disasters. Work by Kenneth Rogoff and

¹¹ 0718063 Honore, Issues in Estimation of Dynamic Panel Data and Duration Models.

¹² 0922659 Quadrini, Mendoza, Macroeconomic Implications of Capital Market Frictions with Heterogeneous Agents.

¹³ 0922600 Gourio, Time-Varying Risk of Disaster, Time-Varying Risk Premia, and Macroeconomic Dynamics.

¹⁴ 0922550 Uhlig, Aggregate Risks and Aggregate Allocations.

¹⁵ 0719055 Sims, Theory and Inference for Macroeconomic Policy.

¹⁶ 0846194 Bloom, CAREER: A Micro to Macro Analysis of Productivity and Growth.

Carmen Reinhart considers historical experiences with international financial crises.¹⁷ International trade projects include work by Robert Feenstra and Alan Heston that is part of an international collaborative effort to produce data that allow for direct cross-national comparisons of income, outputs, inputs and productivity (the Penn World Tables).¹⁸ This part of the portfolio also includes projects examining the economics of exports and imports, such as James Tybout's project that brings new models of the search process to bear on an innovative and extremely detailed data set of US trade with Colombia.¹⁹ Finally, some projects in this category focus on the economics of less developed countries. This includes work using randomized trials field experiments to measure the success of interventions designed to encourage economic growth. Additional work on less developed countries overlaps with political economy. An example is the research of Nancy Qian on village democracy in China, which develops a unique data set on the economic impact of social accountability.²⁰

Finance

This is an eclectic group of projects. In general the program does not hold a large portfolio in financial economics. Awards in this area are made to projects that study issues that apply not just in financial markets but also apply to a wider range of economic behavior. One good example is Andrew Schotter's work in behavioral economics that examines how persuasion can influence the financial decisions made by individuals. Schotter uses a series of lab experiments to test models of persuasion, and his results are applicable not just to decisions about personal investments but also to the full range of markets where firms attempt to persuade consumers. This project was co-funded with DRMS. A second example is work by Esther Duflo and Matthew Jackson on how social networks in rural Indian villages affect whether or not microfinance loans become widely adopted in a village.²¹ Yet another example is a CAREER award to Lauren Cohen, whose research involves the way information flows in financial markets depend upon relationships among individuals.²² Efraim Benmelech, in another CAREER award, looks at the way bankrupt firms impose burdens on their non-bankrupt competitors, offering a possible explanation for the severity of the current crisis.²³

Industrial Organization

¹⁷ 0820517 Gabaix, Rare Disasters and Exchange Rates and 0849224 Rogoff, International Financial Crises in Long-Term Historical Perspective.

¹⁸ 0647769 Heston and 0648888 Feenstra, Collaborative Research: Integrating Expenditure and Production Estimates in International Comparisons.

¹⁹ 0922358 Tybout, Search and Learning in Export Markets.

²⁰ 0922087 Qian, Village Democracy in China.

²¹ 0752935 Duflo and 0752735 Jackson, Collaborative Research: Social Networks and Diffusion of Microfinance; 0721111 Schotter, Persuasion in Financial Decisions.

²² 0847395 Cohen CAREER: Relationships in Finance.

²³ 0847392 Benmelech, CAREER: Empirical Analysis of the Causes and Consequences of Financial Distress.

Awards in this field include projects in mechanism design that are focused on specific applications rather than broad new methods, as well as empirical projects that evaluate the effectiveness of specific kinds of market designs. For example, William Fuchs and David Rahman are young investigators each working on the theory of specific mechanism design problems.²⁴ Other projects test the implications of mechanism design theory for specific kinds of resource allocation problems. Gregory Lewis and Patrick Bajari are examining whether the contracts and mechanisms used to purchase the goods and services used in highway construction have the effects predicted by economic theory. This includes measuring the effect of new contract clauses that create time incentives for finishing highway projects ahead of schedule. Jonathan Levin's research includes projects on radio spectrum auctions, college admissions, internet advertising, and the effects of new government purchase policies designed to encourage the development of new vaccines.²⁵ This part of Levin's research is an example of another group of IO awards, projects that focus on the causes and consequences of innovation by firms. Another example is John Turner's work to develop a novel data set that includes over 70 years of published court decisions in patent litigation cases.²⁶ Projects in this area are frequently co-funded with one of the NSF's interdisciplinary programs focused on innovation: IOS (Innovation and Organization Science, another SES program) or SciSIP (Science of Science and Innovation Policy, an SBE program housed in our Office of Integrative Activities). The Economics Program is also funding a range of projects that develop and apply new empirical methods for estimating outcomes for specific kinds of markets that are difficult to analyze with current tools. A good example is Liran Einav's CAREER award for work on the empirical analysis of insurance markets where adverse selection is a serious concern, including markets for retirement annuities and health insurance.²⁷ Finally, a number of projects examine the effects of specific regulations that affect businesses. For example, Stephen Ryan is estimating the consequences of regional emission trading programs, an example of market-based environmental regulation, on firm decisions about production (and pollution) in electricity and cement.²⁸

Environmental and Resource Economics

This has been a relatively small area for the program over the past several decades, but an increasing number of high quality proposals fueled by current

²⁴ 0752200 Fuchs, Optimal Contracts with Private Monitoring and 0922253 Rahman, Incentives in Organizations.

²⁵ 0924371 Lewis and 0924784 Bajari, Collaborative Research: Market Design in Public Procurement and Levin 0922297, Problems in Applied Market Design.

²⁶ 0751661 Turner, A Comprehensive Data Set of Published US Patent Litigation Decisions; this project was co-funded with the Law and Social Science (LSS) program.

²⁷ 0643037 Einav, CAREER: Empirical Analysis of Markets with Adverse Selection.

²⁸ 0922401 Ryan, Market Based Environmental Regulation of Industry.

policy concerns are being submitted. Examples are Price Fishback's project that uses the US experience in the 20th century to better understand how US agriculture has adapted to past episodes of significant climate change and work by Sheila Olmstead and Lori Benneer that examines the effects of environmental 'disclosure' rules that mandate that consumers be informed about specific environmental risks.²⁹

Labor

This field includes not just work on the economics of labor supply and demand, but research on a variety of factors that influence labor supply. For example, Muriel Niederle's CAREER award covers a wide range of topics from the influence of gender on the willingness to enter competitive tournaments to matching models of the academic labor market.³⁰ Researchers in health economics are generally funded by the NIH, but some projects, especially projects testing economic theories with wide applications, are funded by NSF. An excellent example is Emily Oster's research on the interactions between human behavior and disease. Her project covers topics ranging from how HIV prevalence has affected economic activity and sexual behavior in Africa to testing a hypothesis from the economics of adverse selection that individuals who have little chance of living to old age because of genetic illness are less likely to invest in long term health insurance.³¹

Some work on the economics of education is classified as labor economics. For example, Miguel Urquiola is using a massive administrative data set with information on the 1989 and 1990 birth cohort in Romania to measure peer impact effects in schooling. Finally, work on the economics of race is also generally placed in this category. A leading example here is the CAREER award to Roland Fryer. Fryer's interests are wide-ranging; this particular award funds his work to develop new measures of segregation that are based on data from social interactions at the level of individuals as well as work on the political economy of gerrymandering.³²

Public

This category includes research in public finance, work that focuses on the effects of taxes on behavior and government revenues, as well as research that looks at the effects of public expenditures. An excellent example is Raj

²⁹ 0921732 Fishback, The Dramatic Rise in Agricultural Productivity in the US During the 20th Century: Disentangling the Roles of Technological Change, Government Policy, and Climate. 0648256 Olmstead and 0647855 Benneer, Collaborative Research: The Impacts of the Right to Know: Information Disclosure and Drinking Water Quality.

³⁰ 0645728 Niederle, CAREER: Understanding How Markets Work.

³¹ 0719931 Oster, The Economics of Disease and Behavior.

³² 0819776 Urquiola, Family and School Influences in the Determination of Child Outcomes: Evidence from Two Sources of Variation. 0748734 Fryer, CAREER: New Methods for Understanding Race, Inequality, and Spatial Separation. Roland Fryer was a 2009 winner of the PECASE (Presidential Early Career Award in Science and Engineering) for this project.

Chetty's CAREER award, funding research that ranges from a project on the effects of unemployment benefits on liquidity constrained individuals to work on the behavioral economics of how people respond to the way in which taxes and benefits are explained. Emmanuel Saez is making innovative use of government administrative records to estimate the behavioral responses to both tax and transfer programs.³³ This field also includes projects in political economy, projects on some aspects of education, and projects on the economics of law, including work on the economics of crime. For example, Jens Ludwig is assembling data to track local crime rates before and after court orders mandating school desegregation. His goal is to determine whether or not desegregation reduces crime rates.³⁴

History

This is another relatively small field for the program. Awards in economic history focus on projects that use or develop historical data sources to test economic theory in significant ways. Several of the projects already described (for example, Price Fishback's work on 20th century American agriculture) could be categorized as economic history. One particularly noteworthy project in this category is Peter Lindert's work, which is represented by two different awards. Lindert is coordinating a global team of investigators who seek to collect and disseminate data on incomes and prices. The historical records they are using include information from 1200 on and also involve archives on six continents. A particular focus is collecting and disseminating data on the economies of East Asia, especially prior to the industrial revolution.³⁵

Behavioral/Experimental

Work in behavioral economics has become increasingly integrated with other fields of economics research, and a number of the awards mentioned above could also be counted as behavioral economics. Projects on a variety of important issues in behavioral economics have been funded. For example, Theodore Bergstrom is developing and testing behavioral models of altruistic behavior using data on who chooses to join registries for bone marrow donation.³⁶ The program also funds projects that use lab experiments to test a variety of different kinds of economic models, from models of auctions to behavioral models of learning.³⁷ The Economics Program has also supported

³³ 0645396 Chetty, CAREER: The Welfare Consequences of Social Insurance and Redistributive Taxation. 0850631 Saez, Behavioral Responses to Taxation: Evidence from Field Experiments and Tax Policy Variation.

³⁴ 0820033 Ludwig, The Effects of School Desegregation on Crime.

³⁵ Lindert 0649062 and 0922531, Global Prices and Incomes 1200-1950.

³⁶ 0851357 Bergstrom, Bone Marrow Registries and Donor Motives.

³⁷ See for example 0851674 Kagel, Package Auctions and 0649484 Gazzale, RUI: Experiments in Learning from Others in Games.

projects that develop new methods for conducting laboratory decision making experiments. For example, Daniel Friedman is currently developing a new software system that will be available at no cost to other researchers who want to develop experiments where players can make choices from continuous strategy spaces.³⁸

Infrastructure

This category includes three different components. The first is NSF support for large data collection efforts. The second is sponsoring conferences and workshops, and the third is projects designed to assist in the education of future economists.

The single largest award made by the Economics Program funds the Panel Study of Income Dynamics (PSID), a longitudinal survey initiated in 1968 of a nationally representative sample for U.S. individuals and the family units in which those individuals reside.³⁹ The panel provides shared-use databases, research platforms, and educational tools on intergenerational and life-cycle measures of economic and social behavior. The data are not available elsewhere (no other data set offers life course observations on a nationally representative sample of families spanning a full four decades) and they are critical for research on poverty, savings, fertility, labor supply, and intergenerational relations. Although the PSID is used predominantly in economics, sociology and demography, the data are available, and have been used throughout the social and behavioral sciences. Articles based on PSID data have appeared in 315 different journals from a variety of other scientific disciplines, including geography, psychology, child development, management and organizational development, survey methods, statistics, gerontology, food and nutrition and epidemiology. The PSID is co-funded by a consortium of government agencies that has included HHS/ASPE, NIA, NICHD, and HUD. It is co-funded by five SBE programs: Economics, Development and Learning Sciences (DLS), MMS, Geography, and Sociology.

The program also partners with the MMS program and other NSF programs to make awards providing seed funding for new Census Research Data Centers (RDCs), which grant secure access for academics to confidential administrative data. Along with Sociology and MMS, the Economics Program funds the Luxembourg Income Study (LIS), a consortium of over 30 nations which cooperatively finance a research and data center.⁴⁰ LIS harmonizes household income micro-data sets collected by each nation and makes the data available to researchers.

³⁸ 0925039 Friedman, Continuous Games in the Laboratory.

³⁹ 0518943 Brown, Continuity and Change in American Economic and Social Life: The PSID 2007 – 2011.

⁴⁰ 0752751 Smeeding, LMICS: The Luxemburg Middle Income Countries Study.

<p><i>Conferences and Workshops</i></p> <p>The Economics Program continues to fund a number of different conference and workshop series that meet each year and involve researchers from across the United States. A leading example is The National Bureau of Economic Research (NBER) Summer Institute.⁴¹ The Institute is held in July of each year and includes at least 40 sessions and approximately 1,700 attendees. The workshop includes presentations of completed research, but the main goal is to be a venue where new ideas are raised, preliminary research ideas are developed, and plans for joint or coordinated research efforts are established. Workshops cover a wide range of topics in applied economics. The Economics Program award provides funding for the participation of junior faculty.</p> <p><i>Future Economists</i></p> <p>The American Economic Association’s (AEA) Economic Pipeline Project expands the pool of minority Ph.D. economists through two interrelated programs targeted at critical stages in their training and professional development. The Summer Training Program provides American minority students and students from disadvantaged backgrounds with coursework and research experience in preparation for graduate study in economics. In the Mentoring and DITE programs, students, their mentors, and a selected group of economists participate in an annual conference with formal and informal sessions on research, graduate school and the early years of one’s professional career.⁴²</p>	
<p>5. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Inter- and Multi- disciplinary projects? <p>The program portfolio description above included a variety of interdisciplinary and multidisciplinary projects. Another way to consider this question is to review data on co-funding with other NSF Programs.</p> <p>The Economics program routinely co-funds projects with other units within the directorate of Social, Economic and Behavioral Sciences and with other directorates such as Computer and Information Sciences and Engineering (CISE). Table 7 lists the number of Economics primary proposals other programs contributed to and the total amount (e.g., \$2,520,514 contributed by Methodology, Measurement and Statistics to 26 Economics lead proposals)</p>	<p>APPROPRIATE</p>

⁴¹ 0851579 Poterba, NBER Summer Institute.

⁴² 0752814 Darity, Diversity Initiative for Tenure in Economics, 0752716 Rodgers, The Economics Mentoring Program (formerly known as the Pipeline Project) and 0755515 Steigerwald, REU Site: The Economics Summer Training Program at UC Santa Barbara. The last award was made through the SBE-wide REU site program with co-funding from Economics.

during FY 2007-2009. Table 7 also lists the number of proposals originating in another program to which Economics provided funds and the total amount Economics contributed in funding those proposals (e.g., Economics contributed funding to 5 Sociology lead proposals at a cost of \$883,138). During FY 2007-2009, 12.8% of the Economics portfolio (all Economics related proposals) were co-funded. Of that 12.8%, 10.7% of Economics funds go to programs within SES, 1.8% to other programs within SBE and 0.3% to programs in other NSF directorates.

Table 7– Co-funds

Cooperating Program	Economics Lead Program on Proposal		Other program is Lead Program on Proposal		Overall	
	# of Proposals	\$ Value	# of Proposals	\$ Value	Total Proposals	Total \$ Value
Method, Measure and Stats	26	\$2,520,514	2	\$99,052	28	\$2,619,566
Law and Social Sciences	11	\$912,389	2	\$137,504	13	\$1,049,893
Decision, Risk, and Management Sciences	8	\$837,980	7	\$672,954	15	\$1,510,934
Sociology	5	\$503,333	5	\$883,138	10	\$1,386,471
Political Science	4	\$582,319	1	\$118,170	5	\$700,489
Innovation and Organizational Sciences	3	\$322,814	1	\$150,000	4	\$472,814
Programs within SBE						\$0
Science of Science Policy	2	\$392,229	5	\$330,000	7	\$722,229
Cross-Directorate Activity Programs	2	\$126,642	2	\$138,622	4	\$265,264

Collaborative Research	1	\$38,900			1	\$38,900
IPDR-SBE	1	\$100,000			1	\$100,000
Geography and Spatial Sciences			2	\$192,000	2	\$192,000
<i>Programs outside of SBE</i>						
Algorithmic Foundations (CISE)			1	\$16,667	1	\$16,667
Eurocores			1	\$25,000	1	\$25,000
Physics: Education and Interdisciplinary Research			1	\$120,000	1	\$120,000
Office of Multidisciplinary Activities			1	\$44,560	1	\$44,560
TOTAL	63	\$6,337,120	31	\$2,927,667	94	\$9,264,787

Economics co-funds most extensively with Methodology, Measurement and Statistics, Law and Social Science, and Decision, Risk, and Management Sciences programs within SES, and more recently has begun to co-fund extensively with the new SBE program in Science of Science Policy (SciSIP). In each of these areas, the Economics program is co-funding with an NSF interdisciplinary program that includes research conducted by economists. The MMS program co-funds work in statistical methods and research methodologies. The co-review relationship with DRMS focuses on research in behavioral economics. Research on innovation is frequently co-funded with SciSIP.

In addition to these co-funded awards, the Economics Program funds some interdisciplinary projects entirely with Economics program awards. These are usually awards to economists working in interdisciplinary areas where there is no NSF program or awards for projects that were not rated highly enough by another program to qualify for that other program's limited funds.

Comments:

Although the amount of such funding is currently at a lower level than in some past years, the members of the committee are concerned about

<p>designating large amounts of funding for research on specific interdisciplinary/multidisciplinary topics without there also being a process for evaluating the quality of proposals in these areas relative to the quality of proposals in the permanent programs. This reiterates a concern expressed in the 2007 Committee of Visitors (COV) report.</p> <p>This concern is related to the larger question of whether SES funding is allocated in an appropriate fashion across program areas. This is among the most important issues facing senior SBE managers, but the existing COV structure is unfortunately organized in exactly the wrong way to address it – members are asked to review funding decisions within individual program areas, but there is no group that is asked to review the allocation of funding across program areas.</p> <p>We think NSF should be taking steps both to ensure the appropriate assessment of projects’ relative quality ex ante and to evaluate more rigorously the allocation of resources ex post. As an example of the former, rather than allocating a fixed amount of money to a specific interdisciplinary topic area, there could be a pot of money for which projects related to that topic area and other projects would compete. Solicitations could encourage projects on the stated topic, but the total amount of money awarded for projects on the topic would depend on the quality of the proposals received as compared to other submissions. (This may in fact already be occurring, but it was difficult for us to determine based on the information with which we were provided). As an example of the latter, for the next COV round, rather than being asked to evaluate the allocation of funding in a specific program such as Economics, committee members could be asked to evaluate the allocation of all funding flowing to economists.</p>	
<p>6. Does the program portfolio have an appropriate balance considering, for example, award size, single and multiple investigator awards, or other characteristics as appropriate for the program?</p> <p>A multiple-investigator project is one in which two or more investigators, either from a single institution or multiple institutions, collaborate on a single research project. Economics funds about the same number of multiple investigator and single investigator awards (144 and 146, respectively). During FY 2007–2009, Economics received a total of 425 project requests with multiple investigators and 482 project requests with a single investigator.</p> <p>Comments:</p>	<p>APPROPRIATE</p>

<p>The portfolio of projects funded exhibits a good balance between small projects and large projects. We would like especially to commend the steadfast support the program has provided for the Panel Study of Income Dynamics (PSID). The PSID absorbs a significant share of the budget of the Economics Program, but its importance to the economics profession and to a variety of other disciplines can hardly be overstated.</p>	
<p>7. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> Awards to new investigators? <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of awards to new investigators?</p> <p>NOTE: A new investigator is defined as an individual who has not served as the PI or co-PI on any award from NSF (with the exception of doctoral dissertation awards, graduate or postdoctoral fellowships, research planning grants, or conferences, symposia & workshop grants.)</p> <p>Comments:</p> <p>The program regularly makes awards to new investigators, though the funding rate for projects with at least one new PI (i.e., PIs that have not been previously funded by the NSF) is lower than the funding rate for projects submitted by PIs who have been previously funded by the NSF.</p> <p>The mean funding rate for projects with at least one new PI is approximately 23 percentage points lower than that of projects submitted by veteran PIs (25.4% vs. 48.3%). A similar trend is found NSF-wide, where proposals by new PIs have a mean funding rate approximately 12% lower than proposals by veteran PIs, 21.1% vs. 32.7%, respectively. However, proposals with at least one new PI account for a majority of the submissions received by the program in the past three years (approximately 71%). Economics received 646 project proposals with at least one new PI or Co-PI, and received 261 project proposals from prior PIs. Economics subsequently awarded 164 projects with at least one new PI and 126 projects with only prior PIs.</p> <p>As for the 26 ARRA funded proposals, 18 new PIs and Co-PIs were involved out of the total 40 PIs and Co-PIs funded (45% were new). For the lead PI, 54% of the ARRA funded proposals involved a new lead PI (14 out of 26).</p>	<p>APPROPRIATE</p> <p>APPROPRIATE</p>

<p>8. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Geographical distribution of Principal Investigators? <p>Comments:</p> <p>A majority of proposals received and awards made during FY 2007-2009 go to institutions in states with large numbers of Ph.D. granting institutions (e.g., Massachusetts, California, New York, Illinois, and Pennsylvania). Indeed, the correlation coefficient between number of proposals by state and number of Ph.D.s granted by state in (2008) is 0.81.</p> <p>The Experimental Program to Stimulate Competitive Research (EPSCoR) is a plan designed to fulfill the Foundation’s mandate to promote scientific progress nationwide. The EPSCoR program is directed at those jurisdictions that have historically received lesser amounts of NSF Research and Development (R&D) funding. In FY 2007–2008, twenty-five states, the Commonwealth of Puerto Rico and the U.S. Virgin Islands were eligible to participate. In FY 2009, the EPSCoR program added two more states (Iowa and Utah) to its jurisdiction. Each fiscal year, the Economics program pays particular attention to proposals submitted from EPSCoR states. Additionally, the EPSCoR program will occasionally co-fund meritorious proposals from EPSCoR states with the Economics program.</p> <p>The mean Economics funding rate for proposals from EPSCoR states is about 25 percentage points lower than for non-EPSCoR states (8.2% vs. 33.4%). The NSF-wide mean funding rate for EPSCoR states is 24.5%.</p>	<p>APPROPRIATE</p>
<p>9. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Institutional types? <p>Comments:</p> <p>A majority of both proposals submitted and awarded come from research-intensive schools and, to a lesser extent, other Ph.D. granting institutions. As might be expected, success rates are slightly higher than the Economics mean funding rate in the former and slightly lower than the mean in the latter.</p>	<p>APPROPRIATE</p>
<p>10. Does the program portfolio have an appropriate balance:</p> <ul style="list-style-type: none"> • Across disciplines and sub disciplines of the activity? <p>Comments:</p>	<p>APPROPRIATE</p>

<p>The breadth and balance of Economics funded research is reflected in the range of topics covered. Projects in economic theory, econometrics, macroeconomics, international, finance, industrial organization, resources, labor, public/regional, history, infrastructure, and experimental economics have been funded. The balance across subdisciplines seems to us to be appropriate.</p>	
<p>11. Does the program portfolio have appropriate participation of underrepresented groups?</p> <p>Comments:</p> <p>With regard to gender, roughly 28% of proposals submitted to Economics have “woman involvement” (i.e., women PIs or co-PIs.) This percentage is commensurate with the 29% of proposals with woman involvement NSF-wide. Funding rates for these proposals are slightly lower than the overall Economics funding rate (28% vs. 32% including FY 2009). While there is variability in the number of proposals with minority involvement per year, on average 12% of proposals submitted to Economics have minority involvement and the funding rate for these proposals closely matches the funding rate for the Economics proposals overall (30.2% versus 31.9%). NSF-wide on average, 10% of proposals have minorities involved, with a mean funding rate of 27%. PIs have the opportunity to note their minority status, but this is not required. Therefore, we do not know whether these reported results are biased</p>	<p>APPROPRIATE</p>
<p>12. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports.</p> <p>Comments:</p> <p>The program funds research in a wide variety of areas that are directly relevant to national priorities. Many of the projects described in the section on the program’s award portfolio (question A.3.4) are directly relevant to decisions about economic policy. We discuss some specific examples in greater depth in response to question B.1.</p>	<p>APPROPRIATE</p>
<p>13. Additional comments on the quality of the projects or the balance of the portfolio:</p>	

ARRA Specific Comments: Additional comments regarding the portfolio of ARRA awards addressing the NSF or program-specific priorities for ARRA funding?

According to the “National Science Foundation Agency Recovery Plan American Recovery and Reinvestment Act of 2009” (update May 2010) NSF’s ARRA supported investments in Research and Related Activities were to:

- 1) Directly benefit researchers, post-docs, and graduate and undergraduate students in institutions of higher education and other organizations throughout the Nation.
- 2) Support highly rated research proposals that would otherwise have been declined for lack of funds.
- 3) Contribute to new job creation and reinvestment.

The 26 ARRA proposals that the Economics Program funded with ARRA funds supported a total of a 40 PIs, 78 graduate students and 10 undergraduates. As noted earlier, the Economics funding rate for 2007 and 2008 was approximately 29.4%, whereas it was 37% in 2009. As such, some subset of the proposals funded under ARRA would not have been funded otherwise due to budgetary limits. Since in recent years large numbers of high-quality projects have not been funded, this increase in funding, albeit temporary, seems to us to have been very valuable.

A.4 Management of the program under review. Please comment on:

1. Management of the program.

Comments:

The NSF Economics Program is a very well run program. For many years, it benefited from having a well-respected long-term Program Director. That person retired in the summer of 2009. The new career Program Director clearly is continuing the strong tradition established by her predecessor. She is broadly knowledgeable about the field of economics and exhibits good sense in evaluating the quality of proposed research without imposing any apparent biases. She is an effective communicator and appears to be doing an excellent job of building bridges to other programs within the Directorate. We feel fortunate to have her in this position.

2. Responsiveness of the program to emerging research and education opportunities.

Comments:

The program appears to be receptive to funding new and promising areas of research.

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio.

Comments:

Given the large workload carried by the program staff, we are concerned that they have less time than would be desirable for outreach to the profession, coordination with other programs and other activities of strategic importance. For this reason, we encourage consideration of ways in which the routine processing of proposals might be streamlined. A specific suggestion, already advanced in response to question A.1.8, is that some procedure to expedite the processing of proposals that the program officer deems clearly unsuitable for NSF funding be considered.

4. Responsiveness of program to previous COV comments and recommendations.

Comments:

Most of the points raised by the prior COV – concerns about underfunding, lack of program involvement in broader initiatives such as the competitiveness initiative, and the stove-piped design of the COV process – were beyond the authority of the program staff to address. The same is true of the concern expressed by both the 2004 and the 2007 COVs about whether the relative allocation of funding to targeted initiatives versus standing programs is appropriate. While we agree that all of these are issues, we are especially distressed that the Directorate did not address the concern about the design of the COV process, which we view as both fundamental and something that clearly could be fixed. Program managers responded appropriately to those recommendations within their purview.

5. Additional comments on program management:

We are struck in looking at the program's operations by the heavy workload imposed on the Program Directors. Over the past two years, in particular, the number of proposals submitted has been very large. More generally, the model of co-funding proposals and collaborating on multidisciplinary projects imposes a burden on program staff that is not reflected in the number of submissions. To the extent that the proposal evaluation process could be streamlined, program staff could devote more of their time and energy to long-term planning and coordination activities.

In an attempt to understand the budget environment in which the program operates, we reviewed figures derived from the NSF accounting system on spending by line item within the Social and Economic Sciences (SES) Division. We were struck by the large number of different pots of money in the budget documents and the lack of transparency concerning the actual amounts available for research in economics. Table 8, which shows the 2009 SES budget, provides some sense of how opaque this budget is. One result of the confusing budget structure is that it is much more difficult

than it should be to answer such questions as how the funds available to SES or for research in economics have changed over time.

Table 8: SES Program Budget, 2009

FY 2009 Research and Related Activities Funding Level by Program (Social and Economic Science Division)					
Program	Operating Plan	Outstanding Commitments	Cumulative Obligations	Comm + Obligated	Available Balance
1157 MINORITY POSTDOC RSRCH FLW-NEW	\$480,000	\$0	\$480,000	\$480,000	\$0
1320 ECONOMICS	\$34,415,595	\$0	\$34,415,595	\$34,415,595	\$0
1321 DECISION RISK & MANAGEMENT SCI	\$14,230,596	\$0	\$14,230,596	\$14,230,596	\$0
1331 SOCIOLOGY	\$15,756,025	\$0	\$15,756,025	\$15,756,025	\$0
1333 METHOD, MEASURE & STATS	\$7,400,189	\$0	\$7,383,990	\$7,383,990	\$16,199
1335 IGERT FULL PROPOSALS	\$4,000,000	\$0	\$4,000,000	\$4,000,000	\$0
1353 Hist & Philosophy of SET	\$498,543	\$0	\$498,543	\$498,543	\$0
1371 POLITICAL SCIENCE	\$15,470,513	\$0	\$15,470,513	\$15,470,513	\$0
1372 LAW AND SOCIAL SCIENCES	\$8,493,272	\$0	\$8,493,272	\$8,493,272	\$0
1397 CROSS-DIRECTORATE ACTIV PROGR	\$2,147,599	\$0	\$2,147,599	\$2,147,599	\$0
1674 NANOSCALE: INTRDISCIPL RESRCH T	\$417,120	\$0	\$417,120	\$417,120	\$0
1675 NANOSCALE: SCIENCE & ENGIN CTR	\$942,594	\$0	\$942,594	\$942,594	\$0
1676 NANOSCALE: EXPLORATORY RSRCH	\$30,286	\$0	\$30,286	\$30,286	\$0
1691 BE: DYN COUPLED NATURAL-HUMAN	\$2,500,000	\$0	\$2,500,000	\$2,500,000	\$0
1738 ADVANCE - INSTITUTIONAL TRANSF	\$0	\$0	\$0	\$0	\$0
5376 INNOVATION & ORG SCIENCES(IOUS)	\$7,798,937	\$0	\$7,798,937	\$7,798,937	\$0
7172 GRADUATE RESEARCH FELLOWSHIPS	\$2,336,000	\$0	\$2,336,000	\$2,336,000	\$0
7179 GRAD TEACHING FELLOWS IN K-12	\$60,000	\$0	\$60,000	\$60,000	\$0
7219 NANOTECHNOLOGY UNDERGRAD EDUCA	\$100,000	\$0	\$100,000	\$100,000	\$0
7242 ECOLOGY OF INFECTIOUS DISEASES	\$250,000	\$0	\$250,000	\$250,000	\$0
7264 CCRI-DEC MAKING UNDER UNCERTA	\$1,998,196	\$0	\$1,998,196	\$1,998,196	\$0
7318 HSD - AGENTS OF CHANGE	\$6,000	\$0	\$6,000	\$6,000	\$0
7319 HSD - DYNAMICS OF HUMAN BEHAVI	\$0	\$0	\$0	\$0	\$0
7322 HSD - DEC, RISK & UNCERTAINTY	\$6,000	\$0	\$6,000	\$6,000	\$0
7326 HSD - GENERAL	\$174,236	\$0	\$174,236	\$174,236	\$0
7487 BROADENING PARTICIPATION	\$555,000	\$0	\$555,000	\$555,000	\$0
7567 SOC STUDIES OF SCI, ENG & TECH	\$121,643	\$0	\$121,643	\$121,643	\$0
7568 ADVANCE-PAID	\$770,000	\$0	\$770,000	\$770,000	\$0
7603 SCIENCE, TECH & SOCIETY	\$13,146,610	\$0	\$13,146,610	\$13,146,610	\$0
7626 SCIENCE OF SCIENCE POLICY	\$6,415,244	\$0	\$6,415,244	\$6,415,244	\$0
7705 EUROCORES	\$0	\$0	\$0	\$0	\$0
7711 INTERNATIONAL POLAR YEAR	\$120,000	\$0	\$120,000	\$120,000	\$0
7750 CDI TYPE I	\$698,030	\$0	\$698,030	\$698,030	\$0
7751 CDI TYPE II	\$0	\$0	\$0	\$0	\$0
7915 Ethics & Values of SET	\$520,047	\$0	\$520,047	\$520,047	\$0
8815 Studies of Policy Sci Eng Tech	\$222,973	\$0	\$222,973	\$222,973	\$0
9145 SPECIAL PROGRAMS-RESERVE	\$0	\$0	\$0	\$0	\$0
9199 UNDISTRIBUTED PANEL/IPA FUNDS	\$1,649,965	\$0	\$1,649,965	\$1,649,965	\$0
Grand Total	\$143,731,212	\$0	\$143,715,013	\$143,715,013	\$16,199

PART B. RESULTS OF NSF INVESTMENTS

B.1 OUTCOME GOAL for Discovery: “Foster research that will advance the frontier of knowledge, emphasizing areas of greatest opportunity and potential benefit and establishing the nation as a global leader in fundamental and transformational science and engineering.”

Comments:

NSF-supported research in economics includes work on a wide range of topics that help our understanding of how the economy works, and the impact of changing economic conditions and policies on workers, households and firms. This research has yielded applications with high payoffs in a multiplicity of areas. Many NSF projects fund basic science – helping us understand specific components of the complex U.S. economy that is increasingly integrated with a world economy.

Economics offers important examples of transformative research: work that has radically changed the framework and concepts we use to understand the world around us and how we can change it, as well as how subsequent research proceeds. Brief descriptions of a number of the important projects that the program has funded over the past three years were provided in response to question A.3.4. Here we discuss three important research threads – research that has had significant real world impacts – in somewhat more detail. It is important to put these highlights into context – many of the advances we discuss below build on the insights and developments from basic science projects in economics that are also supported by NSF.

Innovation and Adoption of New Technologies

The Economics Program has funded and co-funded a number of awards that have resulted in fundamental advances in our understanding of the economic factors that encourage innovation and the adoption of new technologies. Economics is now collaborating with NSF’s new programs in Science of Science and Innovation Policy (SciSIP) and Innovation and Organizational Sciences (IOS) to fund this kind of research. The achievements include new knowledge about important areas of innovation such as renewable energy technologies, internet communications and information technology.

Working with other SES programs, Economics has co-funded research by Melissa Schilling (0234075) relevant to understanding the adoption and potential of renewable energy technology. Schilling and her collaborator use theories about technology trajectories and data from R&D investments in renewable energy to measure the relative effectiveness of different kinds of energy technologies. Her results show that wind power and geothermal power are both more efficient than solar energy. What is more, further R&D investments in these two areas would yield big additional improvements in efficiency, while further investments in solar technology are less promising. The results appear to suggest that even a fraction of the federal funding spent on solar energy would be enough to make geothermal technologies less expensive than fossil fuels.

Shane Greenstein’s pioneering work on the economics of internet access and internet adoption (9986405) was funded by the program when the industry was still relatively small, well before programs like SciSIP and IOS began. His research has developed new methods for measuring price,

quantity, and quality in these markets. The results demonstrate how competition between internet service providers has resulted in lower prices for internet access and widespread adoption of internet based technology.

The work of Nicholas Bloom (Stanford) is an excellent example of what young researchers are accomplishing with NSF funding in this area. Bloom was awarded a CAREER grant in FY 2009 (0846194) which funds his research into the role innovation plays in determining economic productivity and growth. Bloom's research includes developing new data collection methods for measuring management practices and adoption of IT technologies in business. Using an innovative double-blind survey, he has been able to gather systematic evidence about the effects of specific management practices on the success and failure of firms. His research also has shed new light on the links between increased use of information technology and patterns of international trade between the US and less developed countries such as China. Other work contributes to our understanding of how uncertainty shocks affect decisions made by businesses that in turn contribute to macroeconomic fluctuations.

Market Design

Economics Program awards have been instrumental in supporting research in the burgeoning area of market design. Economists are increasingly using tools from economic theory to develop new methods for allocating scarce resources through markets and other allocation mechanisms. These new methods can then be 'wind-tested' in laboratory decision experiments. The experiments allow the researchers to test predictions from economic theory about how the new methods should work. These methods have been adopted for use in a very wide variety of applications. Data from the actual outcomes have been analyzed to evaluate how these mechanisms work in practice.

The program has funded a wide-ranging portfolio in this area, with impressive outcomes. Previous COVs have already highlighted the program's accomplishments in funding work on auction design, especially in the design of spectrum auctions. The program continued to make investments in this area during FY 2007 – FY2009. The last round of spectrum auctions used new methods developed by NSF-funded researchers Charles Holt (0094800) and Jacob Goeree (1551014) and raised approximately \$20 billion for the US Treasury. Awards to younger researchers such as Jonathan Levin (0112129, 0349278, and 0922297) have resulted in the development of new auction methods as well as data analysis that demonstrates the strong and weak points of the auction methods currently in use by US government agencies.

However, the impact of market design research goes far beyond government-run auctions. Awards to Tayfun Somnez (9904214), Yan Chen (0079001), and Atila Abdulkadiroglu (0449946), have resulted in the development of methods schools can use to implement 'school choice' programs in an efficient and fair manner. These methods have been adopted in major urban school systems such as Boston and New York City, as well as smaller districts such as Hartford CT and Portland OR. Alvin Roth (0616733, 0338619) and his collaborators have been supported by the Economics Program to develop new methods to match kidney donors to kidney recipients in donor chains. These chained donations allow people in need of transplant to get a kidney from a live donor, even if no one in their own family is a good genetic match, and the method has been adopted by major transplant centers.

Microfinance and Global Poverty

Possibly the single most important general topic in development economics is how to alleviate poverty in less developed countries. The NSF has been especially interested in projects that examined the emerging role of microfinance. Microfinance has spread very rapidly in the last decade, raising the hope that it has the power to lift millions out of poverty by providing them with access to capital. Loans are often given to group of five to ten women who are jointly liable for the loan to the group. Social networks are harnessed to diffuse information about microfinance, screen out bad borrowers, and provide monitoring.

NSF funded a project (Esther Duflo and Abhijit Banerjee, 0752935) that collected very detailed information on social ties between villagers in 50 Indian villages where a specific microfinance institution was starting, as well as specific features of the villages which could have been a source of exogenous variation in network structure. The variations in social networks across villages were shown to impact the ability of microfinance organizations to spread in villages, their tendency to exclude or include some pockets of the population, and their effectiveness. The findings have led to important practical advice for microfinance practitioners and for policy makers who are concerned that microfinance could exclude socially marginalized populations.

Another NSF funded award (Dean Karlan, 0424067) employed the relatively novel approach of using field experiments in South Africa to reveal fundamental elements of consumer choice and market micro structure. There were three projects, designed to examine the effect of a commitment savings product on household savings, the effects of interest rates on hidden behavior, and the impacts of access to credit on marginal borrowers. The results from this award have important implications for decisions on whether to allocate resources to microcredit, what policies regarding interest rates should be implemented or enforced, what loan product rules lead to more sustainable financial institutions with deeper outreach to the poor, and whether financial institutions should be encouraged to develop micro savings products geared to help individuals commit to save.

A third award (Christopher Udry, 0079115) used Ghana as a test case to examine social networks, financial markets and household organization in a rural economy characterized by rapid technological innovation and stress on land resources. In the survey region, the farming system was rapidly changing from a cassava-maize intercrop to production of pineapples. This shift involved a set of new technologies including intensive use of agricultural chemicals where none had been used in the previous farming system. The results of the study indicated that variation in wealth was an important determinant of pineapple cultivation. The PI used data on financial flows, along with expenditure, assets and time use panel data to demonstrate that capital constraints influenced the adoption of new chemical decisions. The importance of alleviating these capital constraints leads to the potential policy significance of microfinance to support pineapple production.

B.2 OUTCOME GOAL for Learning: *“Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens.”*

Comments:

NSF-supported research provides several sources of support for training and education of undergraduate and graduate students in economics. For individual research awards, about 13 percent of total (direct plus indirect) costs are allocated directly to support graduate research assistants and another 1 to 2 percent of total costs are for postdoctoral fellows and undergraduate research assistants.

In addition to individual research awards, the Economics Program enhances the training and education infrastructure with a number of specific projects. For example, NSF awards have supported the American Economic Association (AEA) Summer Training Program since 1997 (Steigerwald 0755515). During the summer program's nine-week period, participants take courses and conduct research at two levels: Foundations (advanced undergraduate and beginning master's level coursework) and Advanced (master's level coursework). The 2008 AEA Summer Training Program admitted 24 students. (The admittance number was much lower than for past programs due to a lack of funding.) Of these, 45% were African-American, 53% were Hispanic, and 30% were female. Another indicator of the efficacy of the AEA Summer Training Program is the progression of past participants in the program through doctoral programs. Of the 13 that participated in the Advanced Level program, 77% are expected to progress to a PhD.

Game theory is a contender for becoming the central theory in economics and related social sciences. Broadly speaking, a game is an interactive situation in which everyone's incentives depend on their own and others' actions. Games have been used to model a wide variety of environments, such as collective action problems, market pricing, auctions, committee voting, family decisions, organizational behavior, and contract law negotiations. NSF supported (Holt 0094800) the creation of VEconLab, a virtual collaboratory that coordinates web-based teaching, research, and programming activities involving the investigators and other researchers who decide to post and share their work. The central website contains a set of useful computer programs and a data base of interdisciplinary experimental results, structured to stimulate further theoretical work that is guided by carefully documented empirical regularities. The use of this virtual collaboratory for teaching and mentoring is improving the quality of education in the social and behavioral sciences. The virtual collaboratory also enables researchers throughout the world to work together in the design of new laboratory experiments in the social and behavioral sciences by developing and deploying an advanced cyberinfrastructure.

B.3 OUTCOME GOAL for Research Infrastructure: “Build the nation’s research capability through critical investments in advanced instrumentation, facilities, cyberinfrastructure and experimental tools.”

Comments:

The Economics Program has made long-term commitments to projects that collect data for broad use by researchers across the SBE sciences. Many of these projects are co-funded with other SES programs. The largest of these projects is the Panel Study of Income Dynamics (PSID) (Award 0518943) which the Program has funded since the 1980s. The PSID is a longitudinal study of a nationally representative sample of U.S. families that was initiated in 1968. The PSID is the only existing data set that combines a nationally representative sample, repeated interviews of the same

participants for a significant period of time, and a self-regenerating sample design. The PSID's innovative design and long-term panel have made it a unique and invaluable resource for many questions in SBE and health sciences. For example, researchers using the PSID data have been able to study aging in the context of an individual's entire family structure and the PSID's Child Development Supplement has allowed researchers to measure how family experiences affect children's well being. The PSID has been invaluable in measuring the intergenerational persistence of income, education, and behavior.

The Program also supports projects designed to give researchers better access to unique kinds of data. The awards that fund the establishment of regional Census Research Data Centers such as the Minnesota RDC (0851417) are examples. Researchers using any of these centers have access under carefully controlled conditions to highly confidential administrative data sets. These data are a valuable tool for many SBE scientists. For example, John Friedman, Raj Chetty, Emmanuel Saez, and collaborators have been funded by NSF to analyze data available at these centers to measure the effects of kindergarten achievement on adult wages (0645396, 0850631 and 0617737).

Other data initiatives include Peter Lindert's work to collect a 700 year sequence of data on prices and incomes across the globe (0922531 and 0649062). This is an excellent example of a project that began with funding from NSF's HSD initiative that has continued with funding from cooperating NSF programs.

PART C. OTHER TOPICS

C.1. Please comment on any program areas in need of improvement or gaps (if any) within program areas.

In examining the portfolio of projects across areas within the Economics Program, the COV did not find areas of imbalance. However, the overall level of funding for economics (especially in terms of core funding) is low and this means that many high quality projects cannot be funded.

C.2. Please provide comments as appropriate on the program's performance in meeting program-specific goals and objectives that are not covered by the above questions.

C.3. Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

We are concerned that the allocation of funds across programs within SES (like the allocation of funds between large interdisciplinary/multidisciplinary projects and the traditional discipline-based programs) is not being done on the basis of a careful examination of the relative value of funds in different areas. This task is clearly difficult but there is also clearly room for improvement. For example, allocating an additional supply of funds in equal dollar amounts across a set of programs of highly disparate size is difficult to justify. When additional ARRA funding became available in 2009, for example, the initial step was to add \$3 million to the budgets of all eight standing programs, including all from the

Methodology, Measurement and Statistics program (2008 budget of \$3.7 million, an 82 percent increase) to the Economics program (2008 budget of \$24.4 million, a 12 percent increase). We do not mean to suggest that the additional funding for MMS was necessarily unwarranted or that the projects it supported were not of high value. Rather, our concern is that, As best we can tell, the decision to add the same amount of money to every program's budget was not based on well-reasoned criteria.

C.4. Please provide comments on any other issues the COV feels are relevant.

C.5. NSF would appreciate your comments on how to improve the COV review process, format and report template.

We believe that the NSF should have an interest in evaluating how research done by economists is funded, rather than simply in evaluating how the dollars in the budget of the Economics program are allocated. To this end, we suggest that the NSF consider restructuring the COV process so that COVs are given the charge of examining all research funding within a discipline rather than focusing only on research funding decisions at the program level.

On a smaller point, we would note that some of the questions that the members of the COV are asked to address seem inappropriate given their expertise and resources. In particular, if the NSF needs to have answers to questions such as whether both merit criteria are being addressed in individual reviews or panel summaries or whether conflict of interest policies are being followed, it would be more appropriate to ask a team of auditors to conduct a systemic review of the relevant documents rather than to pose these questions to the COV.

Program Specific Questions:

- (1) What do you see as the likely 'big new ideas' in Economics over the next 5 years and the next 10 years?**
- (2) Where should we target our efforts for improvement? Are there process improvements we should make, or kinds of awards/funding opportunities we should try to create?**

The potential payoff to basic economic research is enormous. Economic research has the potential to identify ways to significantly alleviate extreme poverty around the world; to reduce the chances of the recurrence of macroeconomic crises that can leave millions unemployed; to point to improved ways of investing in human capital and encouraging the adoption of innovations, and so lead to higher standards of living; and much more. The NSF clearly should be funding research by economists that contributes to our understanding of these issues and our ability to address them, and there may well be value in identifying key areas in which research is needed.

Having said this, strong efforts to direct research into specific areas seem likely be counterproductive. While we have opinions and conjectures about possible directions of research in economics, we believe that the dominant model of funding should be an open and eclectic evaluation of all types of research ideas. The proposal-driven model of funding has been extremely successful in the past – and the Economics Program specifically has an outstanding record of funding new areas of research – and we have every expectation that the opening up of new areas of research that address important societal concerns will be apparent in the submissions received by the Economics Program. The Economics

Program has an outstanding record of funding new areas of research. But we do not know of cases in which the initial impetus for those areas came from the Economics Program.

There are clearly broad areas where it is important that there be an ongoing portfolio of research. One broad area where we believe that it is particularly important to fund research broadly and without preconceptions is macroeconomics and finance. The global economic crisis that began in 2007 has opened up a host of new issues of enormous importance both for basic research and public policy. As a result, macroeconomics and finance will surely change substantially. But it is too soon to know precisely how they will change. For that reason, we think it especially important that the NSF be willing to fund high-risk projects in these areas and that it fund projects exploring a large number of questions using a mix of different approaches. Some potentially important areas within macroeconomics and finance include: the sources, measurement and regulation of systemic risk, and of financial instability more generally; the channels and magnitude of the transmission of credit market disruptions to the real economy; the development of rich, high-quality, real-time longitudinal data on firms; and the analysis of policies for macroeconomic stabilization in a low-inflation environment. But again, we cannot say more specifically exactly where future breakthroughs are likely to occur.

At a more micro level, economic models of individual decision-making are increasingly taking into account (1) possible limitations of human cognition such as incorrect perceptions of risk, hindsight bias, hyperbolic discounting, and endowment effects; and (2) effects on behavior associated with the rewards and penalties that may flow from interactions with others, operating through mediating mechanisms such as the market and the legal or legislative process, or more informally through career concerns, reputation, status, social learning, evolutionary pressure, and social and cultural norms. Recognition of considerations in the former category has resulted in greater cross-talk between economics and psychology and brain science, while recognition of informal incentives seems likely to involve deeper interaction of economists with scholarship in anthropology and sociology. Such models of individuals and their local market and social interactions will then lead to more aggregate models of economies and societies in which the impact of different types of cognitive limitations and social incentives can be assessed.

A third potentially transformative area lies with research on the formation of human capital. Human capital historically has been treated as essentially unidimensional. Increasingly, however, scholars are recognizing that individuals may possess multiple types of skills, both cognitive and noncognitive, and to varying degrees. Further, the acquisition of this wide range of skills derives not only from formal education but also from other experiences that may occur from early childhood through adulthood. Likewise, workers' interactions with their employers are much more complicated than providing their time in exchange for pay. Understanding the effects of early childhood experiences on human capabilities will of necessity proceed on the interface between economics and psychology. Understanding worker-firm interactions will require examinations of such issues as the acquisition of human capital over workers' entire lifetimes and the importance of different arrangements for risk-sharing, work-life balance, and career paths. Different institutional models for investment in human capital and worker-firm interactions may have very different implications for economic growth and the distribution of the fruits of that growth across the population.

SIGNATURE BLOCK:

For the Economics COV
Katharine G. Abraham, Chair
Jennifer Reinganum
David Romer

Innovation and Organizational Sciences

**FY 2010 REPORT FOR
NSF COMMITTEES OF VISITORS (COVs)**

Date of COV: September 22-24, 2010
Program/Cluster/Section: Innovation and Organizational Sciences / Economics, Decision, and Management Sciences
Division: Social and Economic Sciences
Directorate: Social, Behavioral and Economics Sciences
Number of actions reviewed: Awards: 30 projects Declinations: 30 projects Other: 0
Total number of actions within Program/Cluster/Division during period under review: Awards: 35 projects Declinations: 172 projects Other: 13
Manner in which reviewed actions were selected: Only competitive proposals were considered. Continuous grants and supplements were not considered. 10 awards and 10 declines from each of the three fiscal years (60 actions total) were randomly selected (proportional to the number of standard proposals, CAREER proposals, etc) and provided to the COV members for review. COV members were permitted to request additional proposals.

PART A. INTEGRITY AND EFFICIENCY OF THE PROGRAM’S PROCESSES AND MANAGEMENT

Briefly discuss and provide comments for *each* relevant aspect of the program's review process and management. Comments should be based on a review of proposal actions (awards, declinations, and withdrawals) that were *completed within the past three fiscal years*. Provide comments for *each* program being reviewed and for those questions that are relevant to the program under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

A.1 Questions about the quality and effectiveness of the program’s use of merit review process.

Provide comments in the space below the question. Discuss areas of concern in the space provided.

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE⁴³
<p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>Comments: The number of ad hoc reviews per proposal has continued to trend upwards slightly over time. Although this undoubtedly requires considerable effort on the part of the program director, we believe that these reviews provide useful direction for the panel members and add to the quality of the decision-making process.</p>	<p>Yes</p>
<p>2. Are both merit review criteria addressed</p> <p>a) In individual reviews?</p> <p>b) In panel summaries?</p> <p>c) In Program Officer review analyses?</p> <p>Comments: According to the director's report, over 70% of the reviewers followed the form asking them to address these explicitly. Most of those that did not follow the form also addressed each. In all of the reviews we examined, reviewers did address both criteria, although as described, these were not always listed in the appropriate section of the review form.</p> <p>All of the panel summaries we examined explicitly addressed both criteria.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p>
<p>3. Do the individual reviewers provide substantive comments to explain their assessment of the proposals?</p> <p>Comments: In all of the reviews we examined, the reviewers provided an adequate explanation for their assessment, although there was (not surprisingly) high</p>	<p>Yes</p>

⁴³ If "Not Applicable" please explain why in the "Comments" section.

<p>variance in the amount of detail. Many appeared to be developmental in their comments; perhaps this could be further encouraged when requests for review are sent.</p>	
<p>4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)?</p> <p>Comments: We did not systematically compare summaries for decisions where the panel was in consensus versus those with dissensus. However, our review of the summaries indicates that the rationale for the decision was clear, both for proposals that were accepted and those declined.</p>	<p>Yes</p>
<p>5. Does the documentation in the jacket provide the rationale for the award/decline decision?</p> <p>(Note: Documentation in jacket usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), program officer review analysis, and staff diary notes.)</p> <p>During FY 2009, NSF permitted reversal of a declined decision for funding through ARRA for proposals declined after October 1, 2008. (NOTE: This question does not apply to programs for which the reversal decline option was not used.)</p> <p>i) Were the reversals of the decision to decline based on both the high quality* of the reviews received on the initial submission and the lack of available funding at the time the origin was made?</p> <p>*Rated "Very Good or above" or the functional equivalent by review panels.</p> <p>ii) Is documentation provided, including a revised Review Analysis, to support the award decisions?</p> <p>Comments: The program did not reverse any declined decisions. Taken as a whole, the individual reviews, panel summaries and staff notes make the basis for final decisions clear.</p>	<p>Yes</p> <p>N/A</p>

<p>6. Does the documentation to PI provide the rationale for the award/decline decision?</p> <p>(Note: Documentation to PI usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), and, if not otherwise provided in the panel summary, an explanation from the program officer (written or telephoned with diary note in jacket) of the basis for a declination.)</p> <p>Comments: Access to all reviews and the panel summaries should enable PIs to understand the proposal review outcomes. In response to our questions, the program director indicated that applicants whose proposals are declined but judged to have significant promise with development are given a rating that encourages resubmitting a proposal that addresses concerns raised in the first review process. The number of successful resubmissions suggests that this is quite effective.</p>	<p>Yes</p>
<p>7. Is the time to decision appropriate?</p> <p>Note: Time to Decision --NSF Annual Performance Goal: For 70 percent of proposals, inform applicants about funding decisions within six months of proposal receipt or deadline or target date, whichever is later. The date of Division Director concurrence is used in determining the time to decision. Once the Division Director concurs, applicants may be informed that their proposals have been declined or recommended for funding. The NSF-wide goal of 70 percent recognizes that the time to decision is appropriately greater than six months for some programs or some individual proposals.</p> <p>Comments: The proportion of proposals reviewed within six months of submission - over 90 percent - easily exceeds NSF's annual performance goals. Average dwell times have increased from 2007-09 by about two weeks, but this is most likely due to complications associated with the ARRA additional funding.</p>	<p>Yes</p>

8. Additional Comments

a) **Additional comments on the quality and effectiveness of the program’s use of merit review process.**

The process provides clear feedback to the PIs and takes into account evaluative input from a variety of sources; thus it is both transparent and provides well-informed assessments. Overall, we judge the process to be of very high quality.

b) **To what extent does the documentation in the jacket or otherwise available provide the rationale for use of ARRA funding?**

The ARRA funds enabled the program to fund additional grants, but there is no evidence that the quality of funded projects was lowered at all. As indicated by data on the program director's report (see p. 7), mean review scores of funded projects during the year of ARRA funding were essentially unchanged from those funded in previous years; likewise, the means of non-funded projects were no lower than in the past. We note that the program did not make any reversals of a previous decline decision, also suggesting that high standards were held in the review process when additional funds were available.

A.2 Questions concerning the selection of reviewers. Provide comments in the space below the question. Discuss areas of concern in the space provided.

SELECTION OF REVIEWERS	YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE 44
<p>1. Did the program make use of reviewers having appropriate expertise and/or qualifications?</p> <p>Comments: IOS proposals are broad, varied and frequently interdisciplinary, requiring a wide breadth of scientific knowledge for assessment. The panels have the relevant areas of expertise, well represented from organization behavior,</p>	Yes

⁴⁴ If “Not Applicable” please explain why in the “Comments” section.

<p>organization theory, strategy, entrepreneurship and innovation, knowledge management, and information technology. Environmental submissions have been growing, and sustainability submissions are welcome; reviewers are not easy to find in these areas.</p> <p>Expertise in methods is always required in qualitative methods, survey methods, structural equation modeling, and social network analysis among others. Complexity methods are becoming more common in the submissions pools.</p>	
<p>2. Did the program use reviewers balanced with respect to characteristics such as geography, type of institution, and underrepresented groups?</p> <p>Note: Demographic data is self reported, with only about 25% of reviewers reporting this information.</p> <p>Comments:</p> <p>Seventy per cent of the reviewers are at PhD granting institutions. Thirty six percent are women which is slightly higher than the average proportion of women faculty at research universities. The geographical distribution is similar to the population distribution. Reviewers who are minority members have increased significantly from less than 3 % to nearly 10%.</p>	<p>Yes</p>
<p>3. Did the program recognize and resolve conflicts of interest when appropriate?</p> <p>Comments:</p> <p>Reviewers are queried initially, and panelists are briefed in depth on the conflict of interest policies for NSF. If there is a potential conflict, either appearance or in fact, the reviewer must recuse herself from the relevant proceedings.</p>	<p>Yes</p>
<p>4. Additional comments on reviewer selection:</p> <p>The selection process is conducted with care for the scientist and in the interest of bias free support of the best science. The interdisciplinary nature of innovation requires reviewers who can appreciate and assess broad concerns and what is a contribution to our understanding with broader policy implications.</p>	

A.3 Questions concerning the resulting portfolio of awards under review. Provide comments in the space below the question. Discuss areas of concern in the space provided.

<p align="center">RESULTING PORTFOLIO OF AWARDS</p>	<p align="center">APPROPRIATE, NOT APPROPRIATE⁴⁵, OR DATA NOT AVAILABLE</p>
<p>1. Overall quality of the research and/or education projects supported by the program.</p> <p>Comments:</p> <p>The quality of the research and education projects supported by the program is excellent. The PIs receiving awards from the IOS program include some of the very best known and most productive researchers in the disciplines concerned with organizations and innovations, while also providing support for deserving early-career scholars.</p>	<p align="center">Appropriate</p>
<p>2. Does the program portfolio promote the integration of research and education?</p> <p>Comments:</p> <p>The program promotes the integration of research and education in a variety of ways, for instance by participating in NSF's early career development awards program and the Research in Undergraduate Institutions program. The IOS program also funds undergraduate, graduate, and post-doctoral students through regular research proposals.</p>	<p align="center">Appropriate</p>
<p>3. Are awards appropriate in size and duration for the scope of the projects?</p> <p>Comments:</p> <p>IOS projects vary considerably in scope from short duration workshop</p>	<p align="center">Appropriate</p>

⁴⁵ If "Not Appropriate" please explain why in the "Comments" section.

<p>proposals to five-year career proposals. Most regular awards are of intermediate duration, which is appropriate for many social science projects. The size of IOS awards generally tracks project scope. In addition, the IOS program carefully monitors projects to ensure that budgets conform to guidelines and sometimes requests relatively minor reductions. Investigators are asked to prepare budget impact assessments, providing a safeguard against inappropriately high cuts. Occasionally, reviewers have suggested that a project receive higher levels of funding or longer project duration than originally requested, and the program accommodated those requests when appropriate.</p>	
<p>4. Does the overall program portfolio (including ARRA funded awards) have an appropriate balance of innovative/potentially transformative projects?</p> <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of innovative/potentially transformative projects?</p> <p>Comments:</p> <p>The IOS program has funded a number of innovative/potentially transformative projects, particularly in the area of methods (e.g., modeling approaches). Among the innovative methods projects funded by the program are several that are developing tools applicable to social and behavioral researchers whether or not their research would be appropriate for the IOS program.</p> <p>The ARRA funded portfolio included: platform driven innovation, the dynamics of organizational routines, incentives in the workplace, and a CAREER award on explorations of complex social phenomena. We find these awards an appropriate balance of innovative projects.</p>	<p>Appropriate</p> <p>Appropriate</p>
<p>5. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Inter- and Multi- disciplinary projects? <p>Comments:</p> <p>IOS is an inherently interdisciplinary program, attracting scholars from many fields and supporting projects that draw on a range of disciplines for their theoretical grounding and methodological tools. Funded projects address topics studied by scholars in multiple fields, including: knowledge creation and transfer, environmental issues, organizational performance, and social</p>	<p>Appropriate</p>

<p>networks. The interdisciplinary nature of the program is clear not only from the topics of funded projects but also from the composition of the review panels that the program assembles to review its proposals. For example, panelists serving during the FY 2007-2009 time period represented the fields of strategy, sociology, management, industrial engineering, economics, communication, marketing, etc. Another indicator of the interdisciplinary nature of the program is the IOS program's high incidence (approximately 40%) of co-reviewing proposals with other programs.</p>	
<p>6. Does the program portfolio have an appropriate balance considering, for example, award size, single and multiple investigator awards, or other characteristics as appropriate for the program?</p> <p>Comments:</p> <p>The IOS program funds projects that vary in size and number of investigators. The program funded slightly fewer single investigator proposals than multiple investigator proposals over the review period, which is appropriate for the program.</p>	<p>Appropriate</p>
<p>7. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Awards to new investigators? <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of awards to new investigators?</p> <p>NOTE: A new investigator is defined as an individual who has not served as the PI or co-PI on any award from NSF (with the exception of doctoral dissertation awards, graduate or postdoctoral fellowships, research planning grants, or conferences, symposia & workshop grants.)</p> <p>Comments:</p> <p>In general, proposals with experienced investigators are more successful than those with new investigators. However, in the IOS program the gap between awards to projects with only experienced PIs and those with at least one new investigator is quite small. In addition, the program is attracting an increased number of proposals from new PIs.</p> <p>More than 3/4 of the IOS program's ARRA awards went to new PIs, suggesting that ARRA funds increased new PIs' participation in the program.</p>	<p>APPROPRIATE</p>

<p>At the same time, there was no decrease in the average review scores of funded proposals during the ARRA year compared to the year before or after, indicating that the ARRA awards did not result in a decrease in IOS award quality.</p>	<p>APPROPRIATE</p>
<p>8. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Geographical distribution of Principal Investigators? <p>Comments:</p> <p>As is to be expected, most of the awards by the IOS program go to investigators in states that grant large numbers of PhDs. The IOS program works with the EPSCor Program (Experimental Program to Stimulate Competitive Research) to co-fund highly reviewed proposals from investigators in states that have historically received lower levels of NSF funding.</p>	<p>Appropriate</p>
<p>9. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Institutionnel types? <p>Comments:</p> <p>As is to be expected, most of the proposals submitted to and funded by the IOS program come from PhD granting institutions.</p>	<p>Appropriate</p>
<p>10. Does the program portfolio have an appropriate balance:</p> <ul style="list-style-type: none"> • Across disciplines and sub disciplines of the activity? <p>Comments:</p> <p>IOS program awards are very diverse and interdisciplinary, as discussed above.</p>	<p>Appropriate</p>
<p>11. Does the program portfolio have appropriate participation of underrepresented groups?</p> <p>Comments:</p> <p>The IOS program receives a significant proportion of proposals with women</p>	<p>Appropriate</p>

<p>investigators and has an excellent record of funding women investigators. It is difficult to draw valid conclusions about the participation of underrepresented minorities, because of the small numbers involved and missing self-report data on ethnicity.</p>	
<p>12. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports.</p> <p>Comments:</p> <p>Organizations are central actors in society and the economy: government policies, firm productivity educational attainments, health care outcomes are all produced through organizations. The centrality of organizations in society and the economy was observed many years ago by sociologist Max Weber, whose work, among other classic sociologists, was examined in a book, edited by Paul Adler, that was an outgrowth of a workshop funded by the IOS program during the period under review.</p> <p>Startups and entrepreneurial organizations, including small and family owned businesses, are believed to be essential to economic recovery. It is also the case the organizations are the context in which many economic <i>problems</i> originate: the cases of Enron and Bear Stearns come easily to mind. Among the organizational-level phenomena that are significantly related to the current challenges of innovation and national competitiveness are the globalization of business activity, off-shore outsourcing, and the emergence of new, networked organizational forms.</p> <p>In this context, it is worth noting that his year's Nobel prize in economics went to two scholars who focus on <i>organizations</i>, Oliver Williamson and Elinor Ostrom. Williamson's work has explored organizations as an alternative to markets as a context of economic activity, while Ostrom's work has examined the role of institutional rules in the regulation of environmental commons. In modern societies like the US, organizations such as government agencies are the key vehicles by which rules are created, monitored, and enforced.</p> <p>IOS singular focus on both innovation and organization science thus makes it uniquely situated to address many of today's key social issues through scientific study. It is widely acknowledged that innovation is the key to national competitiveness, as highlighted in a number of government reports, including the Administration's Strategy for American Competitiveness and the NSF's own report on "Science and Engineering Indicators." IOS in one of several SES programs that addresses innovation, but it is the <i>only</i> IOS program that explicitly focuses on organizational level phenomena.</p>	<p>Extremely relevant</p>

Studies funded by IOS address an array of other issues that are of national priority as well, focusing on organizationally-relevant aspects. For example, improving education achievements of U.S. students is clearly a policy priority in the U.S. (e.g., "Charter schools: The role of charter schools in improving education," 2009 Rand Corporation, RB 9428). An IOS funded study (Renzuilli, #0924740) addresses this topic. Likewise, climate change is an issue that has been given substantial attention in recent years (see Fourth Assessment Report: Climate Change 2007, Intergovernmental Panel on Climate Change 2010 http://www.ipcc.ch/publications_and_data/ar4/wg2/en/contents.html). In line with this, IOS has funded research on technologies and climate change (Hultman 2009).

Moreover, the IOS program is directly relevant to the top priorities of the SBE Directorate, including *innovation*, *interdisciplinarity* and *infrastructure*, and it funds research on questions related to several other Directorate priorities, including *human resource development* and *environmental issues*. IOS collaboration with NSF programs outside the SES Directorate is another indicator of the centrality of the IOS program.

13. Additional comments on the quality of the projects or the balance of the portfolio:

ARRA Specific Comments: Additional comments regarding the portfolio of ARRA awards addressing the NSF or program-specific priorities for ARRA funding?

Of the IOS Program's 6 ARRA awards, two awarded projects directly relate to innovation, two awarded projects build scientific infrastructure, and the remaining two projects focus on organizational behavior and performance. Since organizations are the primary source of economic value creation, understanding the dynamics of organizational behavior and the determinants of organizational performance is central to the national challenge of international competitiveness.

A.4 Management of the program under review. Please comment on:

1. Management of the program.

Comments:

The innovation and organization science program requires that the review and award process is well done and follows the policies of NSF. We have reviewed these issues in some detail above. The second mandate is to reach out to the scientific community beyond the disciplines to support research

in innovation which is usually interdisciplinary. Further, the program is establishing a stronger base in complexity sciences and new methods in social science, e.g., agent based modeling.

The IOS management team has taken the initiative to reach out and coordinate with other NSF programs to co-review and fund some proposals jointly. We are very supportive of the policy that a proposal can be funded jointly or by either program which assures the proposal is given full consideration, but at the same time, is not given undue consideration just due to its interdisciplinary nature. We find these initiatives are important to the mission and new challenges for the science in innovation and organization science.

2. Responsiveness of the program to emerging research and education opportunities.

Comments:

There is a good balance of the funding of research proposals which include graduate student support and post docs, CAREER proposals, topical workshops and conferences on emerging issues. IOS takes a broad view of science support.

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio.

Comments:

IOS has taken on new areas and challenges and then developed agenda to further these research topics. In our assessment, it has taken a forward view of science and put forth a corresponding program of activities, both for itself and in the programs it fosters.

4. Responsiveness of program to previous COV comments and recommendations.

Comments:

The previous COV comments suggested that IOS encourage innovation and organizational research and the IOS team has done so.

5. Additional comments on program management:

NONE

PART B. RESULTS OF NSF INVESTMENTS

The NSF mission is to:

- promote the progress of science;
- advance national health, prosperity, and welfare; and
- secure the national defense.

To fulfill this mission, NSF has identified four strategic outcome goals: Discovery, Learning, Research Infrastructure, and Stewardship. The COV should look carefully at and comment on (1) noteworthy achievements based on NSF awards; (2) ways in which funded projects have collectively affected progress toward NSF's mission and strategic outcome goals; and (3) expectations for future performance based on the current set of awards.

NSF investments produce results that appear over time. Consequently, the COV review may include consideration of significant impacts and advances that have developed since the previous COV review and are demonstrably linked to NSF investments, regardless of when the investments were made.

To assist the COV, NSF staff will provide award "highlights" as well as information about the program and its award portfolio as it relates to the three outcome goals of Discovery, Learning, and Research Infrastructure. The COV is not asked to review accomplishments under Stewardship, as that goal is represented by several annual performance goals and measures that are monitored by internal working groups that report to NSF senior management.

B. Please provide comments on the activity as it relates to NSF's Strategic Outcome Goals. Provide examples of outcomes ("highlights") as appropriate. Examples should reference the NSF award number, the Principal Investigator(s) names, and their institutions.

B.1 OUTCOME GOAL for Discovery: "Foster research that will advance the frontier of knowledge, emphasizing areas of greatest opportunity and potential benefit and establishing the nation as a global leader in fundamental and transformational science and engineering."

Comments:

Many of the funded projects offer important advancements in our understanding of fundamental organizational processes and practices that contribute to organizational innovation and successful competition. For example, research by DiTomaso and Post (# 0852671), examining organizational factors that enable R&D teams to capture the benefits of having individuals with different cognitive/learning styles work together, and to avoid problems of intergroup conflict that often occur with team diversity, contains important insights for work on basic group processes. Likewise, Rothaermel's project (#0545544), comparing two strategies for successful innovation among biotech firms, recruiting outstanding scientists v. creating alliances and acquiring other firms, importantly advances work on strategic choice.

B.2 OUTCOME GOAL for Learning: “*Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens.*”

Comments:

The program has supported work by researchers studying a very wide array of topics and located in a broad range of educational institutions (see, for example, Brown, UC Berkeley #926746; Neff, University of Washington, #823338; Shwom, Michigan State, #724905; Fiore, University of Central Florida, #915602, Argote, Carnegie-Mellon University, #823283, Post, Lehigh University, #852671). Women and new researchers are well-represented in awardees. There are relatively few minorities who received awards, but there were also relatively few minorities among applicants. This diversity of scholars and scholarship suggests the wide-ranging contributions of the program to the development of a high-quality academic workforce.

Findings from supported studies have been disseminated in a range of outlets, including Sociological Methodology (Rossman, 2008, #724914), MIS Quarterly Executive (Majchrzak, Cherbackov and Ives, 2009, #725088), Journal of Behavioral Health Services and Research (Hovmand, 2007, #724577). Books, such as Dobbins's *Inventing Equal Opportunity*, address issues that are relevant to HR practitioners, lawyers, as well as academic researchers. In addition, a number of studies have involved developing tools and approaches to enhancing undergraduate science education (e.g., Hovmand, #724577; Dodds, 2009 #846668).

A career award made during the pervious review period (Schilling) has resulting during the period of this review in numerous articles in top quality refereed journals, including Management Science, Organization Science, and Strategic Management Journal. This research focused on interfirm relations, networks, and organizational learning—all topics relevant to the mission of the IOS program.

Thus, the program is clearly contributing to the expansion of the knowledge on many fronts, and enhancing the dissemination to a variety of constituents.

B.3 OUTCOME GOAL for Research Infrastructure: “*Build the nation’s research capability through critical investments in advanced instrumentation, facilities, cyberinfrastructure and experimental tools.*”

Comments:

- During the review period, IOS funded a number of projects that developed research infrastructure in the form of databases and methods. One project is developing a representative sample of startup enterprises, filling a gap in data resources about entrepreneurial companies (0919772, Curtin, U of Michigan). Another IOS-funded database project will support studies of globalization, innovation, and employment (0926746, Brown, U Cal Berkeley). An investigator who received an IOS career

award has been developing an online experiment infrastructure to support a variety of sociological investigations (0846668, Dodds, U of Vermont). In addition, IOS has co-funded infrastructure development projects with SciSip (e.g., 0915236, Katila, Stanford).

PART C. OTHER TOPICS

C.1. Please comment on any program areas in need of improvement or gaps (if any) within program areas.

The IOS program fills a unique role within the NSF as the only program to focus on organization-level issues. The fact that it also focuses on innovation links the program even more closely to the key priorities of the Foundation.

The IOS program has made important strides since it became independent of its earlier collaboration with the Engineering Directorate. However, it has not grown as much and as quickly as it could, given its importance and the uniqueness of its mission. In addition, the IOS program seems still to lack clarity around its identity and mission within SES and in the academic community.

We note that lack of clarity about the identity and mission of the IOS program might result, in part, from the program's dual focus on innovation *and* organizational sciences: "The [program] supports scientific research on organizational phenomena and on phenomena related to innovation" (from "A Brief Statement about the Innovation and Organizational Sciences Program"--and also the program solicitation). It is possible that the program might significantly clarify its identity and mission, while *increasing* its appeal to potential grant applicants by targeting the *intersection* of, rather than the union between, innovation and organizational sciences.

The intersection of innovation and organizational sciences includes at least three broad topic areas:

- ***The organization of innovative activity.*** This area might include such topics as the structure and functioning of R&D units; the formation organizational alliances for innovative activity; R&D outsourcing, new forms of economic activity such as open innovation and the "creative" economy (e.g., games and other entertainment genres).
- ***Innovative organizations.*** This area might include such topics as knowledge creation, organizational learning, creativity, collaboration and virtual working, and the related team-based processes. It might also include a focus on entrepreneurial and high-tech startups, communities as vehicles for innovation and the commercialization of innovation, and particular organizations noted for their record of innovation.
- ***Innovations in organizational design and processes.*** Since the days of Frederick Taylor, a focus on organizational improvement via innovations in structure and processes has been considered by some to be at the core of "the American project." Innovation in organizational design and business models was named by Schumpeter as one of five major types of innovative activity, yet the study of organizational innovation has been relatively neglected compared to innovation in products, innovation in processes, entry into new markets etc. This area would include a focus on new organization forms (such as networked organizations) and on structural and process

innovations in more conventional organizations (e.g., business process redesign in health care or educational services delivery).

Shifting the focus of the IOS program away from the union of innovation and organizations toward the intersection of innovation and organizations might appear to limit the scope and growth potential of the program. To the contrary, we believe that clarifying the identity and mission of the program may actually enlarge the pool of applicants. The themes articulated above are central to the research of many scholars in sociology, economics, strategic management, technology and innovation management, organizational studies, marketing, and information, information systems, and information technology management, among others--precisely the kinds of scholars who served on the program's review panel during the period of this program review. In addition, we believe that focusing the IOS program's mission in this way would also help the program attract organizational scholars in a variety of areas such as public administration, the management of health care, education management, environmental management, etc.

We note further that one way to increase the visibility of the program (with clarified identity and mission) would be to hold a competition for doctoral dissertation awards, which the program has not done in the past. It is still the case that many business school faculty members do not actively pursue federal funding for their research, although this situation is changing. But doctoral students, both in foundational disciplines like sociology and in professional schools, keenly feel the lack of funding for their scientific research. A doctoral dissertation competition would be relatively easy for the program to market, and it would introduce a new generation of scholars to NSF-funding in general and to the IOS program in particular.

C.2. Please provide comments as appropriate on the program's performance in meeting program-specific goals and objectives that are not covered by the above questions.

NONE

C.3. Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

NONE

C.4. Please provide comments on any other issues the COV feels are relevant.

NONE

C.5. NSF would appreciate your comments on how to improve the COV review process, format and report template.

We are impressed with the eBinder and eJacket. A few suggestions for improving the eJacket include:

- Include project title in the listing of jackets included in the eJacket, the program name is not helpful information, but the project title is; currently one has to click on each jacket number in order to see the title.
- Provide information in a with-serif font (e.g., times new roman). Jacket information (summaries, reviews, etc.) is currently provided in a sans serif font E.g. (arial)--such fonts are much less readable (onscreen or off) than with-serif fonts.
- Improve the search capability--currently one can only search by jacket number, the ability to search by investigator name or a word in a title would also be appreciated

Program Specific Questions:

- 1. Now that you have built an appreciation of NSF and the IOS program, your advice about how IOS can best support this research community, what are the most important things we might do to catalyze advances, would be most appreciated.**

We believe that for IOS to introduce a doctoral dissertation funding competition, while using a more focused program solicitation, will catalyze advances in the IOS program area.

- 2. Our Assistant Director is keenly interested to know what might be “The Next Big Thing” in our various sciences. Do you have any comments or insights to offer us in this regard?**

The most important opportunity the IOS program has for catalyzing significant scientific advances is to focus on filling the many gaps in knowledge about phenomena at the *intersection* of innovation and organizations.

SIGNATURE BLOCK:

Richard Burton, Chair
M. Lynne Markus
Pamela Tolbert

For the IOS COV

Law and Social Sciences

**FY 2010 REPORT FOR
NSF COMMITTEES OF VISITORS (COVs)**

Date of COV: September 22 – 24, 2010
Program/Cluster/Section: Law and Social Science/Social and Political Sciences Cluster
Division: Social and Economic Sciences
Directorate: Social, Behavioral and Economic Sciences
Number of actions reviewed: Awards: 39 projects Declinations: 30 projects Other: 0
Total number of actions within Program/Cluster/Division during period under review: Awards: 156 projects Declinations: 375 projects Other: 46
Manner in which reviewed actions were selected: Only competitive proposals were selected for review. Continuous grants, supplements, and other proposals, such as those that were withdrawn, were not considered. Additionally, proposals which were submitted to another solicitation, such as the Human and Social Dynamics, were not evaluated.

PART A. INTEGRITY AND EFFICIENCY OF THE PROGRAM’S PROCESSES AND MANAGEMENT

Briefly discuss and provide comments for *each* relevant aspect of the program's review process and management. Comments should be based on a review of proposal actions (awards, declinations, and withdrawals) that were *completed within the past three fiscal years*. Provide comments for *each* program being reviewed and for those questions that are relevant to the program under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

A.1 Questions about the quality and effectiveness of the program’s use of merit review process.

Provide comments in the space below the question. Discuss areas of concern in the space provided.

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE⁴⁶
<p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>Comments: LSS reviews regular proposals with a combination of ad hoc reviewers and an advisory panel. On average, the program receives 6.5 reviews per proposal. This is a more than adequate number of reviews to give the PO sufficient information from the specialist community on a proposal. The dissertation proposal process is now somewhat different. LSS has just begun to use a dissertation-specific panel with supplementary ad hoc reviews as needed. This seems a necessary adjustment in light of the number of dissertation proposals. In the past the program made this adjustment by requesting fewer reviews. We agree with these decisions. It is important for the reviewer community not to be overwhelmed, so lessening the load for these shorter, usually simpler, proposals makes sense.</p> <p>As the volume of proposals has increased, the program has opted to filter regular research proposals somewhat in order to allow for more time for panel discussion of individual proposals. The PO now makes recommendations to the panel re proposals that do not merit extensive discussion. Those recommended for non-discussion are selected on the basis of very low (F or lower) ad-hoc reviewer ratings and low pre-meeting panelist reviews. These (about 15% of total) proposals remain on the list in case the panel wishes to discuss the proposal. The panel sometimes opts to discuss particular proposals. This seems to us a good solution to the overload problem.</p>	<p>Yes, though we did not have data on site visits.</p>
<p>2. Are both merit review criteria addressed</p> <p>a) In individual reviews?</p> <p>b) In panel summaries?</p> <p>c) In Program Officer review analyses?</p> <p>Comments:</p>	<p>Yes, both merit criteria are addressed almost always in individual reviews, but not clearly always in panel summaries. The Form 7s</p>

⁴⁶ If “Not Applicable” please explain why in the “Comments” section.

<p>Both criteria are explicitly addressed in about 70% of individual reviews. This is almost certainly an inaccurate representation. Our examination of E-Jackets revealed that both criteria tend to be addressed in the summary section at the end. Reviewers frequently cut and paste their review into one place rather than dividing it up.</p> <p>Nevertheless, the Broader Impact section appears to attract less attention at all levels. We suggest that the Broader Impacts line on the form should contain a brief notation in parentheses some of the areas of broader impact that could be addressed.</p>	<p>always address both.</p>
<p>3. Do the individual reviewers provide substantive comments to explain their assessment of the proposals?</p> <p>Comments: The quality of the individual reviews reflects very well on the academic community. They address the theoretical contribution of the research plan as well as methodological issues and feasibility. The comments should help the PI go forward, whether funded by NSF in this round or not. There are often long, thoughtful comments on the proposed projects, an act of professional courtesy that benefits everyone.</p>	<p>Yes, they do an excellent job on the whole.</p>
<p>4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)?</p> <p>Comments The panel summaries vary in quality. Usually they are so brief that they do not give a very clear sense of the discussion, though they appear to raise relevant points. Occasionally, because of the brevity of the remarks, the summary as a whole seems contradictory. This suggests two changes that could improve the quality of panel summaries. One is to advise the panel members to be familiar with the proposals they are going to summarize before the meeting. This should lead to better panel summaries. The other suggestion is for the PO to write a cover note based on Form 7 in communicating with the PI about the results of the evaluation. This is apparently being done in IOS.</p>	<p>Yes, but see comments.</p>
<p>5. Does the documentation in the jacket provide the rationale for the award/decline decision?</p> <p>(Note: Documentation in jacket usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), program officer review analysis, and staff diary notes.)</p> <p>During FY 2009, NSF permitted reversal of a declined decision for funding through ARRA for proposals declined after October 1, 2008. (NOTE: This question does not apply to programs for which the reversal decline option</p>	<p>Yes</p>

<p>was not used.)</p> <p>i) Were the reversals of the decision to decline based on both the high quality* of the reviews received on the initial submission and the lack of available funding at the time the origin was made?</p> <p>*Rated "Very Good or above" or the functional equivalent by review panels.</p> <p>ii) Is documentation provided, including a revised Review Analysis, to support the award decisions?</p> <p>Comments: Yes, the Form 7s are excellent. The Pos take account of opposing views in their summaries. In light of the quality of these summaries, the sections on Intellectual Merit and Broader Impacts should be shared with PIs (see #4 above).</p> <p>There were no cases of declined decisions getting ARRA funding – the proposals that got this support were all competitive. We found almost no diary entries in the sample we examined. And there were no site visits in the material we examined.</p>	
<p>6. Does the documentation to PI provide the rationale for the award/decline decision?</p> <p>(Note: Documentation to PI usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), and, if not otherwise provided in the panel summary, an explanation from the program officer (written or telephoned with diary note in jacket) of the basis for a declination.)</p> <p>Comments: The POs have indicated that they readily communicate with PIs who are declined. All applicants, perhaps especially those declined, would benefit from the addition of a substantive note from the PO. As noted in the previous two comments, there are some limitations in the panel summaries. The communication with PIs could be improved by drawing upon the narrative in the Form 7 on Intellectual Merit and Broader Impact. The PO told us that this would not be difficult to do.</p>	<p>Yes, but this could be improved.</p>
<p>7. Is the time to decision appropriate?</p> <p>Note: Time to Decision --NSF Annual Performance Goal: For 70 percent of proposals, inform applicants about funding decisions within six months of proposal receipt or deadline or target date, whichever is later. The date of</p>	<p>Yes</p>

<p>Division Director concurrence is used in determining the time to decision. Once the Division Director concurs, applicants may be informed that their proposals have been declined or recommended for funding. The NSF-wide goal of 70 percent recognizes that the time to decision is appropriately greater than six months for some programs or some individual proposals.</p> <p>Comments: LSS provides decisions within 6 months in 91% of cases, performing much better than the NSF target of 70% within 6 months. The LSS average dwell time is 4.77 months. This represents a significant improvement since the 2007 COV. (Dwell time was 5.8 months in 2006). This may be attributable to the addition of a second PO in LSS.</p>	
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<p>8. Additional Comments</p> <p>a) Additional comments on the quality and effectiveness of the program’s use of merit review process.</p> <p>b) To what extent does the documentation in the jacket or otherwise available provide the rationale for use of ARRA funding?</p> <p>The addition of a second PO in LSS has been beneficial in a variety of ways. Dwell time for proposals has been reduced. Relations with the academic community are facilitated and broadened and strengthened by a second program officer. This is a very broad-based interdisciplinary field that benefits by two officers with differing areas of expertise. We also urge NSF to seriously consider making one of the PO slots a permanent position, as recommended in previous COVs. We discuss this further below.</p> <p>In summary: We were impressed with the thoroughness and rapidity of the review process. The reviewers (ad hoc and panel members) took their jobs seriously.</p>

A.2 Questions concerning the selection of reviewers. Provide comments in the space below the question. Discuss areas of concern in the space provided.

<p>SELECTION OF REVIEWERS</p>	<p>YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE</p> <p>47</p>
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⁴⁷ If “Not Applicable” please explain why in the “Comments” section.

<p>1. Did the program make use of reviewers having appropriate expertise and/or qualifications?</p> <p>Comments:</p> <p>The range of topics addressed in LSS proposals is broad and varied, making the selection of panelists a challenging undertaking. Panelists must have a wide-breadth of scientific knowledge and must be able to appreciate the promise of many different types of projects touching on many different subjects. Our review indicates that the range of fields represented is appropriate and that there is gender balance. We are impressed that so many reviewers are internationally based scholars.</p>	<p>Yes</p>
<p>2. Did the program use reviewers balanced with respect to characteristics such as geography, type of institution, and underrepresented groups?</p> <p>Note: Demographic data is self reported, with only about 25% of reviewers reporting this information.</p> <p>Comments:</p> <p>While there is broad representation of academic fields, with many excellent reviewers on the list, there may be an under-representation of 4-year college scholars (3.67% of total reviewers).</p> <p>We have too little information to evaluate minority representation. Of those who identify their minority or non-minority status, 12.2% identify as minorities. Sometimes maintaining adequate minority representation will require waiving usual rotation rules, encouraging some panelists to stay longer than the usual 2-year term. LSS is on a par with other programs at NSF, which is not to say that it is adequate. Regarding gender, it is also hard to draw conclusions. These data suggests a systematic unwillingness to self identify on gender, race, and disability – the statistics were all identical on non-responses for these categories, and the percentage of non-responders was nearly 70%. Both LSS and NSF should consider ways to improve the response rate on these questions. For example, LSS could include a statement in its review letter asking for this information as a means of improving its performance. LSS might also reinforce links with groups targeting minorities that are supported by other SBE programs.</p>	<p>Yes, but see comments.</p>
<p>3. Did the program recognize and resolve conflicts of interest when appropriate?</p>	<p>Yes.</p>

<p>Comments: LSS follows a reasonable process and we could find no problems with the results the program has achieved.</p>	
<p>4. Additional comments on reviewer selection: No.</p>	

A.3 Questions concerning the resulting portfolio of awards under review. Provide comments in the space below the question. Discuss areas of concern in the space provided.

RESULTING PORTFOLIO OF AWARDS	APPROPRIATE, NOT APPROPRIATE⁴⁸, OR DATA NOT AVAILABLE
<p>1. Overall quality of the research and/or education projects supported by the program.</p> <p>Comments: The overall quality of this program is high. A broad spectrum of scholars pays attention to the LSS program. See response to #4 below.</p>	Appropriate
<p>2. Does the program portfolio promote the integration of research and education?</p> <p>Comments: The LSS portfolio contains a considerable number of projects that provide support for graduate students and/or postdoctoral students. LSS supports Doctoral Dissertation Improvement Grants (DDRIGs), Research in Undergraduate Institutions (RUIs) and CAREER proposals which all reflect targeted efforts to promote the integration of research and teaching. This goal is furthered by funding post-doctoral, graduate and undergraduate students in standard and non-standard research proposals. The Program particularly supports the integration of undergraduate students through the use of Research Experiences for Undergraduates (REU) Supplements. During fiscal years 2007-2009, LSS supported 228 undergraduate student positions,</p>	Appropriate

⁴⁸ If “Not Appropriate” please explain why in the “Comments” section.

<p>283 graduate student positions and 7 postdoctoral positions. Given the number of projects funded by LSS (155), about 1.47 undergraduate students, 1.83 graduate students and 0.05 post-doc positions are funded per project.</p>	
<p>3. Are awards appropriate in size and duration for the scope of the projects?</p> <p>Comments: The PO sometimes suggests that a PI envision the research in a longer timeframe, which probably helps match duration to requests. The PO indicated that there are few requests for supplements, indicating a reasonably good match. It would be helpful, however, for LSS to examine the pattern of requests for no-cost extensions and supplemental requests to determine if there is a need to systematically adjust the size and duration of projects.</p> <p>The financial situation of NSF as a whole and LSS in particular means that projects are routinely underfunded. Lack of funding is a particularly severe problem for LSS because the program speaks to many communities. When no projects are funded in an area, LSS essentially disappears from their view.</p> <p>The ARRA funding allows the possibility for a comparative study of ARRA and non-ARRA grants on the effect of more generous funding on: completion timing, quality of outcomes, training of graduate and undergraduate students.</p>	<p>Appropriate</p>
<p>4. Does the overall program portfolio (including ARRA funded awards) have an appropriate balance of innovative/potentially transformative projects?</p> <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of innovative/potentially transformative projects?</p> <p>The LSS program list of potentially transformative proposals that received ARRA funding includes some that do not seem to be far from the mainstream, but at least one of them caused some unease among reviewers because the process seemed untried. This is a sign of the program’s willingness to consider new approaches.</p> <p>Comments: Undoubtedly many of the projects funded by LSS are innovative and some may be transformative, but we do not have information to systematically document this impression. A significant issue in peer-reviewed selection systems is whether the program tends to reinforce “normal” science within too-narrow selection criteria. It is important, therefore, to be sure that high-risk or potentially paradigm-shifting research gets careful consideration. The processes that LSS uses for filtering proposals seem well-calculated to avoid de-selecting this type of proposal. The make-up of the panels is calculated to create disciplinary variety in the review process. Though we do not have direct indicators, we believe the review process is well set up to maintain quality. LSS should be explicit in its</p>	<p>Appropriate</p>

<p>support for cutting-edge, innovative, and potentially transformative research with its advisory panel in reviewing proposals.</p>	
<p>5. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Inter- and Multi- disciplinary projects? <p>Comments:</p> <p>LSS, as an interdisciplinary program, does a great deal of co-funding within the Directorate of Social, Economic and Behavioral Sciences. During FY 2007-2009, approximately 34% of the LSS portfolio (all LSS related proposals) was co-funded. Of that 34%, 27% of LSS funds go to programs within SES, 5.4% to programs in BCS and 1.6% to programs in other NSF directorates. LSS co-funds most extensively with the Economics, Sociology and Political Science programs within SES. In BCS, LSS co-funds most extensively with the Cultural Anthropology program. A notable “trade deficit” exists in the data, with LSS co-funding twice the number of proposals that it receives from other programs. This deficit should probably be reduced.</p>	<p>Appropriate</p>
<p>6. Does the program portfolio have an appropriate balance considering, for example, award size, single and multiple investigator awards, or other characteristics as appropriate for the program?</p> <p>Comments: There is a significant variety in award sizes that seems appropriate given the wide range of types of research this program supports. Different types of research create different price tags, and this appears to be reflected in the awards. The balance between single and multiple-investigator awards seems appropriate – there is roughly an even split between them.</p>	<p>Appropriate</p>
<p>7. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Awards to new investigators? <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of awards to new investigators? This number is too small to make a helpful assessment.</p> <p>Comments:</p> <p>Projects including at least one new PI account for the vast majority of the submissions received by the program during three fiscal years under consideration (approximately 84%). This speaks well for the outreach efforts of the LSS program.</p>	<p>Appropriate</p>

<p>LSS subsequently awarded 119 projects with at least one new PI and 36 projects with only prior PIs. This seems appropriate, but it remains unclear how proposals with all new PIs fare in LSS. The data available compare veteran PI proposals with those containing at least one new PI. So we can reach no solid conclusion on the chances of PIs or PI-teams new to the NSF application process. However, without quality indicators, it would be difficult to know how to interpret these data if they were available.</p>	
<p>8. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Geographical distribution of Principal Investigators? <p>Comments:</p> <p>A majority of proposals received and awards go to institutions in states with large numbers of PhD granting institutions (e.g., New York, California, Pennsylvania, Massachusetts, and Texas). New York and California have high submission rates because they have concentrations of departments and programs that are active in the communities served by the Law and Social Sciences Program; particularly in the areas of law and society and law and psychology. Each fiscal year the LSS program pays particular attention to proposals submitted from EPSCoR states which review well. In 2007, LSS co-funded 2 proposals with the EPSCoR program. In 2009, LSS co-funded an additional proposal with the EPSCoR program. It is unclear whether these numbers reflect LSS Program decisions or decisions made by EPSCoR.</p>	<p>Appropriate</p>
<p>9. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Institution types? <p>Comments:</p> <p>The vast majority of awards come from research-intensive schools and to a lesser extent, other PhD granting institutions. As might be expected, success rates are slightly higher than the LSS mean funding rate in the former and slightly lower than mean in the latter. It is impressive that the non-research intensive schools are doing well in getting LSS support. Although high-prestige institutions get more support, the process does not seem biased toward these institutions. The overall picture seems appropriate, though we would expect, given the high quality of law and social-science scholars at liberal-arts colleges, that there might be more proposals from non PhD granting institutions. More outreach to such institutions might be appropriate.</p>	<p>Appropriate</p>

<p>10. Does the program portfolio have an appropriate balance:</p> <ul style="list-style-type: none"> • Across disciplines and sub disciplines of the activity? <p>Comments: There is a broad representation of disciplines and sub-disciplines on the panel, in the reviewer pool, and in the PI pool. The result, as one might expect, is a broad spectrum of awards in terms of disciplines. While there is no reason to suspect there is a problem, we do not know whether any particular field is over-represented in awards (as compared to submissions) because we do not have that data.</p>	<p>Appropriate</p>
<p>11. Does the program portfolio have appropriate participation of under-represented groups?</p> <p>Women submit roughly half of proposals to the LSS program as either PIs or co-PIs. Funding rates are virtually the same for these proposals in comparison to those not involving women.</p> <p>While there is variability in the number of proposals with minority involvement, on average, nearly 12% have minority involvement. The funding rate for these proposals is slightly lower than non-minority involved, but if the type of institution is taken into account, this may actually represent a higher-than-average rate for the institutional category involved.</p>	<p>Appropriate</p>
<p>12. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports.</p> <p>Comments: Law and law-like systems are fundamental in the contemporary world, both domestically and internationally. They deserve careful study and critical scrutiny by scholars from a variety of disciplines. The LSS program seems well-situated to support this kind of research. The program is organized and managed to contribute meaningfully to national priorities and the NSF mission (http://www.nsf.gov/pubs/2006/nsf0648/NSF-06-48.pdf)</p>	<p>Appropriate</p>
<p>13. Additional comments on the quality of the projects or the balance of the portfolio:</p> <p>ARRA Specific Comments: Additional comments regarding the portfolio of ARRA awards addressing the NSF or program-specific priorities for ARRA funding?</p>	

LSS provides support to an appropriate balance of projects.	
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A.4 Management of the program under review. Please comment on:

1. Management of the program.

The LSS Program Narrative indicates that 580 proposals were submitted for review during FY 2007-2009. Of these proposals, 165 were awarded support. We note that the PO successfully secured an average of approximately 6.5 reviewers per proposal. Our review of the e-jacket material clearly indicates that the PO was successful in constructing a substantively and methodologically qualified panel of reviewers. We note the PO successfully constructed a gender-balanced group of panelists who represented some of the most accomplished scholars in the disciplines of political science, sociology, law, psychology, anthropology, economics, and public policy. The panelists were drawn from highly respected private and public research universities. These are all strong indicators of effective program management. It is worth asking, however, whether there could be broader representation of non PhD granting institutions on the advisory panel in order to better engage this community of strong law and social science scholars and enhance support for innovative research.

We note that this program has long been managed by scholars who rotate through the position. This has the advantage of cycling through a number of scholars in varying fields, but also the potential disadvantage of the absence of a long-term vision for the program and deep knowledge of NSF. This may reduce the likelihood of growing the program in new directions. This is the only program in SES that is managed this way, which appears to place the program at some disadvantage vis a vis other programs in the Division. Consider, for example, the relatively flat LSS program budget over a long period of time, despite a growing number of proposals. This concern was raised in 2003, when the proposal load was much lower. The 2007 COV recommended that when a second PO is authorized for LSS, that one of the positions be permanent. We agree with this recommendation and strongly urge that it be acted upon. LSS, in comparison to other SES programs, is under-staffed. Not only do other programs have more adequate staffing; they also have at least one permanent PO. There may be concerns about the size of the program justifying a permanent as well as rotator PO, but we note that the number of proposals in LSS is continuing to increase and is greater than in some programs with multiple permanent program officers. A permanent person could improve Program outreach through long-term planning and increase participation in cross-directorate activities. Interagency contacts would also improve, e.g. with Department of Homeland Security, the Environmental Protection Agency, the Federal Judicial Center, State Justice Institute, National Institute of Justice, and many other agencies with strong law and policy interests. Response rates for reviewers would rise because reviewers would not be tempted to “wait out” the current rotator(s). Replacing a rotator with a permanent PO represents no significant increase in NSF’s financial investment, and offers significant advantages to the Program, the Division, and NSF.

2. Responsiveness of the program to emerging research and education opportunities.

Comments: LSS is responding to new research and education opportunities, e.g. in funding research on Muslim law in democratic societies and in funding research on local initiatives in enforcing federal immigration law. Another example is the SGER award that studied community response to the Virginia Tech shooting tragedy. A resource that is highly significant for both teaching and practical purposes is a web page arising out of a LSS grant that examines characteristics of national constitutions, providing insights for policy-makers involved in drafting constitutional documents, and to students seeking deeper understanding of constitutional structures <http://constitutionmaking.org> We conclude, in short, that pressing social issues get attention in this program because PIs in the field are deeply concerned with these issues, and the program responds effectively to these proposals.

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio.

Comments: The priorities of the program appear appropriate. The program officers are highly visible and available at relevant conferences. They readily agree to visit universities to describe and advocate for NSF programs, including even contributing to relevant disciplinary newsletters. POs also get a sense of the community's priorities from these visits. The planning and prioritization within the program internally is appropriate, as indicated by the shorter-than-average dwell time for reviews. We note also the participation of many high-quality scholars in the review process and the willingness of international scholars, who are not eligible to receive funding themselves, to assist in the review process. Outreach through Law & Society Association events (graduate student workshops, support for international research collaboratives) and participation in political methodology conferences, workshops on crime and population dynamics – both targeting junior scholars help LSS to equip a new generation of scholars with knowledge of NSF opportunities.

4. Responsiveness of program to previous COV comments and recommendations.

Comments: LSS has been responsive in most respects. The dwell time, a problem noted by the previous cov, has been reduced. The average number of reviews has increased, as recommended by the previous COV. We see no change in the tendency to fund high-risk highly innovative proposals, a source of concern noted earlier. Although it is not within the ambit of the program to appoint a permanent program officer, the program and the division should advocate for this change. We agree with the previous two covs that this would be beneficial.

5. Additional comments on program management: None

PART B. RESULTS OF NSF INVESTMENTS

The NSF mission is to:

- promote the progress of science;
- advance national health, prosperity, and welfare; and
- secure the national defense.

To fulfill this mission, NSF has identified four strategic outcome goals: Discovery, Learning, Research Infrastructure, and Stewardship. The COV should look carefully at and comment on (1) noteworthy achievements based on NSF awards; (2) ways in which funded projects have collectively affected progress toward NSF’s mission and strategic outcome goals; and (3) expectations for future performance based on the current set of awards.

NSF investments produce results that appear over time. Consequently, the COV review may include consideration of significant impacts and advances that have developed since the previous COV review and are demonstrably linked to NSF investments, regardless of when the investments were made.

To assist the COV, NSF staff will provide award “highlights” as well as information about the program and its award portfolio as it relates to the three outcome goals of Discovery, Learning, and Research Infrastructure. The COV is not asked to review accomplishments under Stewardship, as that goal is represented by several annual performance goals and measures that are monitored by internal working groups that report to NSF senior management.

B. Please provide comments on the activity as it relates to NSF’s Strategic Outcome Goals. Provide examples of outcomes (“highlights”) as appropriate. Examples should reference the NSF award number, the Principal Investigator(s) names, and their institutions.

B.1 OUTCOME GOAL for Discovery: *“Foster research that will advance the frontier of knowledge, emphasizing areas of greatest opportunity and potential benefit and establishing the nation as a global leader in fundamental and transformational science and engineering.”*

Comments:

LSS fosters research that advances the frontiers of knowledge with their support for individual and collaborative proposals in many areas of law and social science. An example is the comparative study of women’s human rights which was completed in the period under review here (PI Merry). We have described the high quality of the LSS review process and suggested ways that it could be even more successful. A particularly high-yield activity in advancing discovery is the research-oriented workshop. These events bring together a diverse range of scholars to identify new avenues for research that take advantage of unexplored links between fields. LSS has strongly supported such events. A good example was the 2009 award for a Symposium on Crime and Justice: The Past and Future of Empirical Sentencing Research (PI Bushway).

B.2 OUTCOME GOAL for Learning: *“Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens.”*

Comments:

The LSS program contributes significantly to the creation of a broadly inclusive scientific workforce, thereby expanding the scientific literacy of the citizenry generally. These activities include strong support for Dissertation research (71 dissertations supported, nearly half of total awards), encouragement of REU supplements (roughly 10 – 12 annually) and RUIs (2 supported in the period), and graduate training opportunities in regular grants. LSS works hard to cultivate proposal submissions, encouraging new investigators to apply at professional meetings. LSS also supports workshops and training programs that contribute to the diversity and breadth of the scientifically literate population. A good example is the Summer Research Institute initiated and run by professors Lauren Krivo and Ruth Peterson. The goal of the Summer Institute is to promote successful research projects and careers among junior faculty, particularly those from underrepresented groups. Each participant completes an ongoing project in preparation for journal submission or agency funding review. Senior scholars work closely with participants on their projects. Twenty-four junior scholars have participated in the institute since its inception in 2006. All of these efforts help to expand the size and diversity of the pool of researchers and scientifically engaged students.

We recommend that LSS reach out more systematically to scholars at non-PhD granting institutions so as to involve their undergraduate students in research. This population of students would greatly benefit from their engagement with original research. The pay off is likely to be particularly high in this setting because students will almost inevitably be involved in significant aspects of the research process.

We recommend that LSS consider participating in some of the smaller meetings being organized on a regional basis. These are often geared to providing opportunities for junior scholars and graduate students. LSS could also participate in the Council on Undergraduate Research. The Council is interested in developing research programs at predominately undergraduate institutions.

Finally, the program's investments in infrastructure development all have impacts on scientific literacy. Many of these data sets are used in graduate and undergraduate research colloquia, in honors' theses, and other student research endeavors, thus expanding scientific literacy.

B.3 OUTCOME GOAL for Research Infrastructure: “Build the nation’s research capability through critical investments in advanced instrumentation, facilities, cyberinfrastructure and experimental tools.”

Comments:

We found four projects in this funding period that are explicitly concerned with increasing the availability of scientific data to enhance scholarly research. Other relevant awards were to a workshop on the identification and integration of law and court data (Randazzo PI) and the Summer Institute described in B.2. Other originally collected data sets become available to subsequent scholars, adding to the research infrastructure. We are aware that other research efforts supported in this period also had infrastructure-enhancing effects, vis the international research collaboratives

project that brought together scholars from around the world to work together on projects at an international socio-legal studies meeting in Berlin (Merry PI). These relationships build an international infrastructure of collaborators and enhance data availability across nations. In addition, these infrastructure projects contribute to the knowledge and understanding of law and law-like institutions through a wealth of systematically collected, valid, and reliable data that is available to citizens and scholars alike. We welcome the growing efforts to make data sets and analysis available electronically. A good example of a useful tool is: <http://scdb.wustl.edu>

PART C. OTHER TOPICS

C.1. Please comment on any program areas in need of improvement or gaps (if any) within program areas.

1. We have identified a possible gap in engagement with 4-year and non-PhD granting colleges and universities. More engagement might help diversify proposals, broaden the proposer pool, and engage more undergraduates in significant roles in original research.
2. An important objective for LSS and all NSF programs is communicating as fully as possible with PIs, particularly those whose work is declined. One way to improve this process would be to include a substantive note from the PO with the package of ad hoc and panel reviews. The PO could draw upon the analysis provided in the Form 7 in composing this note.

C.2. Please provide comments as appropriate on the program's performance in meeting program-specific goals and objectives that are not covered by the above questions.

The budget allocated to LSS has been nearly flat for at least a decade, and yet proposals have increased enormously. This poses a significant problem for Program performance: there is not enough funding to support worthwhile research fully. We note, for example, that LSS very rarely gives more than a month of summer support. This is at least partly driven by resource, rather than research, concerns. We believe that this relative dearth of funds is related to the lack of a permanent program officer. LSS has difficulty achieving its interests in an environment dominated by permanent program officers.

C.3. Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

1. The Broader Impacts section descriptor in the proposal-review form should include some examples to encourage more thorough responses to this issue. We note that the previous COV came to a similar conclusion, recommending that the Fastlane process require reviewers explicitly address the broader impact component as a requirement for the review to be successfully submitted.
2. The dearth of data on race, gender, and disability is troubling. NSF has apparently not made a convincing case to reviewers and PIs for providing this information. This issue deserves the agency's attention. There is no other way to evaluate the agency's performance. A person should be specifically

asked to decline to provide this information. It would also be helpful if LSS added a sentence in its communications with reviewers and PIs to encourage disclosure of this information.

C.4. Please provide comments on any other issues the COV feels are relevant.

We devote significant attention in this report to the need for a permanent program officer in LSS. There are many advantages, and few significant costs, to making this change. We have listed many of these advantages, but they also include increased capacity for the program to reach out to relevant communities that may not be fully aware of their potential links to NSF and research initiatives. LSS, as an already interdisciplinary program, uniquely advances NSF's commitment to interdisciplinary research. It is a logical touch point for links to policy organizations and policy schools, for business schools, and law schools, as well as government agencies. The related issue of a fair and adequate budget needs to be addressed. This will involve serious consideration of non-incremental budgeting for SES.

C.5. NSF would appreciate your comments on how to improve the COV review process, format and report template.

In general the process was convenient and thoughtfully arranged. The LSS document providing the COV with information relevant to the questions was very helpful. It was also helpful to have access to the prior COV report. The pre-COV meetings were helpful to orient us to the documents we would be using. It is an excellent policy to anticipate that the work will be done on site and to provide facilities that make that easy. Small suggestions in this regard:

1. The in-room computers should be linked to the printer. We had to use a thumb drive to get any communication with the printer.
2. NSF should assign COV-specific passwords for the site visit.
3. Charts provided by the Program under review should include a longer time line than the review period. 10 years would be a good frame, or two prior COVs.

PROGRAM SPECIFIC QUESTIONS

C.6. Are there other funding mechanisms within NSF that the Law & Social Sciences program should consider implementing, such as Scholar Awards, Post-Doctoral Funding, Mid-Career Awards, etc.?

We recommend creating a Retraining and Renewal Award, which would provide a summer stipend for methodological and theoretical training for mid-career academics. This could be a valuable and cost effective way to enable scholars to continue making contributions at the frontier of knowledge. We do not recommend allocating scarce resources to either post-doctoral awards or scholar awards (i.e., to support scholars who are writing the results of a project). Although it could keep junior scholars engaged in research while awaiting other employment opportunities, many post-doctoral fellowships go to the top graduates who have already obtained a job.

C.7. Are there ways in which the Law & Social Sciences program could more effectively utilize the workshop mechanism?

One way to more effectively promote workshop proposals is to make announcements about the availability of workshop funding at meetings, in newsletters, and in other electronic forms, such as SSRN and listservs. Knowledge of this opportunity may not be widespread. Another way to make workshops more effective is to consider simulcasting or posting video feeds of workshop panels on the web so scholars may view the proceedings, even though they are unable to attend. We recognize that there may be some additional expense related to the development of these resources, but some, such as connecting through Skype, are virtually free of charge.

C.8. Are there ways in which the Law & Social Sciences program could more effectively identify and nurture nascent and emerging communities, respectively?

Outreach to nascent and emerging communities is a challenge. Perhaps the best strategy is to be alert to work across the law and social sciences. This involves attention to work in journals and conference proceedings and abstracts, such as those distributed by SSRN. With this knowledge, the program officers may be able to target small conferences and workshops where promising research is being presented. The program officers could encourage proposals from these communities by participating or proposing roundtables on funding opportunities at such events.

C.9. Should SBE/SES consider hiring a permanent program officer position for the Law & Social Sciences program to bring the program into line with the distribution of program officers in other SES programs?

The COV strongly urges SBE/SES to make one program officer position permanent, rather than rely on two rotating program officers. We have noted that there are many benefits to having a permanent program officer, including stronger and more durable relationships with the law and social science community (resulting in higher submission rates and reviewer response rates). It also gives the law and social science community a stronger voice in division and directorate decisions on the allocation of resources. A permanent officer would also help to provide a long-term vision for the program and develop a deeper knowledge of NSF that would make the LSS program more effective. We note that LSS is the only program in the division without a permanent program officer. This is in spite of a proposal load that exceeds that of several programs with one or more permanent program officers (e.g., DRMS and MMS). The effect on budget allocations of not having a permanent program officer is striking, with LSS receiving far less than programs with much smaller proposal loads.

C.10. How can the Law & Social Sciences program engage faculty and students within law schools in ways that increase their contribution to social science research?

LSS is well positioned to attract proposals from law school faculty who are already oriented toward social science research. Law schools typically provide some funding to their faculty to hire research assistants, which may mitigate the need for faculty to seek NSF funding. Similarly, higher ranked law schools regularly provide summer research stipends. Most law school students are oriented to preparation for a career in legal practice; certainly there are some who discover an interest in social science and choose to pursue a PhD after completing law school, but the chance of finding such students is quite low. One way to draw new law-faculty interest in law-related social science would be to encourage workshops on questions that could fruitfully be explored using social science methods. One

group that might especially benefit is law school faculty who do not also have advanced degrees in social science. The Law and Society Association has held Summer Workshops that engage law faculty with a nascent interest in social science, and LSS has supported these workshops. This would be a good practice to continue.

LSS program officers should consider how they could utilize SSRN to reach the law-school community, as well as other program constituencies. For example, SSRN could be used to disseminate announcements, information on grant awards, and highlights of project findings.

C.11. The Law & Social Sciences program currently caps dissertation awards at \$15,000 (note that stipends are not permitted in this solicitation). Does this appear to be an appropriate limit?

We believe that there should be at least some flexibility in the amounts that can be awarded to support dissertation research. In some special situations that Program Officer should be prepared to make awards above the current cap of \$15,000.

C.12. The Law & Social Sciences program currently co-funds projects that are led by other programs at a rate of approximately 19% of its own budget – this degree of co-funding is greater than what the program receives in-kind from other programs at a rate of 2:1. Should the Law & Social Science program alter the distribution of co-funding and co-reviews with other programs in order to prioritize certain programmatic goals?

We applaud the willingness of LSS to co-fund projects, but we are troubled by the apparent asymmetry that we saw in this review cycle, with LSS giving much more than it is receiving. Most cofunding is with programs that have larger budgets. We urge LSS to work to reduce the current asymmetry.

SIGNATURE BLOCK:

Paul Walhbeck, Chair
Herbert M. Kritzer
Doris Marie Provine

For the LSS COV

Methodology, Measurement, and Statistics

**FY 2010 REPORT FOR
NSF COMMITTEES OF VISITORS (COVs)**

Date of COV: 9/22/10-9/24/10
Program/Cluster/Section: Methodology, Measurement, and Statistics / Methodology, Measurement, Science, Technology, and Society Cluster
Division: Social and Economic Sciences
Directorate: Social, Behavioral and Economic Sciences
Number of actions reviewed: Awards: 32 projects Declinations: 30 projects Other: 0
Total number of actions within Program/Cluster/Division during period under review: Awards: 52 projects Declinations: 169 projects Other: 65
Manner in which reviewed actions were selected: Only competitive were considered. Continuous grants and supplements were not considered. 10 award and 10 declines from each of the three fiscal years (60 actions total) were randomly selected and provided to the COV members for review. COV members were permitted to request additional proposals

PART A. INTEGRITY AND EFFICIENCY OF THE PROGRAM'S PROCESSES AND MANAGEMENT

Briefly discuss and provide comments for *each* relevant aspect of the program's review process and management. Comments should be based on a review of proposal actions (awards, declinations, and withdrawals) that were *completed within the past three fiscal years*. Provide comments for *each* program being reviewed and for those questions that are relevant to the program under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

A.1 Questions about the quality and effectiveness of the program's use of merit review process.

Provide comments in the space below the question. Discuss areas of concern in the space provided.

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE⁴⁹
<p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>MMS is a broad, interdisciplinary program that emphasizes collaboration across disciplines, institutions, and agencies. This requires a review process that solicits assessments from diverse sources. It also requires that the review process be adapted to the particular type of proposal under consideration.</p> <p>Of the 103 new awards supported by MMS in FY 2007-2009, 52 were distinct projects that were primary to MMS. MMS contributed \$9.9 mil in non-ARRA funds in support of these proposals. MMS contributed an additional \$4.8 mil. in non-ARRA funds to 51 awards for which MMS was secondary. Finally, a total of \$3.3 mil. of support was provided from ARRA funds.</p> <p>Each regular proposal is subject to a two-stage review process--an evaluation by external reviewers followed by an assessment by members of the review panel. On average, more than 7 reviews were received for each proposal. Among these are reviews by at least two panel members. The panel as a whole discusses both the scientific merits and the broader impacts of the proposal, taking into consideration the views expressed by the external reviewers.</p> <p>Based on the panel discussion, the panel recommends that a proposal be funded or not, and, for each proposal recommended for funding, the panel also ranks its funding priority. Some proposals also receive the equivalent of a "revise and resubmit" recommendation, which is a "do not fund" recommendation made with some encouragement that a revision could result in a fundable proposal.</p> <p>Following the primary panel recommendation, the MMS Program Director may also present the proposal to other Program Directors, panels, and/or agencies. Approximately 40% of the proposals reviewed by MMS were also reviewed by a secondary panel, which itself solicits at least some further external reviews. The MMS panel discussion takes into account these additional reviews.</p> <p>Other kinds of proposals (e.g. conference awards) are not externally reviewed, but are reviewed by the panel. Other proposals, which were judged meritorious,</p>	<p>Yes</p>

⁴⁹ If "Not Applicable" please explain why in the "Comments" section.

<p>that are of interest to Federal statistical agencies are also subjected to review by panels of experts from those agencies.</p> <p>In the opinion of the COV, the review mechanisms used by the MMS program are entirely appropriate given the goals of the program and the kinds of proposals received.</p>	
<p>2. Are both merit review criteria addressed</p> <p>a) In individual reviews? Data provided by Dr. Eavey suggest that these two criteria are explicitly addressed in the majority of mail reviews received in FY 2007 – 2009 for both awards and declines. In fact, the two criteria are addressed far more frequently than indicated in the NSF information system since the data collection procedure only counts reviews as having addressed the criteria if the reviewer places his or her comments into particular fields provided by FastLane. Reviewers frequently place their entire review in only one of these fields or in the "Summary" field, in which case the system treats the review as not having addressed the criteria.</p> <p>b) In panel summaries? The two criteria were consistently addressed in all panel summaries examined by the COV.</p> <p>c) In Program Officer review analyses? The two criteria were consistently addressed in all review analyses examined by the COV.</p> <p>Recommendation: To increase the rate at which reviewers are tallied as addressing the broader impacts question, we recommend that NSF consider the addition of a mandatory check box to the electronic review form. By clicking on this box, each reviewer would indicate that broader impacts have been addressed in the review. This should both increase the rate at which reviewers address the broader impact criterion and make the statistical system more accurate. Also, because many reviewers may be uncertain about the definition of broader impacts, a link to its NSF definition might help to increase response.</p>	<p>Yes with exceptions</p> <p>yes</p> <p>yes</p>
<p>3. Do the individual reviewers provide substantive comments to explain their assessment of the proposals?</p>	<p>Yes with exceptions</p>

<p>Comments: Based on our audit of the reviews, we judge the great majority to be thorough and informative. Of these, about a third were judged as <i>extremely</i> thorough and 1 informative.</p>	
<p>4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)?</p> <p>Comments: All summaries that we audited provided an adequate rationale for the panel's funding recommendation. We additionally note that some summaries were especially well done.</p>	<p>Yes</p>
<p>5. Does the documentation in the jacket provide the rationale for the award/decline decision?</p> <p>Comments: In all the cases we audited, the rationale for the funding decision was more than adequately documented. In this regard, we were particularly impressed by Dr. Eavey's review analyses. They were extremely thorough and thoughtful and particularly effective in explaining how she balanced differing assessments of the strengths and weakness of each proposal. We judge this to be very important because clear support and decline decisions are easy to make—it is the close calls that are important on the margin. Dr. Eavey seems to make wise choices in these close calls.</p> <p>During FY 2009, NSF permitted reversal of a declined decision for funding through ARRA for proposals declined after October 1, 2008. (NOTE: This question does not apply to programs for which the reversal decline option was not used.)</p> <p>i) Were the reversals of the decision to decline based on both the high quality* of the reviews received on the initial submission and the lack of available funding at the time the origin was made?</p> <p>*Rated "Very Good or above" or the functional equivalent by review panels.</p> <p>The MMS program reversed a decline on one collaborative project from the Fall 2008 round: This project was judged to have met all of the policy requirements of ARRA. In addition, the junior investigators had not received prior NSF support. The COV judged this an appropriate use of ARRA funds.</p>	<p>yes</p> <p>yes</p>

<p>ii) Is documentation provided, including a revised Review Analysis, to support the award decisions?</p>	<p>yes</p>
<p>6. Does the documentation to PI provide the rationale for the award/decline decision?</p> <p>Comments: As we have already indicated, most reviews provide useful information on the strengths and weaknesses of the proposal. In every proposal we audited there were always informative reviews. Also, as previously indicated, all panel summaries that were audited adequately explained the funding recommendation. Finally, particularly in instances where a proposal had important strengths, but was not funded, Dr. Eavey communicated to the PI areas of weakness that might be strengthened in a future submission.</p>	<p>Yes</p>
<p>7. Is the time to decision appropriate?</p> <p>Comments</p> <p>NSF has a target that a decision be reached within 6 months for at least 70% of proposal submissions. Data provided by Dr. Eavey indicate that in 2007 and 2008, respectively, 89% and 80% of dwell times were 6 months or less. Further, in 2007 and 2008 95% and 100% were, respectively, completed in less than 9 months. This again is a credit to Dr. Eavey's careful attention to all aspects of the management of the MMS program.</p> <p>Only in 2009 did dwell times fall short of the 70% standard. In that year 32% met the NSF dwell time standard. However, this was not due to mismanagement but instead was a consequence of the need to slow down grant processing to accommodate the requirements of ARRA-based funding. Despite this unique, purposive deceleration, 98% of the funding decisions were made within one year.</p>	<p>Yes</p>

8. Additional Comments

a) Additional comments on the quality and effectiveness of the program’s use of merit review process.

The COV finds that the review process is efficient, fair, balanced and transparent. Given the interdisciplinary nature of the program and the fact that the Program Director must frequently coordinate reviews from two or more panels, the COV found the effectiveness of the review process very impressive. The COV has no concerns about this aspect of the program.

b) To what extent does the documentation in the jacket or otherwise available provide the rationale for use of ARRA funding?

The COV was not able to probe this issue in depth but based on discussions with MMS Staff we were satisfied that ARRA funding decisions adhere to ARRA guidelines.

A.2 Questions concerning the selection of reviewers. Provide comments in the space below the question. Discuss areas of concern in the space provided.

SELECTION OF REVIEWERS	YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE 50
<p>1. Did the program make use of reviewers having appropriate expertise and/or qualifications?</p> <p>Comments: The question applies differently to Panel members than it does to ad hoc reviewers. Because the MMS Program supports a broad range of methodological research across the social, behavioral, and economic sciences, the panel composition reflects the breadth and diversity of the funding portfolio. Because the program reviews and funds across multiple disciplines, panel members must have an understanding of, and an appreciation for, work from outside their primary areas of research – in this sense they must be generalists. In terms of primary disciplinary identification, during the FY 2007-2009 period there were 5 panelists from Economics, 4 from Psychology, 3 each from</p>	yes

⁵⁰ If “Not Applicable” please explain why in the “Comments” section.

<p>Geography and Statistics, 2 each from Political Science and Sociology, and one each from Cognitive Sciences, Earth Systems and Geoinformation Science, and Law and Political Science. During the review period, 16 men and 6 women served on the Panel. Panelists generally serve two-year terms (i.e., 4 funding rounds). Panel membership is staggered so the panel always includes a few experienced panelists.</p> <p>Ad hoc reviewers for each proposal, on the other hand, are chosen for their expertise in the particular discipline(s) addressed in the proposal, and thus there are often reviewers from different disciplines reviewing the same proposal. In our examination of the sampled jackets, the COV noted that the disciplinary mix of ad hoc reviewers for each proposal seemed appropriate.</p>	
<p>2. Did the program use reviewers balanced with respect to characteristics such as geography, type of institution, and underrepresented groups?</p> <p>It is important to note that our response to this question is based, in part, on self reported demographic data with only about 25% of reviewers providing this information.</p> <p>The MMS program has an appropriate allocation of reviewers that is correctly biased toward research active faculty. In particular, the largest source of reviewers is from the top 100 research intensive PhD institutions (35.47%), followed by other PhD-granting institutions (26.0%). Reviewers are selected from a large number of states, though there are some inevitable geographical gaps in those states without faculty in active research-oriented programs.</p> <p>The information provided by the MMS program indicates that 35.9% of reviewers provided information about gender, minority and disability status. 24.4% of responding reviewers are female. In comparison, the corresponding NSF-wide percentage of responding female reviewers is 29.8% for FY 2007-2009. For the same period, 4.46% of MMS reviewers claimed minority status while the NSF-wide percentage was 10.11%. Finally, 1.11% claimed disability status though 2.63% of reviewers were included in that same category NSF-wide.</p> <p>While these differences are small, underrepresented groups consistently fall below NSF rates as a whole; MMS program officials should be mindful of this disparity when selecting reviewers. We note, however, that it is difficult to draw firm conclusions in this regard because: (1) most reviewers do not provide demographic information and (2) the size of the potential reviewer population who are from under represented groups varies from program to program and is unknown.</p>	C
<p>3. Did the program recognize and resolve conflicts of interest when</p>	Yes

<p>appropriate?</p> <p>The MMS program director follows a standard set of protocols that are designed to avoid conflicts and to address them in an appropriate way when they are discovered. For example, ad hoc reviewers are pre-screened (based on Biographical Sketches of the PI and co-PIs and sometimes web sites and other material) to avoid soliciting reviews from conflicted individuals. If a selected reviewer notifies the program director of a possible conflict, additional information is solicited to determine if the reviewer has a disqualifying conflict. If the reviewer is conflicted, a review is not solicited from the reviewer and the reviewer's conflict is noted on the NSF Form 7. Similar procedures are followed at all stages of the review process and the COV finds that the established protocols are appropriate.</p>	
<p>4. Additional comments on reviewer selection:</p> <p>none</p>	

A.3 Questions concerning the resulting portfolio of awards under review. Provide comments in the space below the question. Discuss areas of concern in the space provided.

<p>RESULTING PORTFOLIO OF AWARDS</p>	<p>APPROPRIATE, NOT APPROPRIATE⁵¹, OR DATA NOT AVAILABLE</p>
<p>1. Overall quality of the research and/or education projects supported by the program.</p> <p>Comments: The COV was greatly impressed by the quality and diversity of the research supported by MMS. Because of MMS' broad mandate, diversity has many important dimensions including discipline, subject matter, statistical or measurement issue to be addressed, research or educational emphasis, and career stage of the investigators. Maintaining quality across all of these dimensions is tremendously challenging and the COV has enormous respect for the program's success in doing so. In large measure this success is attributable to the innovative management of MMS by Dr. Eavey and to her</p>	<p>Appropriate</p>

⁵¹ If "Not Appropriate" please explain why in the "Comments" section.

<p>long term commitment to identifying and nurturing transformative research.</p>	
<p>2. Does the program portfolio promote the integration of research and education?</p> <p>Comments:</p> <p>During FY 2007-2009, MMS supported 33 one-year undergraduate positions, 83 one-year graduate student positions, and 2 one-year post-doctoral positions. In view of MMS' tight budget and the many competing demands on these funds, the COV was impressed that this level of support was provided to the education and training of the next generation of researchers and educators.</p>	<p>Yes</p>
<p>3. Are awards appropriate in size and duration for the scope of the projects?</p> <p>Comments: Of the 52 grants for which the MMS program was primary during the 2007-2009 period, 10 were Doctoral Dissertation Research Improvement Grants (DDRIGS) and one was a Mid-Career Grant. These were all of one or two years' duration (as is appropriate) and, as was also appropriate, all were for less than \$100K. The remaining 41 grants were all standard and approximately half of them were for one or two years and half for three years. Approximately a quarter of these standard grants were awarded less than \$100K, another quarter between \$100K and \$200K. Fifteen grants, however, were awarded between \$200K and \$300K, while one grant was between \$300K and \$400K, four were between \$400K and \$500K and one was for more than \$500K. These durations and amounts all seem appropriate to the COV.</p> <p>When grants on which MMS was secondary are added to the mix, both the maximum duration and the maximum award size increase. The COV would expect exactly that effect for grants appropriate for co-funding.</p>	<p>Yes</p>
<p>4. Does the overall program portfolio (including ARRA funded awards) have an appropriate balance of innovative/potentially transformative projects?</p> <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of innovative/potentially transformative projects?</p> <p>Comments:</p> <p>The Program Director informed the COV that the MMS program is</p>	<p>Yes</p>

<p>committed to the identification and support of potentially transformative research. Although reviewers (both mail and panel) tend to be judicious in their use of the term transformative, they do occasionally find proposals that seem to qualify. During the review period, proposals explicitly identified by reviewers as "potentially transformative" include the following:</p> <ol style="list-style-type: none"> 1) The collaborative research of Jerome Busemeyer and Zheng Wang to develop a representation of decision theory based on the mathematics of quantum probability theory and to compare it with representations based on traditional probability laws (SES-0817965 and SES-0818277). 2) Mark Handcock's research on the development of probability models and inferential methods for the analysis of data collected using Respondent Driven Sampling (SES-0851555, ARRA supported). 3) The collaborative research of Frederick Conrad, Jose Benki, and Robert Groves to investigate how the linguistic properties of interviewers impact the rate of non-respondents in RDD telephone surveys (SES-0819734 and SES-0819725). 4) The research of Daniel Friedman and Ryan Oprea to build a new computer platform, called Continuous Games (ConG), for studying strategic interaction in the laboratory (SES-0925039, ARRA supported). 	
<p>5. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Inter- and Multi- disciplinary projects? <p>The MMS program is focused on interdisciplinary research activity. MMS co-reviews and co-funds projects in the SBE Directorate, as well as the Statistics Program in the Directorate for Mathematical and Physical Sciences, and occasionally other programs outside of SBE. The composition of this inter-disciplinary activity is not only appropriate, it is a particular strength of the program.</p>	Yes
<p>6. Does the program portfolio have an appropriate balance considering, for example, award size, single and multiple investigator awards, or other characteristics as appropriate for the program?</p> <p>Given the interdisciplinary nature of the work supported by MMS, it should come as no surprise that most of the awards (32 out of 51) are made to projects involving multiple investigators who wish to collaborate on a unified research project; these investigators need not be located at the same institution. NSF supports multi-institutional awards via one of two methods: as a single award with subawards administered by the lead organization, or by</p>	Yes

<p>the linked submission of proposals from different organizations, with each organization receiving a separate award.</p> <p>Because of the relatively small budget of the MMS program many projects are supported at only a modest level, though when sufficiently justified, larger projects are funded. It is our sense that, based on an examination of a sample of funded projects, award magnitudes are appropriate given the budget constraint.</p>	
<p>7. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Awards to new investigators? <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of awards to new investigators?</p> <p>New investigators comprise a subset of all scientists who are seeking funding from NSF. Nevertheless, projects by new PIs have a mean funding rate that is only approximately 12 percentage points lower than projects by veteran PIs (21.1% vs. 32.7%, respectively). This represents a good balance that shows a high level of support for new investigators.</p> <p>ARRA special addendum: A total of 4 of the 11 ARRA-supported proposals included at least one new PI or co-PI. Also, 28.9% of the investigators on the funded ARRA proposals were new investigators. A total of 36.4% (4 out of 11) of the lead investigators on ARRA-supported proposals were new investigators.</p>	Yes
<p>8. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Geographical distribution of Principal Investigators? <p>A majority of proposals received and awards made by MMS go to institutions in states with large numbers of Ph.D. granting institutions. This is to be expected: researchers in research-oriented institutions seek funding opportunities and submit grant proposals, whereas faculty members at other types of institutions tend to spend their time in different ways.</p> <p>Though based on criteria that are not explicitly geographical, the Experimental Program to Stimulate Competitive Research (EPSCoR) is designed to fulfill the Foundation's mandate to promote scientific progress nationwide. The EPSCoR Program is directed at those jurisdictions that have historically received smaller amounts of NSF Research and Development (R&D) funding. Each fiscal year the MMS program pays particular attention to highly ranked proposals submitted from EPSCoR states. EPSCoR may co-fund meritorious proposals from EPSCoR states that meet EPSCoR funding</p>	Yes

<p>criteria. In spite of this consideration, the overall MMS funding rate for proposals from EPSCoR states is approximately 12 percentage points lower than non-EPSCoR states (14.3% vs. 26.5%) and is lower than the NSF-wide mean of 24.5% for EPSCoR states.</p>	
<p>9. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Institutionnel types? <p>The types of institutions that have submitted proposals and received awards from MMS tend to be research intensive PhD institutions. This is both expected and appropriate.</p>	Yes
<p>10. Does the program portfolio have an appropriate balance:</p> <ul style="list-style-type: none"> • Across disciplines and sub disciplines of the activity? <p>Yes. As described above, the MMS Program is interdisciplinary and has a very broad constituency that extends across many areas of scientific research activity. The COV commends MMS' success in promoting research across diverse disciplines.</p>	Yes
<p>11. Does the program portfolio have appropriate participation of underrepresented groups?</p> <p>In answering this question, the COV will address gender and minority involvement.</p> <p>Roughly 31.2% of proposals submitted to MMS included female PIs or co-PIs. This rate is about equal to the Foundation-wide percentage of proposals with women involvement (30%). However, the MMS funding rate for proposals with women involvement is 22.5%, which is slightly less than the 25.9% MMS funding rate for men.</p> <p>Proposals with Minority Involvement for FY 2007-2009 include either a PI or co-PI who has self-reported minority status. On average 7% of proposals submitted to MMS have minority involvement, which is less than the corresponding NSF-wide rate of 10%. The MMS funding rate for proposals with minority involvement is 27.8%. This is slightly higher than the NSF-wide funding rate of 27% and is therefore not a source of significant concern.</p>	Yes
<p>12. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports.</p>	Yes

MMS support of methodological research advances agency and national goals both directly and indirectly. MMS collaboration with statistical agencies to advance methods for collecting and analyzing survey data plays a vital role in improving the quality of data available to policy makers who make decisions that are vital to the nation's economic and social wellbeing. MSS' support of the National Academy of Sciences' Committee on National Statistics also advances this objective and in addition serves the even broader policy objective of providing expert advice on the use and analysis of data to advance national priorities. NSF's mission and national priorities are indirectly advanced by MMS' contribution to the data infrastructure and statistical capacity required for its analysis. Both data and the capacity to analyze them effectively are vital to scientific innovation which, in turn, improves social and economic welfare.

13. Additional comments on the quality of the projects or the balance of the portfolio:

None

ARRA Specific Comments: Additional comments regarding the portfolio of ARRA awards addressing the NSF or program-specific priorities for ARRA funding?

none

A.4 Management of the program under review. Please comment on:

1. Management of the program.

Comments:

The COV has concluded that the MMS program is professionally and competently managed. Proposals are processed quickly upon receipt; reviewers are selected with care and attention to the breadth of areas covered by the program; panelists are also drawn from a similar diverse group that is representative of the proposal submissions; a suitable number of reviews are obtained; rationales for acceptances and declines are both clear and timely; planning and prioritization are not reactive but instead are forward looking and well thought out. Finally, great ingenuity is demonstrated in leveraging limited funds through strategic partnerships both within and outside of NSF.

2. Responsiveness of the program to emerging research and education opportunities.

Comments:

The MMS program is very responsive to emerging opportunities. This is partly a function of the interdisciplinary nature of the program, but is also due in large part to the Program Director's extensive network of interactions with other co-funding programs, as well as her continuing professional development. These factors interact to lead the COV to conclude that the Program Director has a keen eye cast on emerging opportunities and is eager to demonstrate how such opportunities can transform ongoing research in the Division of Social and Economic Sciences and inspire new projects.

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio.

Comments:

Planning and prioritization is guided by Dr. Eavey's clear and forward looking vision of the role of data and statistical analysis in science and policy making. She regularly collaborates with other programs within NSF to extend the breadth of the subject matter and the variety of disciplines that are relevant to MMS's mission. Just as important are the connections she has forged with Federal statistical agencies, the Committee on National Statistics, and the American Statistical Association. These external connections not only allow Dr. Eavey to leverage her modest budget but also keep her informed about emerging statistical issues that are of importance to scientific inquiry and public policy.

4. Responsiveness of program to previous COV comments and recommendations.

Comments:

The 2010 COV is satisfied with the MMS response to the 2007 COV report.

5. Additional comments on program management:

None

PART B. RESULTS OF NSF INVESTMENTS

The NSF mission is to:

- promote the progress of science;
- advance national health, prosperity, and welfare; and
- secure the national defense.

To fulfill this mission, NSF has identified four strategic outcome goals: DisCOVeRY, Learning, Research Infrastructure, and Stewardship. The COV should look carefully at and comment on (1) noteworthy achievements based on NSF awards; (2) ways in which funded projects have collectively affected progress toward NSF’s mission and strategic outcome goals; and (3) expectations for future performance based on the current set of awards.

NSF investments produce results that appear over time. Consequently, the COV review may include consideration of significant impacts and advances that have developed since the previous COV review and are demonstrably linked to NSF investments, regardless of when the investments were made.

To assist the COV, NSF staff will provide award “highlights” as well as information about the program and its award portfolio as it relates to the three outcome goals of DisCOVeRY, Learning, and Research Infrastructure. The COV is not asked to review accomplishments under Stewardship, as that goal is represented by several annual performance goals and measures that are monitored by internal working groups that report to NSF senior management.

B. Please provide comments on the activity as it relates to NSF’s Strategic Outcome Goals. Provide examples of outcomes (“highlights”) as appropriate. Examples should reference the NSF award number, the Principal Investigator(s) names, and their institutions.

B.1 OUTCOME GOAL for Discovery: “Foster research that will advance the frontier of knowledge, emphasizing areas of greatest opportunity and potential benefit and establishing the nation as a global leader in fundamental and transformational science and engineering.”

Comments:

As we have already noted, MMS has an impressively diversified interdisciplinary research portfolio that spans the major social and behavioral science disciplines and includes a very broad array of topics. Among these awards is ongoing support for researchers who have made major advances in statistical theory and practice. These individuals include, for example, Robert Groves (presently Director of the Bureau of Census), Charles Manski, and Paul Rosenbaum.

In the current COV review period, survey methodologist/sociologist Robert Groves in collaboration with linguist Jose Benki, and cognitive psychologist Fred Conrad were supported to examine acoustic properties, listener perceptions, and outcomes of interactions between survey interviewers and sample respondents (SES-0819734 and SES-0819725).

The ongoing research programs of Charles Manski (most recently SES-0911181) and Paul Rosenbaum (most recently SES-0849370) focus on causal inference from observational data. The work of both is widely recognized as pathbreaking. Manski’s work emphasizes partial identification and Rosenbaum’s work emphasizes matching strategies. MMS support of these two outstanding scholars is also notable because there is much contention about the strengths and weakness of alternative approaches to causal inference based on observational data and “failed” experiments. The COV is impressed that both of these outstanding lines of research are funded under MMS’ large “intellectual umbrella.”

Fundamental and transformative research is, of course, not exclusively the domain of scholars with well established track records of innovation. Thus, the COV was impressed by MSS' attention to funding the work of young scholars. Such awards are inherently more risky than awards to scholars with established records of accomplishment but they are vital to creating the foundation for future innovation. We are confident that some of these awards will result in fundamental advances.

B.2 OUTCOME GOAL for Learning: *“Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens.”*

Comments:

The MMS Program accomplishes this learning outcome goal by providing support in a variety of ways, including Mid-Career Methodological Fellowships, Doctoral Dissertation Improvement Awards, CAREER awards, and REU supplements. Mid-Career Methodological Fellowships provide an opportunity for researchers interested in the development of methods for the social, behavioral, and economic sciences to spend a year retraining and interacting with researchers from other relevant disciplines. It is expected that these researchers will not only improve their own individual skill sets but also will transmit this knowledge to their students, thus facilitating the education of the "next generation" of methodologists. MMS supported one Mid-Career Fellowships during the FY 2007 – FY 2009 period. Political scientist Elisabeth Gerber received support to acquire training in GIS and spatial analysis tools that will provide the basic technology for the construction of flexible measures of multi-level spatial context from Census and other data (SES-0849683 -- co-funded with Political Science).

The MMS Program also provided support for ten Doctoral Dissertation Improvement awards. This is double the number of doctoral dissertation awards from the last COV period and is an area of the Program that has the potential for continued growth. Projects supported include extensions of Respondent-Driven Sampling (SES-0718377, PIs Heckathorn and Wejnert); the development of a theory of strategic learning using a multiple methods approach (SES-0752659, PIs Lewis-Beck and Wittrock); the development of a new method for analyzing discrete time-series cross-sectional data (SES-0918320, PIs Martin and Pang); and the development of a methodology for generating fully-synthetic micro-level datasets that permit valid estimation of small area statistics while protecting the identities of respondents (SES-0918942, PIs Raghunathan and Sakshaug).

The MMS Program supported two CAREER awards during the review period. In FY 2007, the Program supported Paul Torrens' research on the development of a reusable and behaviorally founded computer model of pedestrian movement and crowd behavior amid dense urban environments (BCS-0643322 -- primary in GSS). In FY 2008, the Program supported Diansheng Guo's research on developing a computational-visual framework for the analysis of spatial interactions (BCS-0748813 - - primary in GSS).

To enhance undergraduate education and training in the development of methods for the social, behavioral, and economic sciences and to broaden the participation of students from under represented groups in high-quality research projects, the MMS Program revised its program

solicitation in spring 2008 to encourage the submission of REU supplements to ongoing MMS-supported research projects or as a component of proposals for new or renewal MMS awards. The MMS Program supported one REU supplement in FY 2009 (SES-0948282, PI Krosnick).

Because the Program primarily supports methodological or statistical advances, much of the research supported by the Program will have a second-order effect on society; i.e., the research will bear fruit (from society's perspective) as it is applied to substantive problems. Some projects, however, have immediate effects. The survey research projects supported in collaboration with the federal statistical agencies tend to fall into this category. Projects supported by funds from this collaboration include travel support for the investigators to present the results of their research to interested staff from the federal statistical agencies. In FY 2009, projects supported as part of this effort included collaborative work by F. Jay Breidt and Jean Opsomer (SES-0922142) on issues in analytic inference from complex surveys, and a collaborative investigation by Roger Tourangeau and Frauke Kreuter (SES-0850445 and SES-0850999) on the sources of and possible remedies for three related forms of survey measurement error. MMS also supports activities that disseminate statistical research to the broader public. The MMS-supported NAS Committee on National Statistics disseminates the reports of its panel and workshop activities extensively. In addition, a portion of all Committee and Panel meetings are open to the public for observation (SES-0453930 and others).

B.3 OUTCOME GOAL for Research Infrastructure: *“Build the nation’s research capability through critical investments in advanced instrumentation, facilities, cyberinfrastructure and experimental tools.”*

Comments:

The MMS Program supports the methodological infrastructure of social, behavioral, and economic research through its support of activities such as the National Academy of Sciences' (NAS) Committee on National Statistics, conferences, workshops, and training activities and through its support of research on the methodological aspects of data collection procedures.

The Program has provided long-term core support, both through a series of peer-reviewed awards and as a conduit for funds transferred from the federal statistical agencies, to the NAS Committee on National Statistics (SES-0453930 and others). The Committee was established in 1972 with the primary goal of improving the statistical methods and information on which public policy decisions are based. The Committee also directly benefits the social sciences by (1) improving national statistics and furthering the development and application of statistical methods for social science research, (2) linking the federal statistical system and the social science research community, (3) involving academic scientists in research to improve national statistics, (4) providing forums for the exchange of information and ideas, and (5) advancing the social and economic sciences within the NAS-NRC and through the Committee's relationship with the Congress, OMB, and many research and program agencies.

The MMS Program has partnered with a number of programs in SBE to provide support for major data collection/data dissemination activities. For example, the MMS Program has provided seed

support for most of the Census/NSF Research Data Centers (RDCs). These centers are located at or near major universities and provide researchers access to confidential Census Bureau data (most recently 0851417, PI Fitch -- primary in Sociology). MMS provided support for upgrades to the National Historic Geographic Information System (BCS-0648045 and BCS-0647902 -- primary in Geography and Spatial Sciences (GSS)). MMS also provided support for the next phase of the International Integrated Microdata Series (SES-0851414, PI Ruggles -- primary in Sociology), the development of new software for conducting economic experiments (SES-0925039, PI Friedman -- primary in Economics), and the development of a social science TeraGrid gateway (SES-0922005, PI Vilhuber -- primary in Economics).

MMS supports the Luxembourg Income Study (LIS), a research and data center cooperatively financed by a consortium of multiple nations. LIS has four, longstanding goals: 1) harmonize microdatasets, from multiple countries, which include data on income, wealth, employment and demography; 2) provide a secure method that allows access to data with privacy restrictions; 3) create a remote-access system to enable research conducted from off-site locations; and 4) promote the use of microdata in comparative research on social and economic wellbeing at a global level, conduct research onsite, and sponsor and host scholars using the LIS data (SES-0960763, SES-0649025 and others -- primary in Sociology). MMS also provides limited support for the big three SBE data sets, the General Social Survey (SES-0824618 -- primary in Sociology), the Panel Study of Income Dynamics (SES-0518943 -- primary in Economics), and the American National Election Survey (SES-0535334 -- primary in political science).

MMS, Sociology, and Economics provided support for the development of the Data Documentation Initiative (DDI) specification. DDI is a publicly available standard for the content, presentation, transport, and preservation of metadata about data sets in the social and behavioral sciences. The continued development of DDI has been overseen by an alliance of over 25 major social science organizations in the U.S., Europe, and Canada. It now is considered to be the most advanced metadata standard in the social sciences.

The MMS Program continues its support for the American Statistical Association's (ASA) Federal Statistics Fellowship Program, both through a series of peer-reviewed awards (SES-0961037, SES-0127722 and others) and by serving as a conduit for funds transferred from the participating agencies for the support of the fellows. This ASA activity is designed to bridge the gap between academic scholars and government social science research by bringing leading academic researchers to the Census Bureau, the Bureau of Labor Statistics, and the National Center for Education Statistics to work on topics of mutual interest, including small-area statistics and data confidentiality and disclosure issues. The activity provides academic researchers access to data and information that otherwise would be difficult or impossible to obtain. In return, the participating federal statistical agencies benefit from the experience and expertise of the visiting scientists.

In addition to these and other infrastructure activities, the Program contributed support in FY 2007 – FY 2009 to a number of conferences and workshops. The Program, for example, continued its support of the Political Methodology conferences (SES-0720343, PI Maynard-Moody -- primary in Political Science). The Program also provided support for a Workshop on Statistical Methods for the Analysis of Network Data (SES-0924358, PI Fienberg), for the 2008 Annual Meeting of the Society for Mathematical Psychology (0820879, PI Van Zandt -- co-funded with Perception, Action, and

Cognition), and for a conference on the foundation of economic models (0721110, PI Schotter -- primary in Economics).

Partnership with the Federal Statistical Agencies

The MMS Program continues its collaboration with a consortium of 10-12 federal statistical agencies for the support of research on statistical methodology for surveys. This partnership was originated by the MMS Program Officer in 1998 and has made grants every year but one since then. As stated in the MMS Program announcement, proposals submitted to the MMS Program for consideration by the agencies for joint support may address any aspect of survey methodology. Priority is given, however, to basic research proposals that are interdisciplinary in nature, have broad implications for the field in general, and have the greatest potential for creating fundamental knowledge of value to the Federal Statistical System.

Generally speaking, the agencies only consider proposals submitted to the mid-January MMS target date for possible agency support. Proposals of interest to the federal statistical agencies are subject to a two-tier review process. First, all proposals are reviewed by the regular MMS advisory panel. A second panel of agency representatives then is convened to review meritorious proposals for relevance to the federal agencies. During the review period, the Program supported 16 proposals of interest to the federal agencies, receiving contributions from the agencies of somewhat over a quarter of a million dollars per year. We note that a 2006 review of the partnership activities by the agencies approved the accomplishments to that date and recommended the partnership's continuation.

PART C. OTHER TOPICS

C.1. Please comment on any program areas in need of improvement or gaps (if any) within program areas.

While the COV did not identify any program areas in need of improvement, we do agree with Dr. Eavey that there are important opportunities for transformative methodological research.

The COV suggests a few areas that might specifically be emphasized in upcoming years: (1) Dr. Eavey is in the early stage of an initiative to create a "Measurement, Methods, and Statistics" community. We encourage her to continue with this initiative because it will serve to enhance the prominence of interdisciplinary methodological work. (2) The cyberinfrastructure initiative in which Dr. Eavey took a leadership role involves technological innovations (e.g., sensor nets) that generate massive amounts of data. Technological innovations with this characteristic have created the need for continued development of statistical methods for analyzing massive amounts of data. These data often measure phenomenon over time and space. The COV recommends increased attention be given to developing statistical methods for describing and predicting phenomena evolving over time and space and for making causal inferences about the effects of interventions or shocks that might affect that evolution. (3) The 2007 COV recommended that MMS try to address the longstanding need to better integrate the

“design-based” and “model-based” approaches to survey research. That need still exists and this COV urges that it be met.

C.2. Please provide comments as appropriate on the program’s performance in meeting program-specific goals and objectives that are not COVERed by the above questions.

The COV has no additional comments.

C.3. Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

Methodological research has always been fundamental to advancing scientific inquiry and policy analysis. The exponential growth in data availability and information processing capability has only increased the centrality of methodological research in these two domains and wherever data are used. It is, thus, essential that NSF find the means to provide additional financial resources to the MMS Program. Given Dr. Eavey’s superior leadership and management of the program, the COV is confident that increased funding will be well used. Greater NSF support for MMS can be achieved in two ways. One is increasing the MMS line item budget. We recognize that this source of increased funding may be institutionally challenging but outstanding performance should be rewarded. A second source of increased funding is indirect. The NSF and the SBE in particular should be lauded for their greater use of special initiatives to spur research on important but under-researched topics. A hallmark of many of these topics is that new methods for data collection and/or analysis are required to achieve breakthroughs. The COV, thus, recommends that special attention be given to identifying methodological dimensions of special initiatives and that, where appropriate, methods-related innovations be emphasized in program announcements.

C.4. Please provide comments on any other issues the COV feels are relevant.

The COV members were surprised to see how difficult it was to retrieve data from the NSF data system, and that reporting conventions and system arrangements made some data incorrect. For example, see our comments under A2 about how the number of reviews addressing both NSF criteria of excellence is underestimated because the classification of a review as fulfilling the requirement depends on text appearing in a particular box on the review form rather than on the content of the review. As a further example, we understand that it is very difficult to retrieve information on co-funding or to aggregate data over primary and secondary proposals. We strongly recommend that NSF make every effort to render the data system more informative, accurate, and user friendly. Consultations with users would give guidance on what is needed.

C.5. NSF would appreciate your comments on how to improve the COV review process, format and report template.

The COV was enormously impressed with the materials Program Officer Eavey and Science Assistant Melissa Jacquart prepared for our use before and during our visit to NSF and we would like to express our heartfelt thanks for all the help these materials provided. We are aware that the efforts to produce those materials were at least somewhat hampered by the awkwardness of the data systems in place at NSF and some seemingly arbitrary restrictions about how those systems could be used in preparing our materials (e.g. it seems strange that a program that is inherently multidisciplinary should have to exile all

data about co-reviewed or co-funded proposals to an appendix). Please see our comments on NSF data systems in C.4 above.

The COV suggests that our time would have been better spent reacting to materials prepared by the program staff and then interviewing the staff about issues not included in the briefing materials, and perhaps asking for further analyses as questions arose in our review. That is, we would have liked the process we participated in to more closely resemble the activities typically expected of a Committee of Visitors to an academic department – a review of the results of the department’s self-study coupled with informative interviews with departmental members.

SIGNATURE BLOCK:

Daniel Nagin, Chair

Judith Tanur

Marc Armstrong

For the MMS COV

Political Science

**FY 2010 REPORT FOR
NSF COMMITTEES OF VISITORS (COVs)**

Date of COV: September 22-24, 2010
Program/Cluster/Section: Political Science/Social and Political Sciences Cluster
Division: Social and Economic Sciences
Directorate: Social, Behavioral and Economic Sciences
Number of actions reviewed: Awards: 76 projects Declinations: 30 projects Other: 0
Total number of actions within Program/Cluster/Division during period under review: Awards: 196 projects Declinations: 619 projects Other: 112
Manner in which reviewed actions were selected: Only competitive projects were selected for review. Continuous grants, supplements and other projects, such as those that were withdrawn, were not considered. Projects which were submitted to another solicitation, such as the Human and Social Dynamics, were not evaluated. A random sample of 10 awards and 10 declines for each year was selected for review. Of the 10, four dissertations and six regular projects were provided. Additionally, SGERs, EAGERs, RAPIDs, workshops or any other projects which underwent a unique review process were also provided. The members also requested an additional 12 projects and 3 supplements for further reference.

PART A. INTEGRITY AND EFFICIENCY OF THE PROGRAM'S PROCESSES AND MANAGEMENT

Briefly discuss and provide comments for *each* relevant aspect of the program's review process and management. Comments should be based on a review of proposal actions (awards, declinations, and withdrawals) that were *completed within the past three fiscal years*. Provide comments for *each* program being reviewed and for those questions that are relevant to the program under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

A.1 Questions about the quality and effectiveness of the program's use of merit review process.

Provide comments in the space below the question. Discuss areas of concern in the space provided.

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABL E⁵²
<p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>Comments:</p> <p>Overall, we are quite impressed. The NSF review process remains the gold standard internationally, and the Political Science program justifiably prides itself for its thoughtful and careful consideration of proposals.</p> <p>We applaud the innovation of creating two deadlines and two panel meetings for dissertation proposals, whose numbers have strikingly increased in the past few years.</p> <p>We are concerned, however, that there could eventually have to be a trade-off between quantity of proposals and quality of review process. We agree with the program directors that larger panels would be counter-productive, but the number of proposals the directors and panelists must now review is getting to be unwieldy.</p>	<p>Yes</p>
<p>2. Are both merit review criteria addressed</p> <p>a) In individual reviews?</p> <p>b) In panel summaries?</p> <p>c) In Program Officer review analyses?</p> <p>Comments:</p> <p>We notice that some individual reviewers continue to have difficulty addressing broader impacts. Sometimes, for example, the reviewer simply repeats his/her statement about intellectual merit. The panel summaries and</p>	<p>No</p> <p>Yes</p> <p>Yes</p>

⁵² If “Not Applicable” please explain why in the “Comments” section.

<p>program director reviews do a much better job.</p> <p>This is largely an NSF-level problem, but we do note that the program directors have been sending improved instructions to reviewers. If they are effective, the next COV should see improvements in the application of the “broader impact” criterion.</p>	
<p>3. Do the individual reviewers provide substantive comments to explain their assessment of the proposals?</p> <p>Comments:</p> <p>Despite the occasional case of an inadequate review, the overall quality of the reviews is very high. Moreover, program directors do an excellent job of compensating for any unevenness across the reviews.</p>	YES
<p>4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)?</p> <p>Comments:</p>	Yes
<p>5. Does the documentation in the jacket provide the rationale for the award/decline decision?</p> <p>(Note: Documentation in jacket usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), program officer review analysis, and staff diary notes.)</p> <p>During FY 2009, NSF permitted reversal of a declined decision for funding through ARRA for proposals declined after October 1, 2008. (NOTE: This question does not apply to programs for which the reversal decline option was not used.)</p> <p>i) Were the reversals of the decision to decline based on both the high quality* of the reviews received on the initial submission and the lack of available funding at the time the origin was made?</p> <p>*Rated "Very Good or above" or the functional equivalent by review panels.</p> <p>ii) Is documentation provided, including a revised Review Analysis, to support the award decisions?</p>	<p>Yes</p> <p>Not Applicable</p>

<p>Comments:</p>	
<p>6. Does the documentation to PI provide the rationale for the award/decline decision?</p> <p>(Note: Documentation to PI usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), and, if not otherwise provided in the panel summary, an explanation from the program officer (written or telephoned with diary note in jacket) of the basis for a declination.)</p> <p>Comments: Even though a panel summary does not always provide all the detail a PI may desire, the program directors are quite willing to provide this information when PIs request it.</p>	<p>Yes</p>
<p>7. Is the time to decision appropriate?</p> <p>Note: Time to Decision --NSF Annual Performance Goal: For 70 percent of proposals, inform applicants about funding decisions within six months of proposal receipt or deadline or target date, whichever is later. The date of Division Director concurrence is used in determining the time to decision. Once the Division Director concurs, applicants may be informed that their proposals have been declined or recommended for funding. The NSF-wide goal of 70 percent recognizes that the time to decision is appropriately greater than six months for some programs or some individual proposals.</p> <p>Comments: Political Science easily exceeds NSF's annual performance goal of 70% within 6 months. 91% of proposals are processed within six months.</p>	<p>Yes</p>
<p>8. Additional Comments</p> <p>a) Additional comments on the quality and effectiveness of the program's use of merit review process.</p> <p>b) To what extent does the documentation in the jacket or otherwise available provide the rationale for use of ARRA funding?</p>	

The program directors nicely justify the ARRA awards in the review analyses. All of these proposals were highly competitive and would have been funded had the original budget been larger. Much of it is also quite transformative; of note are the Brandt, Freeman, and Schrodts proposal forecasting conflict and cooperation in real time and Kanchan Chandra's investigation of how ethnic divisions become politicized and potentially produce instability in democracies.

A.2 Questions concerning the selection of reviewers. Provide comments in the space below the question. Discuss areas of concern in the space provided.

SELECTION OF REVIEWERS	YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE <small>53</small>
<p>1. Did the program make use of reviewers having appropriate expertise and/or qualifications?</p> <p>Comments:</p>	Yes
<p>2. Did the program use reviewers balanced with respect to characteristics such as geography, type of institution, and underrepresented groups?</p> <p>Note: Demographic data is self reported, with only about 25% of reviewers reporting this information.</p> <p>Comments:</p> <p>It is surprising that race and gender data are missing for about 68% of reviewers. NSF should consider ways to improve the self-reporting of this information.</p> <p>We support the program directors' goal of improving gender balance on the review panels. During the 3-year period we are reviewing, there were 9 more men than women on 9 panels, which is just shy of a 50-50 balance. This is significantly better than the discipline's gender distribution, which is closer to 26% female (according to APSA's "Data Snapshot: The Proportion of Women in the Political Science Profession" by Sedowski and Brintnall, 2007).</p>	Yes

⁵³ If "Not Applicable" please explain why in the "Comments" section.

<p>We applaud the program directors' leadership in gender equality. For example, the 50-50 balance on the review panels is important for maintaining certain dynamics and for fair treatment of scholars involved in the proposal and review process.</p>	
<p>3. Did the program recognize and resolve conflicts of interest when appropriate?</p> <p>Comments: Painstakingly so.</p>	<p>Yes</p>
<p>4. Additional comments on reviewer selection:</p>	

A.3 Questions concerning the resulting portfolio of awards under review. Provide comments in the space below the question. Discuss areas of concern in the space provided.

<p>RESULTING PORTFOLIO OF AWARDS</p>	<p>APPROPRIATE, NOT APPROPRIATE⁵⁴, OR DATA NOT AVAILABLE</p>
<p>1. Overall quality of the research and/or education projects supported by the program.</p> <p>Comments: The Political Science award portfolio includes, in addition to high quality research projects, numerous first-rate workshops and training programs that nurture and advance methodological capacity. It also encourages cutting-edge science with multidisciplinary explorations of new approaches and questions.</p>	<p>Appropriate</p>
<p>2. Does the program portfolio promote the integration of research and education?</p> <p>Comments: In addition to the training programs (two EITM summer institutes, the</p>	<p>Appropriate</p>

⁵⁴ If “Not Appropriate” please explain why in the “Comments” section.

<p>Institute of Qualitative and Multi-Method Research, Networks in Political Science Conference, Political Methodology Conference, Summer Institute in Political Psychology, Journeys in World Politics, Ralph Bunche Institute), a high number of graduate (275) and undergraduate (233) students receive training as RAs on regular research grants. When combined with the six post-docs, there are an average of 2.62 students trained for each project.</p>	
<p>3. Are awards appropriate in size and duration for the scope of the projects?</p> <p>Comments:</p>	<p>Appropriate</p>
<p>4. Does the overall program portfolio (including ARRA funded awards) have an appropriate balance of innovative/potentially transformative projects?</p> <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of innovative/potentially transformative projects?</p> <p>Comments:</p>	<p>Appropriate</p> <p>Appropriate</p>
<p>5. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Inter- and Multi- disciplinary projects? <p>Comments:</p> <p>The Program has been on the forefront of important interdisciplinary and multidisciplinary efforts, and it has a long history of doing so. For example, it was instrumental to the initiation of the subfields of political psychology and political economy which, by their very nature, require cross-disciplinary training and research collaborations. A recent example is the support the Program has given to training, research and brainstorming about how genetics, biology, neuroscience, and politics can inform each other.</p> <p>Political Science co-funded most extensively with the Law and Social Sciences program, the Methodology, Measurement and Statistics program, and the Sociology program within SES. In BCS, Political Science co-funded most extensively with Social Psychology and Cultural Anthropology and, consistent with burgeoning interest in interdisciplinary research involving networks, has begun to co-fund regularly with the Geography and Spatial Sciences program. Outside of the SBE Directorate, Political Science co-funds with a wide assortment of programs and directorates. For example, the program partially funded a project submitted to</p>	<p>Appropriate</p>

<p>the program for Physics Education and Interdisciplinary Research in the Directorate for Mathematical and Physical Sciences. Furthermore, the Information Integration and Informatics program from the Division of Information and Intelligent Systems contributed to one of the Political Science-led proposals.</p>	
<p>6. Does the program portfolio have an appropriate balance considering, for example, award size, single and multiple investigator awards, or other characteristics as appropriate for the program?</p> <p>Comments:</p> <p>We understand that the program directors are sensitive to the balance of educational investments versus core political science proposals and we concur. Indeed, the program directors ask specifically about criteria and evaluation for the continuation of the highly successful training programs. We want to ensure that core political science proposals are not crowded out by these demands.</p>	<p>Appropriate</p>
<p>7. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Awards to new investigators? <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of awards to new investigators?</p> <p>NOTE: A new investigator is defined as an individual who has not served as the PI or co-PI on any award from NSF (with the exception of doctoral dissertation awards, graduate or postdoctoral fellowships, research planning grants, or conferences, symposia & workshop grants.)</p> <p>Comments:</p> <p>The 2007 COV report focused on overall numbers of new investigators, including research assistants and post-docs. We think the percentage of interest is new PIs, and here the program average is a bit over 20%. This is similar trend to the NSF-wide percentage.</p> <p>In regards to the 14 ARRA funded projects, 36.54% of the PIs and CO-PIs were new.</p>	<p>Appropriate</p> <p>Appropriate</p>
<p>8. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Geographical distribution of Principal Investigators? 	<p>Appropriate</p>

<p>Comments:</p> <p>There is a high correlation between the geographical location of PIs and the location of PhD granting-institutions. This is appropriate. Even so, attention given to ensuring geographical diversity. The average Political Science funding rate for proposals from EPSCoR states is only approximately 2.5 percentage points less than the funding rate for non-EPSCoR states (22.22% vs. 24.91%) which are comparable to the NSF-wide average funding rate for EPSCoR states of 24.50%.</p>	
<p>9. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Institution types? <p>Comments:</p> <p>The program directors have made a concerted effort to fund competitive research proposals from institutions that have been largely unrepresented in past years. The result has been an increase in applications from those and similar institutions subsequently</p>	<p>Appropriate</p>
<p>10. Does the program portfolio have an appropriate balance:</p> <ul style="list-style-type: none"> • Across disciplines and sub disciplines of the activity? <p>Comments:</p>	<p>Appropriate</p>
<p>11. Does the program portfolio have appropriate participation of underrepresented groups?</p> <p>Comments:</p> <p>Applications by women are, at c. 38%, above the NSF average of c. 30%, but the funding rate is lower (c. 22% v. 24%, respectively). A similar pattern exists for minorities. This suggests that there is still work to be done in preparing women and minority scholars for research success.</p>	<p>Appropriate</p>
<p>12. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports.</p> <p>Comments: Having read through all the material provided to us, we feel comfortable here simply quoting the descriptive paragraph provided by the program directors:</p> <p>“The Political Science program has funded research on terrorism, guerrilla</p>	<p>Appropriate</p>

insurgencies, civil war, and peaceful settlement to civil war. Moreover, it has funded research on “The Effects of Terrorist Threats on Democratic Support in Liberal and Illiberal Democracies”. The protection of human rights constitutes still another national priority that is addressed in work supported by the program; several projects explore this area, with one receiving ARRA funding, “Treaties, Institutions and Torture: Theoretical and Empirical Inquiry.” PIs on both dissertation and senior Political Science grants have investigated such vitally important questions as the basis of recovery efforts in the wake of Hurricane Katrina. The program has supported several studies specifically focused on the economic recession, for example, projects on foreclosures in the Houston regional housing market and citizen expectations about recovery spending.”

13. Additional comments on the quality of the projects or the balance of the portfolio:

ARRA Specific Comments: Additional comments regarding the portfolio of ARRA awards addressing the NSF or program-specific priorities for ARRA funding?

A.4 Management of the program under review. Please comment on:

1. Management of the program.

Comments: Excellent. The high level of performance is particularly noteworthy given how many proposals the program receives and how much outreach it does, particularly in the effort to broaden participation. To reach graduate students and junior faculty, they have held special sessions held at the University of Nebraska, for the College of Arts and Sciences and the Department of Communication; the University of Virginia; New York University, for graduate students at NYU, Columbia, and other nearby institutions; the University of Iowa; Southern Illinois University at Carbondale; and Virginia Tech. Program directors have spoken on funding opportunities by visiting the Institute for Qualitative and Multi-Method Research for the last three years, which targets graduate students and junior faculty, the Conference of Experiments on Political Science and Economics, the Political Networks Conference, and the Midwest Political Science Annual Meeting. Political Science program directors also participated in NSF Days at Eastern Washington University, SUNY-Binghamton, and the University of Iowa. In addition, the program directors regularly attend meetings of the ANES Advisory Board and the EITM Advisory Board.

Besides outreach activities, program directors are also key players in activities beyond the confines of their program but within the National Science Foundation.

2. Responsiveness of the program to emerging research and education opportunities.

Comments: Excellent, indeed innovative.

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio.

Comments: Excellent

4. Responsiveness of program to previous COV comments and recommendations.

Comments: Excellent

5. Additional comments on program management:

The Political Science Program has flourished under the combination of a permanent officer and a rotator. The directors have an outstanding reputation for good judgment, open communication, and bridging with constituencies both well and poorly represented.

Given the extent of their commitment to outreach, to bringing in underrepresented groups, to ensuring research that promotes scientific discovery and better informed policy, and to figuring out how to provide the skills needed by this and future workforces, we believe the directors are badly overworked and stretched. We urge the NSF to find the funds to support an additional rotator or a shared rotator with another program. There may be options involving more part-time opportunities, with costs shared with the home institution. (see C 1).

PART B. RESULTS OF NSF INVESTMENTS

The NSF mission is to:

- promote the progress of science;
- advance national health, prosperity, and welfare; and
- secure the national defense.

To fulfill this mission, NSF has identified four strategic outcome goals: Discovery, Learning, Research Infrastructure, and Stewardship. The COV should look carefully at and comment on (1) noteworthy achievements based on NSF awards; (2) ways in which funded projects have collectively affected progress toward NSF's mission and strategic outcome goals; and (3) expectations for future performance based on the current set of awards.

NSF investments produce results that appear over time. Consequently, the COV review may include consideration of significant impacts and advances that have developed since the previous COV review and are demonstrably linked to NSF investments, regardless of when the investments were made.

To assist the COV, NSF staff will provide award “highlights” as well as information about the program and its award portfolio as it relates to the three outcome goals of Discovery, Learning, and Research Infrastructure. The COV is not asked to review accomplishments under Stewardship, as that goal is represented by several annual performance goals and measures that are monitored by internal working groups that report to NSF senior management.

B. Please provide comments on the activity as it relates to NSF’s Strategic Outcome Goals. Provide examples of outcomes (“highlights”) as appropriate. Examples should reference the NSF award number, the Principal Investigator(s) names, and their institutions.

B.1 OUTCOME GOAL for Discovery: *“Foster research that will advance the frontier of knowledge, emphasizing areas of greatest opportunity and potential benefit and establishing the nation as a global leader in fundamental and transformational science and engineering.”*

Comments:

Political science provides rigorous assessment of conflict, cooperation and contestation. Several projects funded by NSF in the last three years apply political science insights to societal and health problems around the world.

Advancing the scientific investigation of cooperation is a hallmark of NSF’s Political Science Program. In recently funded work, “Cooperation, Ethnocentrism, and Cancer,” Robert Axelrod expands his finding on the benefits of cooperation among people to cellular cooperation with real implications for the fight against cancer. Nobelist Elinor Ostrom and her collaborators build on past research to advance our understanding of how and when individuals and groups get the greatest benefits of cooperation. These are a few among the many projects on cooperation that the program supports.

Research on the genetic basis of political beliefs and behavior is another frontier. The program has been appropriately selective in funding certain projects that demonstrate sophisticated application of serious genetic research. It has also declined projects that either failed to command the science or failed to use it to good effect.

Another series of projects considers the sources of contestation that might affect state-building and government stability. For example, one study documents Chinese private entrepreneurs' support of communism as an obstacle to democratic reform. Another focuses on the aspects of laws and constitutions that are most likely to help fragile governments survive. A third, using survey data from eighteen nations, finds that the citizens of many countries belie the US-based observation that a bad economy produces votes for challengers and a good economy votes for incumbents.

The Political Science program has funded a variety of studies of conflict. Their implications inform policy makers on the underlying causes of violence and potential mechanisms for alleviating its human costs.

NSF-supported studies on conflict address fundamental issues such as the role of international reputation (Crescenzi), credible commitments (Tomz), and international laws (Morrow), yielding important lessons on the best paths to successful deterrence and compliance with peace-promoting institutions. Especially timely topics, such as the duration of civil wars (Gleditsch), forecasting international conflict (Brandt, Schrodt, and Freeman), and the susceptibility of new constitutions to the destabilizing effects of war and violence are also explored.

Finally, the study of democratic institutions and public opinion is a fundamental concern of political science and includes how institutions and elections function around the world and at home. For example, data was collected and analyzed on 50 states over 30 years to examine how campaign finance laws affect the electoral process, while another studied ballot design. Studies using survey data from the General Social Survey and American National Election Study over time examined public opinion and policy responsiveness.

The study of institutions and bureaucracies contribute greatly to understanding innovation. For example, in a study of bureaucracies and regulatory agencies, recommendations for improvements in the regulatory procedures used by agencies such as the FDA have been put forward to increase the health and safety of the public. The political science program has and should continue to focus on such core disciplinary concerns that simultaneously improve the capacity of our government to innovate and improve the competitive capacity of our private institutions.

B.2 OUTCOME GOAL for Learning: “*Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens.*”

Comments:

The Political Science program funds several activities that enhance the skills of academics. There is particular attention to broadening participation through the training of women and minorities. The training primarily focuses on undergraduates, graduate students, or junior faculty. The training programs have emphasized methodological approaches and techniques in EITM, quantitative, and qualitative methodology. They have been in areas designated as transformative, are often interdisciplinary, and have created new fields.

2007

Aldrich, John *EITM Summer Training Institute* (36 months FY07 \$259,946, FY08 \$287,197, FY09 \$299,023)

Kadera, Kelly *Journeys in World Politics: A Mentoring Workshop for Junior Women Studying*

International Relations (60 months \$78,548)

Maynard-Moody, Steven *Support for Conferences and Mentoring Activities in Political Methodology* (36 months \$245,388)

Robison, Gene, *Conference on Biology and Politics* (12 months \$44,300)

2008

Elman, Colin *Support for Institutes and Research Groups on Qualitative and Multi-Method Research* (36 months \$103,386)

Kadera, Kelly *Journeys in World Politics: Supplement to A Mentoring Workshop for Junior Women Studying International Relations* (12 months \$15,708)

Krosnick, Jon *2008 Summer Institute in Political Psychology* (12 months \$59,258)

Scholz, John *Networks in Political Science Conference* (12 months \$34,500)

Crockett, Hasan *SGER: Exit Poll Research and the African American Voter in the 2008 General Election* (12 months \$69,235)

2009

Carmen, Ira *Illinois Biology and Politics Summer Institute* (12 months, \$45,829)

Hatemi, Peter *Training the Trainers: Genetics and Political Behavior* (12 months, \$49,830)

Krosnick, Jon *2009 Summer Institute in Political Psychology* (12 months \$68,265)

Maynard-Moody, Steven *Supplement to Support for Conferences and Mentoring Activities in Political Methodology* (12 months \$5,040)

Orey, Byron D. *SGER: Race and the 2000 Election* (12 months \$68,493)

Scholz, John *Political Networks: Conferences and Infrastructure Development* (36 months \$178,236)

Schwartz-Shea, Peregrine *NSF Workshop on Interpretive Methodologies in Political Science* (12 months, \$43,707)

Wilkerson, John *Workshop: Tools for Text: Annotation Methods for Political Science Research* (12 months, \$49,281)

B.3 OUTCOME GOAL for Research Infrastructure: “Build the nation’s research capability through critical investments in advanced instrumentation, facilities, cyberinfrastructure and experimental tools.”

Comments:

The Political Science Program has made a large investment in infrastructure to meet the continuing and growing demands of social scientists. It has also succeeded in ensuring that the projects it funds serve a variety of publics in the scientific, policy, and educational communities. The data collected is not only made available, it is made usable. It is not only analyzed to further scientific knowledge but also applied to a variety of problems and questions of significance to contemporary society.

We also wish to note how well the panels and the program directors have continuously give these infrastructure projects their attentions and worked with project directors to improve them and make them as cost-effective as possible.

ANES

The American National Election Studies (ANES) forms the backbone of Political Science infrastructure. It provides the longest-running time series of data on voting in the world’s leading democracy. Continued support for this project is vital to the discipline and to our understanding of participatory governance. It is the model for similar surveys in countries around the world. It contributes to the reputation of the United States as a strong and transparent democracy.

To alleviate some of the budgetary demands of the ANES on the Political Science program, we recommend that the program directors and PIs begin to search for more stable partnership funding opportunities. Some rebranding of the ANES would help generate those opportunities. For example, a move toward emphasizing core societal concerns such as citizenship and participation, as opposed to the seemingly more pragmatic issue of an election, would appeal to other NSF programs. Political scientists are certainly not alone in their study of relevant topics such as trust, social capital, economic voting, how citizens become informed, campaign efficacy, the well-being of veterans, and the like. Rebranding along these lines would not require a revision of the questions themselves. In fact, the ANES has been used in numerous studies published in the leading journals in psychology and sociology.

Another kind of rebranding may require some changes to the question base. One potential partner might be NIH. In that case, some of the questions on the ANES may actually be suitable as they are, but some additional questions might also need to be incorporated to better address the health consequences of social and political values and behaviors.

Alternatively, the ANES might find a way to radically reduce its costs. The recent workshop led by Lynn Vavreck and the internet-based instrument that will parallel the face-to-face interviews are useful steps in this direction. We caution that the trade-off to cost reduction is potentially serious in terms of the quality and validity of the survey but expect the PIs to think innovatively about both how to overcome this problem and what unique substantive benefits might be earned by using the internet as a delivery device.

The UNF Project

James Alt and Gary King's project designs a computer algorithm that assigns a unique identifier (the "Universal Numeric Fingerprint") for each version of any numeric dataset. In effect, this functions as a bar code for a dataset, allowing researchers to readily identify which version of a dataset is tied to particular findings and, as a consequence, trace any substantial shifts in findings to changes in the dataset itself. Such technology is useful, of course, to scholars and scientists in virtually any discipline.

TESS

Like the 2007 COV, we are favorably impressed by the Time-sharing Experiments for Social Scientists. Professors Freese and Visser administer an internet-based survey instrument that other scholars compete to use. There are some exciting research projects underway on a variety of meaningful topics in diverse disciplines (e.g., perceptions of obesity and their connection to health policy, and parents' willingness to financially support pregnant children). TESS truly provides strong infrastructure across the social sciences generally.

Datasets in International Politics

The updating and extension of one dataset essential to our understanding of political violence, the Militarized Interstate Dispute project, is currently being funded (Palmer). Another funded collection effort, the Threats and Impositions of Economic Sanctions (TIES) project, considers the success rates of a key foreign policy tool. The Political Science program has also historically supported EuGene, an online warehouse that makes various datasets on international politics readily accessible.

CSES

The Comparative Study of Electoral Systems project (Burns) is a systematic collection of data on voting, political participation, and public opinion. Notably, it provides comparable instruments for 60 countries, allowing scholars to comprehensively examine important issues such as the variation of citizens' beliefs and trust in government under different institutional settings. It is one of the many important by-products of the ANES.

Many additional projects in political science have produced significant archival data and/or major web sites. These have proved to be invaluable resources for students, advanced scholars, interested laypeople, and others needing the information produced.

PART C. OTHER TOPICS

C.1. Please comment on any program areas in need of improvement or gaps (if any) within program areas.

Political Science has undergone a revolution in its use and development of methodological tools in recent years. The revitalization and increased rigor of qualitative methods as well as the flourishing of quantitative methods has led to higher quality work and more demands for workforce training. These methodological trends have been accompanied by the explosion of new and better data. In addition, more Public Policy Programs have been transformed into social science centers and that trend will continue. These factors all lead to increased demands on the NSF Political Science Program. We would urge an additional rotating or shared Program Director due to the critical juncture of the discipline.

We do not make this recommendation lightly, given the stretched resources facing NSF. However, from our perspective, the Political Science Program is not only meeting the primary outcome goals of NSF but doing so at an extraordinary level. It contributes to discovery within the discipline but far more broadly, it creates links with other fields to produce multidisciplinary and interdisciplinary undertakings with major implications for the well-being of society and its political, economic and social development. And it does this while broadening participation at every dimension---and without even a minor sacrifice of quality.

The Program's training projects are models of how to improve the skills of the workforce and ensure that Americans are competitive—indeed at the cutting edge—of technological change and innovative capacity. Its contribution to the infrastructure of science is built on maintaining enduring projects, such as the ANES, and constantly innovating to meet the demands of an ever-changing world.

C.2. Please provide comments as appropriate on the program's performance in meeting program-specific goals and objectives that are not covered by the above questions.

C.3. Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

First, we would like to see more explicit explanations and instructions to reviewers regarding Broader Impacts. This was raised in the 2007 COV Report to Political Science. We concur with them and second their specific recommendations, which were:

Better instructions to reviewers, more consistency between the instructions in the letters soliciting reviews and the instructions reviewers encounter in Fastlane might help. We were provided with a copy of the letter sent to potential reviewers. The second paragraph begins as follows:

The two Merit Review Criteria used are: (1) What is the intellectual merit of the proposed activity? And (2) What are the broader impacts of the proposed activity? Please provide detailed comments on the quality of this proposal with respect to each of the two NSF Merit Review Criteria, noting specifically that proposal's strengths and weaknesses.

A more informative version of these same instructions might be:

The two Merit Review Criteria used are: (1) What is the intellectual merit of the proposed activity? And (2) What are the broader impacts of the proposed activity? We ask that you address each of these criteria in the separate fields that you will find in our online proposal system FastLane.

Examples of considerations relevant to evaluating intellectual merit include:

- *How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?*
- *How well-qualified is the proposer (individual or team) to conduct the project? (If appropriate, comment on the quality of prior work.)*
- *To what extent does the proposed activity suggest and explore creative and original concepts?*
- *How well-conceived and organized is the proposed activity? Is there sufficient access to the necessary resources?*

Examples of considerations relevant to evaluating broader impacts include:

- *How well does the activity advance discovery and understanding while promoting teaching, training, and learning?*
- *How well does the proposed activity broaden the participation of underrepresented groups (such as gender, ethnicity, disability, geography)?*
- *To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships?*
- *Will the results be disseminated broadly to enhance scientific and technological understanding?*
- *What may be the benefits of the proposed activity to society?*

The bullet points in this suggested language come from FastLane's online help (which most reviewers do not ever access because FastLane is relatively easy to use.) We think that most reviewers write their reviews with a word processor before logging on to FastLane, and even experienced reviewers maybe forget that the two criteria are supposed to be discussed separately.

Second, although the program directors are sensitive to the challenges of multidisciplinary work (e.g., in the TESS review analysis, they noted that the panelists' objections were primarily discipline-based), the jacket-based evidence suggests that there continue to be turf wars as well as difficulties for good projects that fall between the disciplinary cracks.

C.4. Please provide comments on any other issues the COV feels are relevant.

C.5. NSF would appreciate your comments on how to improve the COV review process, format and report template.

PROGRAM SPECIFIC QUESTIONS

C.6. At what point do the continuing educational investments made by the Political Science Program (e.g., SIPP, EITM, Bunche, Training the Trainers, Qualitative Methods) become self-sustaining? What criteria should the program use to establish that a project no longer requires or deserves funding from the Foundation? If such projects continue to receive funding, what criteria should the Program use to weigh tradeoffs among such programs and between their continuing needs and the merits of new, smaller investments?

The continuing evaluation of these programs has led to the improvement in curriculum and outreach, particularly in EITM and Qualitative Methods within the last few years and over the last two decades in Quantitative Methods. In the cases of all educational investments and training programs, there are two bases for reducing or even discontinuing report: success in achieving alternative funding; and success (or failure) in achieving its ends.

To the extent possible, programs should be encouraged to get fees from universities and colleges whose students and faculty are participating. In some cases, foundation or corporate funding are options. For example, Coke supported the Bunche Institute for many years.

Substantive decisions about whether to continue funding require explicit outcome goals and measures for each specific project and for comparing across projects. These should be required in all future proposals. In some instances, for example, departments may be absorbing the kinds of training offered, making the NSF-funded projects redundant. The ending of program should be considered a sign of success rather than failure.

Given limited resources, the program should fund only those educational projects which clearly serve the larger objectives of the NSF particularly in terms of under-served and underrepresented populations and in terms of ensuring students get the most advanced training. Cost-effectiveness is also an important criteria, particularly in weighing educational programs against each other and in terms of the overall budgetary allocation of the program. This would include a discussion of the innovativeness and transformative nature of the training or conference. Moreover, most educational projects should probably have sunshine clause.

What this suggests to us is that the program should consider a different way of evaluating educational projects, perhaps by creating a separate panel or sub-panel that focuses on them. Comparative statics and evaluations would be highlighted rather than the typical panel review of whether that proposal is a good one.

C.7. In light of the current job market and changes within the profession, what would be the advantages and challenges of introducing a new Political Science competition for Post-Doctoral Fellowships? What tradeoffs should be weighed, and how? For the purposes of addressing the question, assume that the Program would be able to award five to ten fellowships annually, and that each would involve \$70,000 compensation directly to the PI, with a total cost of at least \$100,000.

This is an exciting idea. We are, however, concerned that a post-doc competition will overwhelm the already over-worked program directors unless it is linked to existing projects, which raises the additional concern of rewarding those already well-rewarded. We also worry that the expense of the post-doc program may not be worth the trade-off against additional research grants. On the other hand, given the current job market, the number of projects and researchers who could benefit from a post-doc, and the potential quality of mentoring, we see some real advantages of such an initiative.

We advise the program directors to hold a meeting devoted to considering the pros and cons and devising an appropriate strategy.

C.8. What would be the advantages and challenges of introducing Mid-Career Research Fellowships for retraining, akin to the Mid-Career awards available through the Measurement, Methodology, and Statistics (MMS) program?

The MMS Mid-Career Program is a strong program that allows social scientists to receive methodological training and statisticians to received training in the social sciences. This program appears quite flexible and extremely valuable. We understand that a Political Science Mid-Career award would be for retraining in an additional substantive area in or outside of political science. We do not think this is the best use of limited political science funds. The advantages include a political scientist receiving substantive training outside of his or her current area. Methods training, writ large is already available. The Political Science Program at NSF is strong in the area of training and education. A mid-career grant is expensive and in a zero sum game, we do not think this is the area to be investing in.

SIGNATURE BLOCK:

Janet Box-Steffensmeier, Chair
Margaret Levi
Kelly Kadera

For the Political Science COV

Science, Technology, and Society

**FY 2010 REPORT FOR
NSF COMMITTEES OF VISITORS (COVs)**

Date of COV: September 22-24 2010
Program/Cluster/Section: Science, Technology, and Society / Methodology, Measurement, Science, Technology, and Society Cluster
Division: Social and Economic Sciences
Directorate: Social, Behavioral and Economic Sciences
Number of actions reviewed: Awards: 40 projects Declinations: 40 projects Other: 0
Total number of actions within Program/Cluster/Division during period under review: Awards: 273 projects Declinations: 579 projects Other: 166
Manner in which reviewed actions were selected: Only competitive proposals were considered. Continuous grants and supplements were not considered. 10 awards and 10 declines from each of the three fiscal years (60 actions total) were randomly selected and provided to the COV members for review. COV members were permitted to request additional proposals.

PART A. INTEGRITY AND EFFICIENCY OF THE PROGRAM'S PROCESSES AND MANAGEMENT

Briefly discuss and provide comments for *each* relevant aspect of the program's review process and management. Comments should be based on a review of proposal actions (awards, declinations, and withdrawals) that were *completed within the past three fiscal years*. Provide comments for *each* program being reviewed and for those questions that are relevant to the program under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

A.1 Questions about the quality and effectiveness of the program's use of merit review process.

Provide comments in the space below the question. Discuss areas of concern in the space provided.

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE⁵⁵
<p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>Comments:</p> <p>The review methods for general projects and dissertation research up to 2008 consist of ad hoc reviews (4-6 solicited, 2-6 received), panelist reviews (2), and panel discussion after reading the reviews. The methods are appropriate for STS.</p> <p>Since 2009 dissertation proposals have not been sent out for ad hoc review. Three panelists review each proposal. So far, the method seems to be working well but it should be monitored through several grant cycles. We are concerned that because of the limited size of panels, some dissertation proposals will not be reviewed by an expert in that field, reducing the quality of the feedback that graduate students get at this crucial point in their education. It does, however, take a burden off of the community of reviewers, as well as the program officers.</p>	<p>Yes</p>
<p>2. Are both merit review criteria addressed</p> <p>a) In individual reviews? Most of the individual reviews address both merit criteria—73% by filling out the appropriate fields on the review form and an additional approx 17% by addressing the criteria in other questions on the review form.</p> <p>b) In panel summaries? Panel summaries always addressed both merit review criteria</p> <p>c) In Program Officer review analyses? Program officers always addressed both merit criteria</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p>

⁵⁵ If “Not Applicable” please explain why in the “Comments” section.

<p>Comments: Both merit criteria were addressed in the review process throughout.</p>	
<p>3. Do the individual reviewers provide substantive comments to explain their assessment of the proposals?</p> <p>Comments: With few exceptions, substantive comments were provided in the proposal reviews.</p>	Yes
<p>4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)?</p> <p>Comments: Yes, when taken together with the ad-hoc and panel reviewers</p>	Yes
<p>5. Does the documentation in the jacket provide the rationale for the award/decline decision?</p> <p>(Note: Documentation in jacket usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), program officer review analysis, and staff diary notes.)</p> <p>During FY 2009, NSF permitted reversal of a declined decision for funding through ARRA for proposals declined after October 1, 2008. (NOTE: This question does not apply to programs for which the reversal decline option was not used.)</p> <p>i) Were the reversals of the decision to decline based on both the high quality* of the reviews received on the initial submission and the lack of available funding at the time the origin was made?</p> <p>*Rated "Very Good or above" or the functional equivalent by review panels.</p> <p>ii) Is documentation provided, including a revised Review Analysis, to support the award decisions?</p> <p>Comments: Two declines were reversed. Both met the criteria.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p>

<p>6. Does the documentation to PI provide the rationale for the award/decline decision?</p> <p>(Note: Documentation to PI usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), and, if not otherwise provided in the panel summary, an explanation from the program officer (written or telephoned with diary note in jacket) of the basis for a declination.)</p> <p>Comments: Yes, the rationale was provided.</p>	<p>Yes</p>
<p>7. Is the time to decision appropriate?</p> <p>Note: Time to Decision --NSF Annual Performance Goal: For 70 percent of proposals, inform applicants about funding decisions within six months of proposal receipt or deadline or target date, whichever is later. The date of Division Director concurrence is used in determining the time to decision. Once the Division Director concurs, applicants may be informed that their proposals have been declined or recommended for funding. The NSF-wide goal of 70 percent recognizes that the time to decision is appropriately greater than six months for some programs or some individual proposals.</p> <p>Comments: The time-to-decision record of the program greatly exceeds the NSF Performance Goal. Although the number of proposals has increased (from 281 in 2007 to 312 in 2008 to 327 in 2009 the percentage processed within six months has gone from 91% to 97% to 98%. In 2009 all proposals were processed within 9 months. (There is probably little room for improvement, since co-reviewing and new initiatives are not under Program control.)</p>	<p>Yes</p>

8. Additional Comments

- a) **Additional comments on the quality and effectiveness of the program’s use of merit review process.**

The STS community continues to take the review process seriously by not only evaluating proposals but also providing detailed feedback to assist investigators. The panel works similarly. PIs receive constructive criticism.

- b) **To what extent does the documentation in the jacket or otherwise available provide the rationale for use of ARRA funding?**

Thoroughly documented

A.2 Questions concerning the selection of reviewers. Provide comments in the space below the question. Discuss areas of concern in the space provided.

SELECTION OF REVIEWERS	YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE <small>56</small>
<p>1. Did the program make use of reviewers having appropriate expertise and/or qualifications?</p> <p>Comments:</p> <p>Reviewers – Yes. For each general proposal, ad hoc reviews are requested from 4-6 reviewers, and 2 reviews from panelists. On average there are 5.56 reviews for each proposal submitted between 2007 and 2009. Until 2009, the same process was used for DDRIG submissions. In 2009, each DDRIG submission received three reviews by panelists, reducing the number and breadth of reviews for each DDRIG. This approach was in response to suggestions about panel composition and structure from the 2007 COV. We concluded that reviewers were selected with care for their particular expertise and broad interests, and many were international.</p> <p>Panelists – Yes. There were 44 panelists from a broad range of fields of expertise and from different types of institutions. Staggered terms of three years provides continuity on the panels, the mix of established leaders with promising assistant and associate professors builds future capacity. They represent an impressive range of fields, stages of career, and institutional home.</p> <p>To further improve the quality of the reviewing process, the program has formalized the practice of bringing panelists on for a 1-time “trial” before offering them a 3-year appointment. This ensures quality by making sure that the individuals have the appropriate expertise and judgment for serving on such an interdisciplinary endeavor. These tend to be more junior scholars, so the experience of seeing how NSF operates is useful for their professional development and for developing capacity of the reviewer community.</p>	

⁵⁶ If “Not Applicable” please explain why in the “Comments” section.

<p>2. Did the program use reviewers balanced with respect to characteristics such as geography, type of institution, and underrepresented groups?</p> <p>Note: Demographic data is self reported, with only about 25% of reviewers reporting this information.</p> <p>Comments: Because demographic data are self-reported, and only about 25% of reviewers reported this, there are not enough data to be meaningful re: race/ethnicity, gender, and type of institution.</p>	
<p>3. Did the program recognize and resolve conflicts of interest when appropriate?</p> <p>Comments: At every stage of the process the program recognized and resolved conflicts of interest: in selecting reviewers, receiving reviews, assigning proposals to panelists, during the review meetings, and in assigning a program director to review the panel’s summary.</p>	
<p>4. Additional comments on reviewer selection:</p> <p>Beginning in FY 2009, dissertation grants have been reviewed by 3 panelists and not sent out for ad hoc review. The results should be monitored (see A1.1)</p>	

A.3 Questions concerning the resulting portfolio of awards under review. Provide comments in the space below the question. Discuss areas of concern in the space provided.

<p>RESULTING PORTFOLIO OF AWARDS</p>	<p>APPROPRIATE, NOT APPROPRIATE⁵⁷, OR DATA NOT AVAILABLE</p>
<p>1. Overall quality of the research and/or education projects supported by</p>	

⁵⁷ If “Not Appropriate” please explain why in the “Comments” section.

<p>the program.</p> <p>Comments: The committee is impressed by the continuing high quality of the proposals and projects supported by the STS program. The programs received 876 proposals during the period 2007-2009 and made 257 awards; an additional 16 proposals were supported with ARRA funds. These totals included 86 dissertation improvement projects (122 declinations) and 171 other grants (457 declinations). The average success rate across all three years was 41.9% for dissertations and 28.82% for all other categories of support. The former is expected to be higher, while the latter matches the Foundation’s average of 27.79% for this three-year period. There should be no doubt that this is a competitive program.</p> <p>Additionally, the average review scores, using a scale of 1-5 across the categories of Poor to Excellent, suggests that the proposals supported are rated significantly higher by reviewers and panelists than those not funded – 4.2 for awards vs. 3.02 for those not awarded. (NOTE: Mean review scores must be considered approximations because split scores as allowed in Fastlane are not recognized by the NSF’s EIS system.) This difference strongly suggests that many awards received E ratings – and an examination of the sample proposals confirms this conclusion.</p> <p>A final indication of the quality of the awards is found in the exciting topics supported within the past three years. Simply browsing the list of titles of submitted proposals provides evidence of the quality of scholarship in this broad area of academia.</p>	<p>APPROPRIATE</p>
<p>2. Does the program portfolio promote the integration of research and education?</p> <p>Comments: One approach to this question is gained from examining the extent to which awards included support for graduate and undergraduate students and postdoctoral associates. And for FY 2007-2009, STS supported 83 undergraduate students for one year, 182 graduate students and 16 post-docs. This count understates the true level of support, however, because graduate students receiving dissertation improvement grants are counted as co-PIs and not graduate students. Thus a significant level of funding and support is directed toward educational activities.</p> <p>Another indication of integration could come from the number of CAREER awards, as these are specifically designed to foster such integration. But these awards are not a large component of the STS portfolio – only 3 CAREER</p>	<p>APPROPRIATE</p>

<p>awards were made, one through the ARRA opportunity. This outcome, however, is less from a lack of interest in integration than a relatively poor fit between CAREER and the STS academic disciplines.</p> <p>It is the committee's sense that the programs are supporting an appropriate level of efforts that integrate education and research, especially in terms of graduate education. Another factor that justifies this conclusion is the manner in which some of the digital tools and resources emerging from projects aid graduate students. For example, specific proposals supported course development, designed to yield an expansion of the academic programs leading to new majors. The digital HPS initiative, discussed in B3 also advances these goals. And the expansion of the knowledge supported by the program contributes to the educational program in key ways as well. Finally, the leadership of the STS program officers in the Ethics Education in Science and Engineering program (EASE) bespeaks a strong commitment to integration of education and research.</p>	
<p>3. Are awards appropriate in size and duration for the scope of the projects?</p> <p>Comments:</p> <p>According to patterns within the wider community of science, the relatively short duration and low price tag of many awards contrasts with the general tendency toward larger projects involving multiple PIs and institutions. Specifically, within STS 148 proposals were for 1 year or less and 157 awards received less than \$100,000. As significantly, only 9 awards had durations of more than 3 years and only 13 received more than \$400,000. These totals are somewhat misleading, since the dissertation projects, small and short by definition, accounted for a good number of the proposals in these categories. In addition, the program sets strict limits on budgetary expectations, leading many PIs to avoid proposing larger budgets. Thus it is difficult to know if the duration and funding are ideal. We can say that the program officers report a growing number of investigators seeking larger amounts of funding in order to pursue collaborative projects. Yet so far the fact that larger projects are receiving awards speaks to the flexibility of the program and its willingness to consider larger amounts when necessary. For the moment, this field remains one in which individual investigators apparently are dominant, making the funding and duration limits appropriate for such research styles. Indeed, in some fields, there is no reason to consider changing the duration and funding amounts. The trade-off equation remains that larger amounts mean fewer awards unless the budget for STS increases – which seems unlikely. Such an equation explains some of the reluctance to fund more CAREER awards. The previous COV in 2007 concluded that the levels and duration were appropriate, and we generally concur. We also repeat the admonition from</p>	<p>Appropriate</p>

<p>2007 to watch this situation closely. We believe the program should consider the funding necessary to accomplish the goals of the project. For many scholars and projects the current award standards and limits are less than satisfactory. Is this the pressure of the norms of “big science” or is this the pressure stemming from the requirements of the research project? The program should stay in touch with the community’s views on this issue. A starting point for this discussion could be the program’s practice in handling CAREER proposals.</p>	
<p>4. Does the overall program portfolio (including ARRA funded awards) have an appropriate balance of innovative/potentially transformative projects?</p> <p>The committee notes that the concept of innovative/transformative research might offer an opportunity for an interesting intellectual discussion within the STS community, precisely because it appears that good agreement does not exist about which proposals are transformative. The program operates with the definition supplied by the NSF, but it is difficult to operationalize that definition in concrete cases. The program officers ask panels to reach a conclusion about which projects are innovative and transformative, and ask the panelists not to apply the terms as a substitute for excellence, but reserve if for proposals that break new ground. But it remains unclear why some proposals are accepted as innovative and transformative and we could not discern a pattern. .</p> <p>The committee concluded that the answer to this question could be as simple as finding a pattern of variance in the reviews. Some program officers have looked for a indicator of transformative work as an indicator of innovative work, but our small sampling efforts did not find such a pattern. The committee concluded that the criteria used by the program officers and the panels are unclear. This suggests that an opportunity exists for the STS program to continue wrestling with this issue, which has relevance across the NSF.</p> <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of innovative/potentially transformative projects?</p> <p>Comments: The committee sees clear evidence that the STS program had a very suitable balance of work judged as transformative work in the ARRA funded portfolio. The documentation was very clear on this point.</p>	<p>Appropriate</p>
<p>5. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Inter- and Multi- disciplinary projects? 	

<p>The STS program easily demonstrates a strong balance of interdisciplinary activities. It is, after all, a multidisciplinary program by definition, and it has a range of activities that reach into other directorates. Finally, the program has a number of proposals with co-funding totaling \$1.5million. The entire portfolio, especially as demonstrated by Table 18 in the program narrative, makes the case this is a deeply interdisciplinary program.</p> <p>Comments:</p>	<p>Appropriate</p>
<p>6. Does the program portfolio have an appropriate balance considering, for example, award size, single and multiple investigator awards, or other characteristics as appropriate for the program?</p> <p>Comments:</p> <p>The committee concludes that the STS program exhibits an appropriate balance in all of these areas – single vs. multiple investigators, award size, and such. Table 19 in the program narrative shows that the number of proposals with single and multiple investigators has been equal for the last two years.</p> <p>There is one area the committee felt worthy of special comment– and that was how the program met the challenge of seeking to make awards in four main program areas and among a variety of different modes. It is clear that the program does not attempt to spread awards equally among all of the different modes of support, but carefully evaluates proposals on their merits. The number and amount of funding devoted to workshops, dissertations, post docs, RUI, and professional development seem appropriate. That the largest amounts are devoted to standard, collaborative and scholars awards seems correct as well.</p>	<p>Appropriate</p>
<p>7. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Awards to new investigators? <p>The balance here is quite appropriate. The differential between proposals with a new PI and those without is only about 4% -- much less than the differential in the Foundation as a whole. In addition, the dissertation improvement grants by definition include all new co-PIs, introducing beginning scholars to the mechanisms of NSF support and the experience of preparing proposals and receiving reviews and feedback.</p> <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of awards to new investigators?</p>	<p>Appropriate</p>

<p>The ARRA projects funded were clearly tilted toward the involvement of new PIs, with 8 of the 17 lead PIs being new (43%). Table 20 in the program narrative and Appendix 17 contain clear evidence of the attentiveness of the program to encouraging new investigators.</p> <p>NOTE: A new investigator is defined as an individual who has not served as the PI or co-PI on any award from NSF (with the exception of doctoral dissertation awards, graduate or postdoctoral fellowships, research planning grants, or conferences, symposia & workshop grants.)</p> <p>Comments:</p>	
<p>8. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Geographical distribution of Principal Investigators? <p>Comments:</p> <p>The committee believes an appropriate geographic distribution exists in the program’s awards. As the program narrative explains, the majority of proposals – and thus awards -- come from states with large research universities. The overall pattern correlates with the states producing the largest number of doctoral awards. Thus the 15 largest states secured the largest number of awards --and 15 states received no awards. Only two states submitted no proposals. (see Figure 21 in narrative, and Appendix 20)</p> <p>The EPSCOR results indicate that program funds proposals from these states at a lower rate, and that the rate is lower than the foundation average.</p>	<p>Appropriate</p>
<p>9. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Institutional types? <p>Comments:</p> <p>The balance between institutional types is appropriate. The program receives the majority of proposals from research universities, which is not surprising. But the list of submissions also includes a reasonable number of proposals from Ph.D., MS, and teaching institutions, as well as proposal from independent scholars. And figure 24 in the program narrative indicates that the success rate of teaching institutions is higher than the success rate in research universities.</p>	<p>Appropriate</p>

<p>10. Does the program portfolio have an appropriate balance:</p> <ul style="list-style-type: none"> • Across disciplines and sub disciplines of the activity? <p>Comments:</p> <p>The committee believes that an appropriate balance exists in the distribution of awards among the four areas identified in the program announcement. We note that the number of HPS awards has decreased over the three-year period, but the percentage of total awards has stayed roughly the same at 50% (Appendix 10, 11, 12). It appears that larger awards are being sought in HPS. There has been more volatility among the other three areas, and in the final analysis, HPS remains the largest element, with half of the awards, followed by STS, EVS, and Policy. EVS is not producing the volume of proposals that the program would like to see. There is no visible center for ethics scholars and scholarship, which makes outreach more complicated. At the same time the program would like to increase submissions given the importance of ethics in the foundation-wide strategic emphases of the next few years. The program is trying to create and foster a community, for example with online resources for ethics education and recent workshops and an incoming workshop the program initiated (Mamo/Fishman 2011). We endorse the program’s desire to give attention to EVS.</p> <p>We believe a clear message should be given to panelists and to the community regarding the appropriateness of medicine as a domain of science studies. We concur that clinical and epidemiological research cannot be funded. We note that dissertations in philosophy, sociology, anthropology, and history of medicine have been funded for some time. Given the low level of funding from the NIH and NLM in these fields we propose that the program consider adopting a similar strategy of including medical topics for all types of grant. We believe science studies needs to include the opportunity for scholars to study medical questions. In any case the primary point is that the program must communicate a clear message about this issue to reviewers and applicants. (See also additional discussion in C. 7).</p>	<p>Appropriate</p>
<p>11. Does the program portfolio have appropriate participation of underrepresented groups?</p> <p>Comments:</p> <p>The STS fields have not been attractive to underrepresented minorities. They are becoming more diverse from a gender perspective. The area of greatest diversity is female involvement in proposals, with almost 44% of submissions and more than 33% of awards. Women’s representation is higher in submissions than in awards. This pattern deserves monitoring in the future</p>	<p>Yes in terms of percentage in the academic community, no in terms of percentage desired.</p>

<p>even though the rate of awards to women is above NSF's funding for proposals with women's participation, which is 29%.</p> <p>Minority representation in STS is much lower for both submissions and awards and does not match NSF averages which are 10% of submissions with a 27% success funding rate. The number of proposals with participation by historically underrepresented groups was 49 out of the total of 876; the funding rate for these proposals was 21%. Only 15 proposals came from minority serving institutions, with 3 awards. This situation almost certainly stems from the usual location of STS activities within graduate education programs, since minority-serving institutions tend to emphasize undergraduate instruction.</p> <p>We would urge the program to renew efforts to work with the relevant professional societies to recruit and retain both students and faculty from historically underrepresented groups into STS. One additional strategy would be the development of workshops on topics in which the topics are likely to be of interest to a diverse range of scholars. For example, the planned workshop on genetics and genomics (environmental, reproductive, and genetic justice) can be extended to both extend scholarship and to attract diverse scholars.</p> <p>We also endorse the program's strategy of increasing diversity on the panels. In the short term, as more diverse people receive funding, it is good to involve them in the panel process, where they both learn the reviewing process and improve the reviewing process.</p>	
<p>12. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports.</p> <p>Comments: There is little doubt that the STS program contributes in numerous ways to wider national goals as well as to internal NSF missions. Indeed, STS is uniquely positioned because its expertise in the history, philosophy, and social scientific understanding of science, engineering and technology allows it to contribute to activities reaching across the Foundation. For example, STS contributes to the NNI through its administration of the Centers for Nanotechnology and Society; it is a key actor in the Ethics Education effort as it relates to the NSF's effort to comply with America COMPETES – indeed, the emphasis upon responsible conduct of research largely originated in the EVS group. Significantly, the rest of the foundation is recognizing the contribution that the STS group can contribute, as evidenced by the role of STS program officers in the development of Dear Colleague letters in BIO</p>	<p>Yes</p>

and MPS. And the range of co-reviews the STS program has engaged in gives real meaning to the implementation of genuinely cross-disciplinary activities at NSF.

The fit is also solid between NSF's stated strategic intentions: *Discovery, Learning, Research Infrastructure, and Stewardship*. The key point is that the STS community takes all of these strategic goals as the subject of their research. Therefore, the findings of STS research are of interest not only to this particular community of scholars, but to a wider audience of researchers across NSF and their various constituencies.

Finally, it remains a significant fact that the various disciplinary groups that fall under the STS umbrella are almost completely dependent upon the support of the STS program. There are some other avenues (ACLS, NEH) and additional programs for the humanities, but these programs also support much larger audiences and yet are modestly funded, providing support in different ways than NSF is able to assist the growth of the STS fields. History of technology and science, philosophy of science, and social studies of science really have nowhere else to turn for the type of support that enables these disciplines to continue to develop its scholarship and to educate the next generation of graduate students.

13. Additional comments on the quality of the projects or the balance of the portfolio:

ARRA Specific Comments: Additional comments regarding the portfolio of ARRA awards addressing the NSF or program-specific priorities for ARRA funding?

A.4 Management of the program under review. Please comment on:

1. Management of the program.

Comments:

Program officers and staff are very efficient and move the materials through the review process in a fashion that is admirable. They also have to manage a very wide set of disciplines united only by their attention to the study of science, technology and engineering. Selecting reviewers requires having a handle on an impressively large number of fields of scholarly interest and the individuals within those fields. The quality of reviews --and of decisions -- is very high. These same program

officers also are engaged at a high level in a number of activities across the foundation, and making important contributions to those initiatives.

At the same time, the program officers that have overseen STS for the past three years have managed a change in the structure of the panels and the organization of the program's budget in a smooth fashion. Following the suggestion offered by the last COV, they have made significant steps toward integrating activities that used to be treated in two completely separate panels and programs. They have made reasonable choices about the reviewing of dissertation improvement grants that reflect awareness of the time constraints upon the community and themselves. Further, the program officers are asking good questions about the balance between large and small awards, and about the level of funding they should direct to specific core activities. We believe they are approaching the issues of size and duration in an appropriate fashion, and also concur that the EVS area needs some additional attention.

In the end, they are carefully managing the program, its budget, and their most scarce resource --their time. Their use of the term "flexible" to describe their approach is entirely appropriate. Overall, we are impressed with the professionalism, commitment, and dedication of this group of program officers.

The committee notes that the program narrative asked us to consider a management question --should there be two permanent and one rotating program officers? This question will be treated in detail in Section C.

2. Responsiveness of the program to emerging research and education opportunities.

Comments:

The program narrative indicates clearly the program's interest in identifying and encouraging emergent research and educational opportunities – this is a long-standing commitment of the STS program. The program highlights this by placing emphasis on its need to be innovative. In addition, all of the activities targeted by the program for future emphasis reflect this commitment – ethics education, digital archives and documentation for the history and philosophy of science, attention to sustainability, and the inclusion of the psychology of science. To this list we would add the involvement of the program in the realm of the societal implications of nanotechnology. Several of these points are addressed more completely in section C, but the main point is that attention to emerging areas and educational opportunities is a central issue for the program. The best evidence of this commitment may be the continued priority given to the dissertation improvement program.

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio.

Comments:

We believe that the program's efforts to plan and prioritize are readily apparent in the program narrative. For example, the panel's decision to follow the last COV's suggestion of creating a permanent position led to re-arranging the panel structure itself, separating the dissertation proposals from the regular awards and then combining two panels into a single large panel. This approach then allows –indeed forces – an even more interdisciplinary perspective on the part of panelists. Moreover, the attention given to the fourth leg of the program -- policy in science engineering and technology – represents an important effort to continue to make the findings of STS scholars accessible to and significant for those who make policy choices, especially about science and technology. The inclusion of the policy area within the larger panel (instead of within two smaller panels) is a step that should open additional lines of communication among STS scholars.

More specific examples of attention to prioritization can be found in the areas targeted by the panel for future emphasis. These include the on-line ethics education activities, the development of digital HPS materials utilizing development in informatics, and attention to sustainability as a subject worthy of the program's special attention.

We also would highlight two other activities, one specific and one more general, as evidence of the program's efforts to prioritize its energy. One is the decision to bring psychology of science more closely under the STS umbrella. This effort is not new, as early work in this direction was launched by Michael Sokal during his terms as program director (1992-2000). Since then, however, a journal and a professional society have been founded, justifying renewing the program's interest in psychology of science. (See also C. 8)

The second instance is the program development workshop being planned to address such issues as genomics and genetics. This workshop seeks to establish the foundation for a broader base of scholarship related to ethics of science and technology. Their attention to environmental, genetic, and reproductive justice a solid way of defining not only new intellectual territory for the STS community, but also for engaging a more diverse community of scholars. The program solicited this proposal, an approach exactly in keeping with the NSF's long term strategy of working with the community to suggest new and exciting areas for work. In this case, the strategy also aligns activities within the STS program with the Foundation's own strategic goals.

In sum, these efforts at planning and prioritization reinforce the committee's sense of a strong team working to manage carefully the resources of the program in ways that allow it to move in new directions as the fields themselves change. The committee endorses these efforts being undertaken by the program.

4. Responsiveness of program to previous COV comments and recommendations.

Comments:

There is strong evidence that the program has been very responsive to the suggestions offered in the last COV. Indeed, the Foundation and SBE adopted the primary recommendation that the

program should hire a permanent program officer and two rotators, in order to provide greater continuity of support, better historical memory, and the capacity to contribute more completely to longer term, ongoing Foundation initiatives and activities. The program also has attempted to build upon the previous COV's conclusion that the Social Science of Science policy offered an opportunity for STS. Work in this vein is continuing, and the committee suggests there may be an important opportunity from connecting its Policy group more deeply with the Social Science of Science Policy group. Finally, the COV highlighted the area of environmental sustainability as an opportunity for the program, and they have continued to work in this direction – indeed, they have now emphasized sustainability as an area of priority moving into the future.

The NSF overall is only making a beginning in following through on the last COV's suggestions concerning IGERT-style training grants, and about using the STS program as a base from which deeper conversations might take place regarding the nature of transformative science. But the program itself seems to have taken to heart the suggestions and comments offered by the last COV in 2007.

5. Additional comments on program management:

PART B. RESULTS OF NSF INVESTMENTS

The NSF mission is to:

- promote the progress of science;
- advance national health, prosperity, and welfare; and
- secure the national defense.

To fulfill this mission, NSF has identified four strategic outcome goals: Discovery, Learning, Research Infrastructure, and Stewardship. The COV should look carefully at and comment on (1) noteworthy achievements based on NSF awards; (2) ways in which funded projects have collectively affected progress toward NSF's mission and strategic outcome goals; and (3) expectations for future performance based on the current set of awards.

NSF investments produce results that appear over time. Consequently, the COV review may include consideration of significant impacts and advances that have developed since the previous COV review and are demonstrably linked to NSF investments, regardless of when the investments were made.

To assist the COV, NSF staff will provide award "highlights" as well as information about the program and its award portfolio as it relates to the three outcome goals of Discovery, Learning, and Research Infrastructure. The COV is not asked to review accomplishments under Stewardship, as that goal is represented by several annual performance goals and measures that are monitored by internal working groups that report to NSF senior management.

B. Please provide comments on the activity as it relates to NSF’s Strategic Outcome Goals. Provide examples of outcomes (“highlights”) as appropriate. Examples should reference the NSF award number, the Principal Investigator(s) names, and their institutions.

B.1 OUTCOME GOAL for Discovery: “Foster research that will advance the frontier of knowledge, emphasizing areas of greatest opportunity and potential benefit and establishing the nation as a global leader in fundamental and transformational science and engineering.”

Comments:

In the past three years STS-funded projects have brought to scholarly and public attention topics that advance the frontier of knowledge and establish the nation as a global leader in science and engineering. Projects in the four areas in the program (HPS, EVS, SSS, and SPS) give evidence of a rigorous and lively system of recruitment and review, respect for multiple avenues of discovery, and the promise of a future cadre of excellent leaders in the science and engineering community. STS scholarship contributes a key component to knowledge construction in its reflexivity – not only to discovery of knowledge but to understanding epistemology and the social practices that produce discoveries in science and engineering. This includes historical as well as contemporary topics, and interdisciplinary as well as disciplinary foci. The program has supported doctoral dissertations, workshops, cross-disciplinary, collaborative, and individual projects. Results of the project are varied, and represent emergent as well as traditional forms of communication in science and engineering. Some examples follow:

The proposal of Rebecca Tsosie (Arizona State University) to convene a Workshop about the topic of genomics, governance and tribes (0724855) brought together an international group of scholars and scholar practitioners to participate in several recorded dialogues about the promise and perils of current efforts to transform indigenous people’s governance of genomic research. Questions included cultural harm and the legal system, biobanks, tribal-genetic research agreements, and indigenous research. The topic of the project, its scope of participants, and its engagement with different ways of knowing about genomics scholarship and policy, exemplify cutting edge research that links together genomic research and global governance. Its projected publication, based on the dialogues that occurred during the workshop, is an exciting departure from standard forms of communication.

Kenneth Fleischmann’s (Florida State University, 0646392) study of how the relationships among values, decision-making, and computational modeling among computer modelers explores how the models embody the values of the modelers. This study included field research (surveys, interviews, and focus groups) at three field sites (leading academic, corporate, and government research laboratories). Computational models are frequently used to develop new technologies and this study advances understanding of the different value trade-offs modelers make (for example between accuracy and accessibility to users). Understanding value trade-offs by modelers can help to clarify the factors shaping the development of models that in turn shape the development of products and systems, from engine designs and medical systems to climate change policies and financial regulations. In addition to its impact on basic understanding of relationships among values, decision-making and computational modeling, Fleischmann’s discovery has been published in a flagship

journal of computing professionals, helping them to be aware of the value-dimensions of their practices and in turn, incorporate this awareness into their model making.

In a collaborative grant, “Citizen Science and Sea Turtle Conservation,” Lisa Campbell (Duke University 0724608) and Matthew Godfrey (North Carolina Wildlife Resources Commission) examined the relationship between volunteers collecting data on sea turtles and the scientific and bureaucratic establishments at the North Carolina Sea Turtle Project to which they submit their data. This project builds on a long tradition of investigating relationships between citizens and scientists, and the effects of their collaborations: “how experiential knowledge of citizen-scientist volunteers interacts with scientific knowledge of state biologists, whether science is democratized through such collaborative projects and with what effects, and to what extent these volunteers are empowered and the impacts of such empowerment on broader attitudes towards science and the environment.” The multiple methods employed in this study yielded findings that illuminate how wildlife volunteers negotiate knowledge claims, particularly how they negotiate their experiential knowledge with the scientific literature, and how they position themselves in relation to state biologists. Importantly, the study shows how conservation practice is co-produced and volunteers show less resentment about the ways their data are treated by state biologists than has been found in previous studies of citizen-scientist collaborations.

Richard Keller, University of Wisconsin-Madison, “Heat and Death in France,” (0647266) proposed a project using a combination of methods to understand the heat wave that occurred in France in July and August 2003. During that period 14,802 people (on one reputable count) died. Keller was interested in how social factors influenced vulnerability. Leading to the fact that most of the victims were elderly. Keller’s research methods included intensive fieldwork and archival research, and allowed him to a broader understanding of the disaster, since he also investigated homeless people, the mentally ill, AIDS patients, and people coping with multiple addictions. As his study reported, “Their poor health status invariably predisposed them to heat stroke, but it was their social status that prevented their integration into the protective networks that enhanced resilience for many of those who were equally at risk.” Keller concluded that “Natural disasters remind scientists, politicians, and the public about the importance of social factors in determining vulnerability to environmental hazards.”

In addition, other projects that offer special insights about the process of innovation and discovery within science and engineering were funded by the program during the 2007-09 cycles. Two of these include:

Michael Riordan “The Decline and Fall of the Super Conductor Super Collider” (University of California, Santa Cruz, 0823296), co-funded with DOE.

Dan Kevles, “A History of Innovation and Ownership in Living Matter” (Yale University, 082688) .

B.2 OUTCOME GOAL for Learning: *“Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens.”*

Comments:

We are terrifically impressed with the new cross-disciplinary Ethics Education in Science and Engineering (EERE) Program, which Kelly Joyce of STS founded in 2007. This funds the development of resources for ethics education in science and engineering, especially at the graduate level. The funding includes two beta web sites ethics in science websites (at the University of Massachusetts Amherst and the National Academy of Engineering) as well as funding 5M towards an “Ethics of Science, Mathematics and Engineering Online Resource Center” at NSF. In order to help bring together the fragmented community in the area of ethics and science, EERE sponsored a workshop in 2008 on Ethics and Education and a PI meeting in 2009 for EERE grant recipients. Ethics training is a vital part of most awards with a training component (since the America COMPETES Act of 2007) and the program therefore provides a service to the entire NSF. The topics planned for the next proposal solicitation are cutting edge: ethics in international contexts, privacy and confidentiality of databases and institutional incentives. STS is the right program to help steer and co-ordinate this program, because it includes the “Ethics and Value Studies” field.

James Holbrook and Robert Holdeman’s workshop on clarifying NSF’s “Broader Impacts Criterion” (BIC) also yielded results that are important across the agency. The workshop’s own Broader Impacts included advising the NSF on how to improve attention to and clarify the meaning of the BIC. This is, in part, educational outreach.

Many awards have an educational component. The Dissertation awards, by definition, support graduate student training. The three CAREER awards all have an innovative teaching component, as required. From our perusal of the full list of funded grants, some notable educational projects are

Julie Dillemath, University of California at Santa Barbara, “Bringing Nanotechnology and Society Courses to California Community Colleges,” (0924646);

Carl Craver, Washington University, “The Future Directions in Genetic Studies Graduate Training Workshop,” (0824421);

and the postdoctoral project of Andrew Hamilton, Arizona State University, “History and Philosophy of Ecology” (0824475).

B.3 OUTCOME GOAL for Research Infrastructure: “*Build the nation’s research capability through critical investments in advanced instrumentation, facilities, cyberinfrastructure and experimental tools.*”

Comments:

A number of proposals supported by the program have developed the infrastructure that advances future learning and research. We wish to draw special attention to the effort of program director Fed Kronz to develop a digital HPS initiative. This began in 2008, when Kronz participated in the Woods Hole Informatics Summit, and grew into STS-funded exploratory proposals designed to accomplish three goals: (1) to develop common standards, practices and computational tools that enable novel modes of HPS research, (2) to support and coordinate smaller projects by providing a shared

infrastructure; and (3) to provide training in computational methods for HPS researchers. This initiative is now set to move toward a larger infrastructure effort, via a call for proposals, a move the committee sees as highly significant for the entire community.

Several other STS projects supporting and developing infrastructure are worthy of comment.

Richard Worthington of Pomona College, in “World Wide Views on Global Warming: Process and Impact,” (0925043) participated in a program organized by the Danish Board of Technology to secure citizen input about global warming on a global scale using the world wide web. The result, as explained by Worthington, is “an unprecedented empirical record for the analysis of deliberative democracy.” Further the results suggest the utility of such public participation as a useful public policy tool.

One of the longest running infrastructure projects supported by the program has been the Charles Darwin paper project directed by Fred Burkhardt through the American Council of Learned Societies (0646230). It is self-evident that Darwin is one of the seminal scientific figures of the modern era, and the effort to make available his corpus of letters and papers has been a significant project for the history of science community. As important, however is the fact that various programs in the biological sciences directorate have helped support this project which has now stretched over more than three decades.

A very important element of fundamental support provided by the program has come from an ongoing effort to enable graduate students in the STS community to attend international meetings in their fields. This effort began in the 1990s through the efforts of the four leading professional societies (HSS, SHOT, PSA, and 4S) and continues through the award to History of Science Society secretary Robert Malone, “Travel grants to attend the XXIII International Congress of History of Science and for ongoing U.S. participation in the IUHPS,” (0823272).

The program also funded two workshops that were designed to function as program development efforts, helping to lay out the ground rules and possibilities of new areas of emphasis within the STS program.

Clark Miller, Arizona State University, “Studies of Science, Technology & Sustainability: Building a Research Agenda,” (0841651); and

Daniel Sarewitz, Arizona State University, “Workshop for the Next Generation of Science and Technology Policy Leaders in May 2010,” (0949727).

A similar award supported James Groves, University of Virginia, “Transatlantic Exploratory Workshop on the Implications of Cutting-Edge Biotechnologies for Sustainability Science and Policy,” (0924354).

The program also has funded a project that will certainly contribute research and education tools for the STS community: Thomas Gerard, American Institute of Physics, “The American Postwar Physics Elite: An Internet Resource Pilot Project and Research Initiative,” (0823235).

Finally, the committee believes it is important to note the role of the program in managing the award to the two Centers for Nanotechnology and Society at Arizona State University and the University of California at Santa Barbara. These activities are especially significant because they represent the first really large investments in teams devoted to using STS methods, insights, and understandings to monitor and assist in the appropriate conduct of research in nanoscale science and engineering, as well as the development of those findings. The experience these centers afford STS scholars in operating a project in the fashion of “big science” is of great importance to the field. Among other things it will provide a training ground for scholars as well as a test bed for demonstrating the utility of STS approaches to studying the societal implications of emergent science and technology.

PART C. OTHER TOPICS

C.1. Please comment on any program areas in need of improvement or gaps (if any) within program areas.

C.2. Please provide comments as appropriate on the program’s performance in meeting program-specific goals and objectives that are not covered by the above questions.

C.3. Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

It would be helpful to program EIS to EITHER include split scores in calculations OR not permit reviewers to enter split scores.

We are concerned that the data on the involvement of historically underrepresented groups and women blurs together the large proposals in which there may be small minority participation and the leadership of minorities in smaller proposals. A more finely grained picture of the participation of underrepresented groups would emerge in which minority PIs would be measured as well as overall minority participation. From this perspective, STS might look better, given the number of individual investigator projects and awards compared to other divisions and programs.

Reviewers should be more forcefully prompted to provide demographic data, eliminating the inability to comment on these matters. The Foundation should not be hesitant to press reviewers for this information.

C.4. Please provide comments on any other issues the COV feels are relevant.

C.5. NSF would appreciate your comments on how to improve the COV review process, format and report template.

We found the eBinder a useful mechanism for making the information available. It would be worth exploring a mechanism for simplifying the compilation of the committee member’s written texts.

PROGRAM SPECIFIC QUESTIONS:

C.6. Given the very sizeable cross-program and cross-directorate engagement of STS program directors and the corresponding networking and institutional memory required for that, would the program run more effectively with two permanent program directors?

Two permanent program directors would make it possible to sustain the cross-directorate initiatives that depend on personal alliances. In particular, a second permanent program director in the area of EVS would provide an opportunity to build an ethics infrastructure at NSF that all programs and directorates can benefit from. At the same time, the continuation of a third rotator is essential for insuring the regular infusion of new idea and perspectives into the program.

C.7. NSF does not fund projects that solely aim to improve clinical care or contribute to disciplines such as public health because these fields are not covered at NSF. To signal this, the STS program solicitation notes, “Special restrictions apply to STS studies of medicine, public health, and society. Ordinarily STS does not consider proposals focused on historical, philosophical, ethical, or social aspects of medical, clinical bio-medical, or public health research or practice. Generally researchers should contact the National Institutes of Health and/or the National Endowment for the Humanities for support of research in these fields.” The Division of the Social and Economic Sciences’ other programs do not have a similar clause. For these programs, proposals must support basic research and education in the relevant field(s); the object of study is not limited to non-medical topics. Given this, do you have suggestions for how the STS program should handle the clause in the upcoming solicitation revision?

We recommend that STS clarify its position on medical topics, since there is considerable confusion among both applicants and panelists about how to interpret the clause. This is a matter of long-standing and is a product of decisions made and not made at both NSF and NIH. But jurisdictional issues need to give way and allow good scholarship to move forward in reflexive studies of medicine, broadly understood. **Our specific recommendation is to drop the clause entirely.** It should be clear from the general program announcement that general clinical and public health research is not part of STS. STS engages in reflexive studies of technoscientific knowledge, and medicine is an area of technoscience.

In fact, STS is lagging behind other programs at NSF in its exclusion of reflexive studies of medicine. This is exemplified by the Smart Health Committee a cross-foundation initiative that was put into place a year and a half ago. The initiative involves CISE, Engineering, Biology, and SBE directorates and is exploring the possibility of funding multidisciplinary projects to develop medical technologies and devices, medical communications systems and simulation models. Ironically one of the STS program officers (Joyce) is the SBE representative to the Committee.

Also see our longer discussion of this point in A.3.10

C.8. Does the COV endorse our efforts to incorporate the Psychology of Science into STS as a new program area? Is our approach of looking both for evidence of a community forming and an

increase in proposal volume a good way to decide what new areas we should add to our panel expertise? If not, what other considerations should come into play when deciding whether a new area should be added?

The committee concurs with the sense that the psychology of science is an appropriate area for STS interest and funding. Indeed, given intellectual currents in some communities within STS, the conversation about the place of the psychology of science could be extremely interesting. But we also should note that this question is not new. For perhaps 15 years or more, there has been intermittent support by the program. The International Society for the Psychology of Science and Technology was founded in 2006 and the field is growing, with a new journal and regular biennial conferences. Looking for such evidence of community such as new graduate programs, stellar scholars and scholarship and transformative and novel approaches is a good way of deciding how to add panel expertise and where to target outreach efforts.

We concur with the program in its estimation of the way to proceed in considering how and when new areas should be included within the panel's expertise. Another example for expanding representation on the panel is the new Society of Philosophy of Science in Practice, which meets biennially and does more applied work than the more theoretical Philosophy of Science Association.

SIGNATURE BLOCK:

Susan Bell
Bruce E. Seely
Miriam Solomon

For the Science and Technology Studies Committee of Visitors
Bruce E. Seely
Chair

Sociology

**FY 2010 REPORT FOR
NSF COMMITTEES OF VISITORS (COVs)**

Date of COV: September 22-24, 2010
Program/Cluster/Section: Sociology/Social and Political Sciences Cluster
Division: Social and Economic Sciences
Directorate: Social, Behavioral and Economic Sciences
Number of actions reviewed: Awards: 50 projects Declinations: 30 projects Other: 0
Total number of actions within Program/Cluster/Division during period under review: Awards: 231 projects Declinations: 617 projects Other: 96
Manner in which reviewed actions were selected: Only competitive proposals were selected for review. Continuous grants, supplements and other proposals, such as those that were withdrawn, were not considered. Additionally, proposals which were submitted to another solicitation, such as the Human and Social Dynamics, were not evaluated. A random sample of 10 awards and 10 declines for each year was selected for review. Of the 10, four dissertations and six regular projects were provided. Projects such as SGERs, EAGERs, RAPIDs, workshops or any others which underwent a unique review process were also provided.

PART A. INTEGRITY AND EFFICIENCY OF THE PROGRAM'S PROCESSES AND MANAGEMENT

Briefly discuss and provide comments for *each* relevant aspect of the program's review process and management. Comments should be based on a review of proposal actions (awards, declinations, and withdrawals) that were *completed within the past three fiscal years*. Provide comments for *each* program being reviewed and for those questions that are relevant to the program under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

A.1 Questions about the quality and effectiveness of the program's use of merit review process.

Provide comments in the space below the question. Discuss areas of concern in the space provided.

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE 58
<p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>Comments:</p> <p>Most regular proposals are assigned 2 panel reviewers and on average 2-3 ad hoc reviewers. Dissertation grants are reviewed only by the special panel members.</p>	<p>Yes</p>
<p>2. Are both merit review criteria addressed</p> <ul style="list-style-type: none"> a) In individual reviews? b) In panel summaries? c) In Program Officer review analyses? <p>Comments:</p> <p>Individual reviews and panel summaries typically give more attention to scientific contribution. Mention of broader impacts is given more emphasis in infrastructure projects. Review analyses by Program Officer are somewhat more balanced between the two criteria.</p>	<p>Yes</p>
<p>3. Do the individual reviewers provide substantive comments to explain their assessment of the proposals?</p> <p>Comments:</p> <p>This does vary. While most reviews provide excellent feedback and explicit explanations for why a proposal may be under developed, methodologically problematic, or literature reviews that are inadequate, some reviews are too broad. However, even where reviewer comments were thin in justification for the recommendation, the program officer’s feedback and justification for recommendation filled the gap.</p>	<p>Yes</p>

⁵⁸ If “Not Applicable” please explain why in the “Comments” section.

<p>Reviews of the largest infrastructure projects (e.g., GSS and IPUMS) are relatively brief, reflecting a consensus about their value, but few of these reviews provide critical commentary or suggested changes. Reviews of smaller projects are more likely to enter into details about theory, approach and method, which offer guidance for revision for rejected proposals.</p>	
<p>4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)?</p> <p>Comments:</p> <p>Panel summaries usually reflect the consensus of individual reviews, and offer grounds for the decision when reviews were inconsistent.</p>	<p>Yes</p>
<p>5. Does the documentation in the jacket provide the rationale for the award/decline decision?</p> <p>(Note: Documentation in jacket usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), program officer review analysis, and staff diary notes.)</p> <p>During FY 2009, NSF permitted reversal of a declined decision for funding through ARRA for proposals declined after October 1, 2008. (NOTE: This question does not apply to programs for which the reversal decline option was not used.)</p> <p>i) Were the reversals of the decision to decline based on both the high quality* of the reviews received on the initial submission and the lack of available funding at the time the origin was made?</p> <p>*Rated "Very Good or above" or the functional equivalent by review panels.</p> <p>ii) Is documentation provided, including a revised Review Analysis, to support the award decisions?</p> <p>Comments:</p> <p>The sociology program did not reverse previous decisions and did not support with ARRA any previously declined proposals.</p>	<p>Yes</p> <p>Not applicable</p>

<p>6. Does the documentation to PI provide the rationale for the award/decline decision?</p> <p>(Note: Documentation to PI usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), and, if not otherwise provided in the panel summary, an explanation from the program officer (written or telephoned with diary note in jacket) of the basis for a declination.)</p> <p>Comments:</p> <p>The sum of these provides excellent feedback to PIs.</p>	<p>Yes</p>
<p>7. Is the time to decision appropriate?</p> <p>Note: Time to Decision --NSF Annual Performance Goal: For 70 percent of proposals, inform applicants about funding decisions within six months of proposal receipt or deadline or target date, whichever is later. The date of Division Director concurrence is used in determining the time to decision. Once the Division Director concurs, applicants may be informed that their proposals have been declined or recommended for funding. The NSF-wide goal of 70 percent recognizes that the time to decision is appropriately greater than six months for some programs or some individual proposals.</p> <p>Comments:</p>	<p>Yes</p>
<p>8. Additional Comments</p> <p>a) Additional comments on the quality and effectiveness of the program’s use of merit review process.</p> <p>b) To what extent does the documentation in the jacket or otherwise available provide the rationale for use of ARRA funding?</p> <p>The review process provides a strong basis for award decisions. Panel summaries show that divergent opinions are carefully weighed. There is a high degree of consistency between panel summaries and Program Officer recommendations.</p> <p>In some cases involving large multi-year projects, it is likely that much of the discussion and evaluation process has occurred prior to the final proposal submission, through meetings of their advisory boards or special panels convened by the Program. This activity is not fully reflected in the reviews.</p>	

The Sociology Program has provided a clear rationale for selection of projects for ARRA funding, including a high priority for research that is relevant to the current economic downturn.

A.2 Questions concerning the selection of reviewers. Provide comments in the space below the question. Discuss areas of concern in the space provided.

SELECTION OF REVIEWERS	YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE <small>59</small>
<p>1. Did the program make use of reviewers having appropriate expertise and/or qualifications?</p> <p>Comments:</p> <p>In cases evaluated by the COV, reviewers had appropriate expertise, resulting generally in very good feedback with specific justifications for why proposals are recommended for funding or declined.</p>	Yes
<p>1. Did the program use reviewers balanced with respect to characteristics such as geography, type of institution, and underrepresented groups?</p> <p>Note: Demographic data is self reported, with only about 25% of reviewers reporting this information.</p> <p>Comments:</p> <p>Panel members and ad hoc reviewers reflect the gender composition of the likely pool of sociologists available to review proposals. We do not have adequate information on the underrepresented group characteristics of reviewers; 12 percent of panelists are from underrepresented groups which we believe is due to the Program’s active outreach. Under 40% of reviewers are from the top 100</p>	Yes

⁵⁹ If “Not Applicable” please explain why in the “Comments” section.

Research Intensive PhD institutions which also reflects Program outreach in identifying and recruiting reviewers.	
3. Did the program recognize and resolve conflicts of interest when appropriate? Comments:	Yes
4. Additional comments on reviewer selection: The average number of reviews obtained for each proposal over the COV period was above 5.5 (of whom on average 3+ are ad hoc reviewers). Ad hoc reviewers make a positive contribution, and their participation also enhances the community’s understanding of the review process. Program officers report that external reviews are valuable in cases where panels lack expertise in a particular area and provide useful additional information when panelists are divided or overly opinionated about a particular proposal. Yet the amount of time needed to identify ad hoc reviewers, solicit their input, and track their reviews might exceed their value added in many cases. The quality of panel-member reviews is high and recommendations are generally consistent with the recommendations of ad hoc reviewers. The Program uses panel-only reviews for dissertation proposals. In light of the workload challenges faced by Sociology program officers, we recommend that Sociology Program consider shifting to panel-only reviews of regular proposals or limiting the use of external reviews to those proposals in which panel expertise is lacking.	

A.3 Questions concerning the resulting portfolio of awards under review. Provide comments in the space below the question. Discuss areas of concern in the space provided.

RESULTING PORTFOLIO OF AWARDS	APPROPRIATE, NOT APPROPRIATE⁶⁰, OR DATA NOT AVAILABLE
1. Overall quality of the research and/or education projects supported by the program. Comments:	Yes

⁶⁰ If “Not Appropriate” please explain why in the “Comments” section.

<p>2. Does the program portfolio promote the integration of research and education?</p> <p>Comments:</p> <p>The Sociology Program integrates research with education. During the COV period each regular research proposal funded an average of 0.71 undergraduate students (note the marked increase from 2007-2009), 1.29 graduate students, but only 0.02 post-doc positions. Sociology also supports Doctoral Dissertation Improvement grants, Research in Undergraduate Institutions, and CAREER proposals.</p>	<p>Yes</p>
<p>3. Are awards appropriate in size and duration for the scope of the projects?</p> <p>Comments:</p>	<p>Yes</p>
<p>4. Does the overall program portfolio (including ARRA funded awards) have an appropriate balance of innovative/potentially transformative projects?</p> <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of innovative/potentially transformative projects?</p> <p>Comments:</p> <p>The median Sociology Program award is about \$150,000 over two years, providing limited faculty salary, student tuition and stipends, and modest other funding. Several ARRA and infrastructure projects funded at much larger levels are more innovative and/or transformative. They tend to integrate data from multiple sources and levels and many include a spatial component, and they apply cutting edge science to important current social and economic challenges. This underscores the link between funding and transformative potential. Sociology should continually monitor the balance between smaller and larger awards.</p>	<p>Yes</p> <p>Yes</p>
<p>5. Does the program portfolio have an appropriate balance of: Inter- and Multi- disciplinary projects?</p> <p>Comments:</p> <p>Sociology does a great deal of co-reviewing and co-funding of proposals with other programs. This expands the available funding for Sociology projects</p>	<p>Yes</p>

<p>and increases the extent of the program’s interdisciplinary engagement. Co-reviewing proposals assists in supporting projects submitted to other programs that have relevance to sociology. Co-reviewing proposals also increases Sociology Program’s opportunity to participate in cross-directorate programs and to fund larger-scale infrastructure projects by cost sharing with division funds.</p>	
<p>6. Does the program portfolio have an appropriate balance considering, for example, award size, single and multiple investigator awards, or other characteristics as appropriate for the program?</p> <p>Comments:</p> <p>Even with a limited budget, the program supports both large infrastructure projects as well as small regular proposals and very modest dissertation improvement grants. More than three-quarters of sociology program proposals involve multiple investigators.</p>	<p>Yes</p>
<p>7. Does the program portfolio have an appropriate balance of: Awards to new investigators?</p> <p>ARRA Specific Question: Does the ARRA funded portfolio have an appropriate balance of awards to new investigators?</p> <p>NOTE: A new investigator is defined as an individual who has not served as the PI or co-PI on any award from NSF (with the exception of doctoral dissertation awards, graduate or postdoctoral fellowships, research planning grants, or conferences, symposia and workshop grants.)</p> <p>Comments:</p>	<p>Yes</p> <p>Yes</p>
<p>8. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Geographical distribution of Principal Investigators? <p>Comments:</p>	<p>Yes</p>
<p>9. Does the program portfolio have an appropriate balance of: Institution types?</p> <p>Comments:</p> <p>The wide distribution of proposals among smaller and larger institutions</p>	<p>Yes</p>

<p>suggests that the Sociology program seeks to fund proposals from a range of institutions, not only research institutions or PhD granting institutions.</p>	
<p>10. Does the program portfolio have an appropriate balance: Across disciplines and sub disciplines of the activity?</p> <p>Comments:</p> <p>Sociology is a broad discipline with a variety of specialty areas. The program funds a diversity of research styles and topics and appears to be open to considering and funding proposals from researchers across the discipline.</p>	<p>Yes</p>
<p>11. Does the program portfolio have appropriate participation of underrepresented groups?</p> <p>Comments:</p> <p>The funding rate for awards involving women and underrepresented minority PIs and co-PIs are higher than other awards in Sociology, however, there is a decline in the funding for both groups in 2009, especially for projects with minority involvement.</p>	<p>Yes</p>
<p>12. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports.</p> <p>Comments:</p> <p>The National Science Foundation’s strategic plan, “Investing in America’s Future, FY 2006-2011” emphasizes several goals that can be seen reflected in the Sociology program’s funded projects:</p> <p>Building Science and Engineering Capacity: During the 3 year period of this COV, the Sociology program funded 164 undergraduate student research assistants, 297 graduate student research assistants, and five post-docs, as well as 130 Dissertation Improvement grants, and two CAREER grants. Workshops focused on strengthening qualitative research proposals were designed to improve the quality and quantity of research projects using qualitative research methods—a research strategy often used by student researchers—and thus had the potential to enhance social science research capacity.</p> <p>Another goal identified in NSF’s 2006-2011 strategic plan focuses on climate</p>	<p>Yes</p>

modeling. The Sociology program noted the limited involvement of the sociology research community in climate change research and funded a workshop proposal, “Sociological Perspectives on Global Climate Change” with the goal of identifying what contributions sociologists were making in the area of climate science and what topics constituted promising areas for future research.

A major goal of the National Science Foundation is to broaden participation in all funded activities. The Sociology program’s participation in this foundation-wide initiative has resulted in significant funding during the COV period and reflects the program’s commitment to this goal.

13. Additional comments on the quality of the projects or the balance of the portfolio:

ARRA Specific Comments: Additional comments regarding the portfolio of ARRA awards addressing the NSF or program-specific priorities for ARRA funding?

The federal ARRA program, a response to the economic crisis beginning in the last decade, afforded an opportunity to NSF to fund projects across programs. The Sociology program’s ARRA-funded projects were selected not only for their excellence, but also for their relevance to the challenges that generated the American Recovery and Reinvestment Act. For instance, the program funded several RAPID grants that examined the sociological aspects of the economic crisis that generated ARRA and a project on the impact of military service on health and well-being.

A.4 Management of the program under review. Please comment on:

1. Management of the program.

Comments:

The Sociology Program is well-managed and collaborates well with other programs through co-reviewing and cross-program cooperation. There is, however, an ongoing and longstanding problem with staffing in relation to workload. We quote from the 2007 COV report (that references the 2004 COV report—an indication of a perennial issues):

The **2004** COV noted the need for additional staff to carry the workload of the Sociology Program, and the addition of Kevin Gotham appears to have helped ease the excessive workload to some extent. Our observations and discussion with Program staff convinced us, nevertheless that there remains a need for additional staff to help carry the enormous workload of the Program. Furthermore, we are concerned that the workload problem in the Sociology Program could actually worsen, since the next incumbent of Kevin Gotham’s

position could be drawn into working extensively for other programs.

We are discouraged to report that the 2007 COV prediction has come true: Sociology program has lost its additional rotator, and the program now has only one permanent program officer and one rotator. The workload has not reduced, but the staffing has. This issue needs to be addressed.

Recommendation: The Sociology Program should be authorized to recruit a second rotator and/or a full-time science assistant.

2. Responsiveness of the program to emerging research and education opportunities.

Comments:

Sociology program officers have effectively publicized NSF priority areas (such as Human and Social Dynamics) and new funding opportunities (such as ARRA) and generated many proposals that have been funded by these initiatives which address important contemporary issues. Recent research by the American Sociological Association supports the wisdom of Sociology program investment in the future scientific workforce by showing that recipients of Sociology program dissertation improvement grants have a substantially greater likelihood of serving as external reviewers of NSF projects and receiving regular NSF grants as faculty.

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio.

Comments:

The program has taken the lead in identifying research priorities by funding workshops in areas such as qualitative methods, climate change, science policy, and ethics and morality. These workshops were designed to increase proposal submissions and quality and broaden participation by future PIs. Considerable effort has been invested in monitoring large-scale infrastructure projects to ensure that they realize their potential.

4. Responsiveness of program to previous COV comments and recommendations.

Comments:

Within the constraints of its ability to do so, the program responded to the 2007 COV recommendations; for example, by revising the letter to external reviewers to emphasize the importance of addressing the broader impacts criterion in reviews, by maintaining the current limits on use of grants funds, by funding the American Sociological Association's study of the career impacts of dissertation improvement grant funding.

5. Additional comments on program management:

The past two COV reports reference the increasing workload demands on Sociology program officers. These are the result of Foundation-wide changes in the number of cross-directorate initiatives, new sources of funding, increased proposal submissions, the emphasis on infrastructure and interdisciplinary projects. Changes in technology, in particular, electronic communications, have created a burden that is only beginning to be well-understood by researchers, but contributes to the expectations for speedy responses and increasing amounts of computer work that add to the stress of many workplaces, including NSF.

Recommendations:

A high priority needs to be placed on managing the Sociology program workload. We have several suggestions. Our first recommendation, listed above, that the Sociology program should:

1. be authorized to recruit a second rotator.
2. be assigned a full-time Science Assistant.
3. consider reducing the number of regular proposal competitions to one a year with a process for earlier review of proposals invited to revise and resubmit.
4. consider eliminating or reducing the number of external (ad hoc) reviewers for regular proposals.

The Sociology program's commitment to training the next generation of social scientists is evident in its funding of undergraduate and graduate research assistantships in regular proposal and its growing Dissertation Improvement grant program. The American Sociological Association's review of the positive career impacts on recipients of these grants described above, affirms the Sociology program's investment in graduate training.

Recommendations:

We recommend that the Sociology program continue:

1. bi-annual Dissertation Improvement competitions.
2. panel-only reviews of Dissertation Improvement proposals.
3. funding Dissertation Improvement grants according to the program's current guidelines.
4. providing guidance to prospective grantees about the design and development of fundable projects, for example the guidelines for strengthening qualitative research contained in the 2004 Sociology Program workshop report, "Scientific Foundations of Qualitative Research."

PART B. RESULTS OF NSF INVESTMENTS

The NSF mission is to:

- promote the progress of science;
- advance national health, prosperity, and welfare; and

- secure the national defense.

To fulfill this mission, NSF has identified four strategic outcome goals: Discovery, Learning, Research Infrastructure, and Stewardship. The COV should look carefully at and comment on (1) noteworthy achievements based on NSF awards; (2) ways in which funded projects have collectively affected progress toward NSF’s mission and strategic outcome goals; and (3) expectations for future performance based on the current set of awards.

NSF investments produce results that appear over time. Consequently, the COV review may include consideration of significant impacts and advances that have developed since the previous COV review and are demonstrably linked to NSF investments, regardless of when the investments were made.

To assist the COV, NSF staff will provide award “highlights” as well as information about the program and its award portfolio as it relates to the three outcome goals of Discovery, Learning, and Research Infrastructure. The COV is not asked to review accomplishments under Stewardship, as that goal is represented by several annual performance goals and measures that are monitored by internal working groups that report to NSF senior management.

B. Please provide comments on the activity as it relates to NSF’s Strategic Outcome Goals. Provide examples of outcomes (“highlights”) as appropriate. Examples should reference the NSF award number, the Principal Investigator(s) names, and their institutions.

B.1 OUTCOME GOAL for Discovery: “Foster research that will advance the frontier of knowledge, emphasizing areas of greatest opportunity and potential benefit and establishing the nation as a global leader in fundamental and transformational science and engineering.”

The National Science Foundation’s 2006-2011 strategic plan, *Investing in America’s Future*, identifies “Discovery” as one of four strategic outcome goals. In pursuit of the discovery goal of fostering research that advances the frontier of knowledge, NSF identifies five investment priorities:

- *Promote transformational, multidisciplinary research.*
- *Investigate the human and social dimensions of new knowledge and technology.*
- *Further U.S. economic competitiveness.*
- *Foster research that improves our ability to live sustainably on Earth.*
- *Advance fundamental research in computational science and engineering, and in fundamental, applied and interdisciplinary mathematics and statistics.*

The proposals funded by the Sociology Program contribute most directly to the first four of these NSF investment priorities.

Sociology Projects that Promote Transformational, Multidisciplinary Research

The Sociology Program works extensively with other NSF programs to co-review and co-fund proposals. Of the 431 proposals that the Sociology Program reviewed during the 2007-2009 period, 67 percent were co-reviewed with another program. Sociology was the Primary program for 174 (40%) of co-reviewed proposals and the Secondary program for 257 (60%) of co-reviewed proposals.

The Sociology Program also participates in foundation-wide priority areas and programs that are specifically interdisciplinary. Primary among these during the COV period was the Human and Social Dynamics priority area which required involvement of PIs from at least two different disciplines. Sociology managed seven interdisciplinary HSD projects during the COV period, including:

- 0624116 Dynamics of social networks Makse Hernan CUNY City College
- 0624134 Collaborative: DHB: Social Network Dynamics of Youth McFarland Daniel Stanford University
- 0624177 HSD: Collaborative Research: A Study in the Dynamics of Human Behavior in Institutional Innovation and Learning Saatchi Sassan U of Cal Los Angeles
- 0624230 Collaborative Research: Forced Migrants Living in Post-Conflict Situations: Social Networks and Livelihood Strategies Regulska Joanna Rutgers Univ New Brunswick
- 0624251 The Global Logistics Chain: A 21st Century Change Agent Rodgers William Rutgers Univ New Brunswick
- 0624278 Victims' Responses to Transitional Justice: A Comparative Study in West Africa Backer David College of William & Mary

Another cross-program and cross-agency initiative was “The Social Science of Disasters, Terrorism and Homeland Security,” an NSF and Department of Homeland Security collaboration. The Sociology Program co-funded six projects in this NSF-DHS program including:

- 0651996 Clark, McCauley Bryn Mawr College SGER: DHS and NSF Collaboration: Developing Polls to Test Theories of Radicalization and Potential for Radicalization
- 0651287 LaFee, Gary University of Maryland, College Park, SGER: DHS and NSF Collaboration: Creating an Archive of Preparedness and Homeland Security Survey Data

Identifying and funding transformational research is a goal in the decision to fund all Sociology Program projects. Some projects hold special promise for transforming the way we think about social issues and processes, for instance, high risk and experimental research proposals. The Sociology Program funded six SGER, four EAGER, and three RAPID research proposals. As the partial list below shows, these projects address emergent or timely issues, and have the capacity to shed light on relatively less understood social phenomena, for instance:

- 0940804 Beveridge Andrew CUNY Queens College RAPID: The Distribution and Social Impact of Mortgage Foreclosures in the United States
- 0744020 Nagel Joane U of Kansas Ctr for Res In SGER: Workshop: Sociological Perspectives on Global Climate Change
- 0956273 Tomaskovic-Devey Donald U of Massachusetts Amherst EAGER: Finance Sector Income Distribution Dynamics

The American Sociological Association’s “Fund for the Advancement of the Discipline” (FAD) is another Sociology program co-funded project with significant transformative potential. FAD small grants (\$7K maximum) support to projects that break new ground theoretically, empirically, or

methodologically. Since its initial funding in 2004, 90 FAD awards have been granted, many to new investigators (29% of PIs are within three years of receiving the PhD) and PIs from underrepresented groups (56% of PIs are women; data are not available for other underrepresented groups).

Among regular research awards some other projects with great transformative potential include:

0718527/0718635/0718526 Jensen, Leif (PSU), Slack, Timothy (LSU) and Tickameyer, Ann (OSU),. A National Survey of Informal Work (Collaborative): The proposal shifts paradigmatic assumptions about the nature of work in industrial societies—from the view that most work is formal to the empirical analysis of informal work in the United States.

06617980/0527631 Crenshaw, Edward, and Jenkins, Craig (OSU) Ideology and International Terrorism: Types of Terrorism and Their Structural Determinants (Collaborative) This proposal challenges the “clash of cultures” argument about the unique qualities of contemporary international by analyzing historical patterns.

0518870 Hao, Lingxin, Johns Hopkins University Intra-Generational Mobility and Social Inequality: Does Immigration Play a Role? This project explores the reshaping of U.S. racial/ethnic boundaries, by showing disparities in wealth among immigrants are large and growing, including disparities among immigrants of the same race and ethnicity.

Sociology Projects that Investigate the Human and Social Dimensions of New Knowledge and Technology

The Sociology Program funded a number of proposals that explored social networks, patterns and implications of the rise of the Internet, sociology of science and technology, and ethics:

0727502 Haveman, Heather U of Cal Berkeley The Media Industry and Community in America

0727360 Lee, Orville, New School Univ Doctoral Dissertation Research: A Sociological Analysis of the Production of Scientific Knowledge

0751977 Rosenfeld, Michael, Stanford University A Longitudinal Study of the Impact of Social Networks and the Internet on Relationship Formation

2009 0927291 Eisenberg Michael, U of Washington Doctoral Dissertation Research: Social Technologies, Social Groups, and Civic Engagement

0907496 Hitlin, Steven, University of Iowa Workshop: Understanding Morality: Developing Interdisciplinary Perspectives

0927836 Johnson, David, PA St U University Park Doctoral Dissertation Research: Social Norms and Industry Practices in Gamete Donation

Sociology Projects that Further U.S. Economic Competitiveness

The study of organizations, work, and the economy are central and enduring topics of sociological inquiry. The Sociology Program funded many proposals examining the operation of markets, the changing nature of work, and the social organization of the economy. These included:

0703310 Granovetter, Mark, Stanford University Doctoral Dissertation Research: The

Emergence of Cooperation in Competitive Economic Environments
0845537 Alexander Karl, Johns Hopkins University Finding their Way: The Developmental Work Trajectories of Non-College Youth
0926934 Dobbin, Frank, Harvard University Doctoral Dissertation Research: Shareholder Value and the New American Workplace: Investor-Driven Downsizing, 1980-2007
0648491 Tomaskovic-Devey, Donald, U of Massachusetts Amherst Equal Employment Opportunity Progress in Private Sector Workplaces since 1966
0941213 Kraemer, Kenneth, U of Cal Irvine RAPID: Offshoring in a Global Economic Crisis: Economic and Social Dynamics
0920980 Reynolds, Laura, Colorado State University Fair Trade and Socio-Economic Conditions in the Global Commodity Chain
0902784 Knoke, David, U of Minnesota-Twin Cities Doctoral Dissertation Research: A Study of the Innovation Process

Sociology Projects that Foster Research that Improves our Ability to Live Sustainably on Earth

Environmental sociology focuses on questions of sustainability, humans' relationships to the natural world, and the social dimensions of environmental change. The Sociology Program funded projects that explored all of these areas of environmental sociology and disaster research, including:

0819412 Jenkins J. Craig, Ohio State Univ Res Fdn Collaborative Research Project: Protecting the Environment: Does the Environmental Movement Matter?
0849823 Frickel, Scott, Washington State Univ Collaborative Research: Urban-Environmental Restructuring in the U.S.
0921942 Johnson, Erik, Washington State Univ A Database for the Sequencing of Environmental Movements
0719158 Kusenbach, Margarethe, U of South Florida Strengthening Qualitative Research through Methodological Innovation and Integration: Community Resources and Disaster Resilience
0753742 Weil, Frederick, La St U and A&M Coll The Contribution of Social Capital and Social Organization to Disaster Recovery

B.2 OUTCOME GOAL for Learning: “Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens.”

Comments:

The second NSF strategic outcome goal is “Learning.” The Sociology program investments in learning expand the scientific knowledge base for educators, school administrators, and the general public and provide new understanding of the nation’s educational system. These include regular research projects, ARRA, dissertation, and career awards which support the outcome goals for learning. Several mechanisms are used to promote science education. During the fiscal years 2007-2009, Sociology supported 164 undergraduate student positions, 297 graduate student positions and 5 post doctoral positions via regular proposals. This is important training for the next generation of

scholars entering the workforce, and it also contributes to the quality of sociological research. A sampling of funded projects is listed here, along with a brief review of ways in which they promote the outcome goal for learning:

Regular Awards

0617644 Donato, Katharine, and Marschall, Melissa, Vanderbilt University, Immigrant Parent Involvement in Schools, Communities and Politics

The researchers study immigrant parental involvement in schools and the extent to which it links to civic and political incorporation. The project merges knowledge, methodologies, and personnel across the disciplines of sociology, political science, demography, and public policy. The analysis draws on studies about immigrant civic and political engagement, parental involvement in schools, and institutional (school) attributes. It is well known that parental involvement in schools is key to student outcomes, but there appear to be obstacles to involvement by immigrant parents. The project results are made available to a broad audience, particularly policy makers and practitioners who typically do not read academic books and journal articles. This project provides important information and insights to teachers, principals and other school officials.

ARRA Awards

0940804 Beveridge, Andrew, CUNY Queens College. RAPID: The Distribution and Social Impact of Mortgage Foreclosures in the United States

This project will assemble locally specific information on foreclosures and defaults for the entire nation and examine which neighborhoods, communities, metropolitan areas, and states have been most affected by this crisis. It will also track changes in the impact of the crisis over time. Results will be made available through a web-based mapping system -- Social Explorer -- that is widely used by schools and universities. This public outreach will inform policy choices at every level of government, and also increase public awareness of the contribution that scientific analysis can make to understanding current economic and social problems.

Collaborative Research Awards

0921794 Salvatore, Saporito, College of William & Mary, Collaborative Research: School Attendance Boundary Information System (SABINS)

This project has two aspects that are directly relevant to NSF's outcome goal for learning. First, it will assemble information that is vital to understanding the sources of deep disparities in educational opportunities and outcomes by social class, race, and ethnicity. By offering a close linkage between data about neighborhood and community and information about school performance, it will allow analysis of the dynamic relationship between residential patterns and public education. Second, it includes a strong outreach component, providing these data via the project webpage in the form of both maps and tabular statistics, so that the information can be used by residents and public officials as they develop plans to improve education.

0750597 Hummer, Robert, University of Texas and Grant, Darlene, University of Southern California, SBES Alliance: Diversifying Graduate Education in the Social, Behavioral and Economic Sciences

This collaborative renewal project -- which includes proposals from the University of Texas at Austin, Stanford University, Texas A&M University, and the University of Southern California -- addresses the under representation of Hispanics, African Americans, and Native Americans in graduate programs in the Social, Behavioral, and Economic (SBE) sciences at these four institutions. The project will continue to increase the enrollment, retention, and successful completion of under-represented minority (URM) graduate students in the SBE Sciences at alliance institutions, with the long-term intent to increase representation among URM groups on university faculties in the SBE sciences. Two principles continue to guide efforts. Alliance partners: 1) share ideas, best practices, and resources, and create a network to recruit and retain students for alliance universities; and 2) build on successful initiatives that have already been developed on each of the campuses so that efforts can be as cost-effective and successful as possible. Highly collaborative and innovative methods are used to improve efforts in recruiting and retaining minority graduate students at the institutions. This project is one of several similar efforts taking place across the U.S. as part of a national strategy to diversify the racial/ethnic mix of faculty. The collaborative effort presents one model of how to do so within the SBE sciences and to educate school administrators on strategies that can be adopted at their institutions.

Dissertation Awards

0903080 Reardon, Sean and Bischoff, Kendra, Stanford University, Doctoral Dissertation Research: Voluntary Desegregation and Educational Outcomes.

The researchers argue that racial and ethnic disparities in academic achievement and social outcomes are persistent features of the U.S. educational landscape. One prominent legal and policy remedy for these disparities is school desegregation. In this research, the investigators exploit a random assignment of students to a desegregation program to answer the question, "Given the same family background, what is the effect on minority students of attending a more integrated, higher-achieving school?" The project uses three sources of data to assess the outcomes of interest: 1) School district administrative records to assess academic outcomes; 2) Student and parent surveys to assess social outcomes; and 3) In-depth parent and student interviews to test the mechanisms that connect school context to student outcomes. This research has implications for the educational opportunities for minority and low-income youth. Racial achievement gaps have proven to be stubborn, despite the sweeping changes in accountability procedures brought about by the No Child Left Behind legislation. By broadly disseminating the findings from this study to academics, policy makers, and school practitioners, findings could potentially inform school assignment decisions.

0727624 Campbell, Karen, and Katz, Sheila, Vanderbilt University, Doctoral Dissertation Research: Women Pursuing Higher Education After the 1996 Welfare Reform

The purpose of this study is to understand why some mothers still pursue education while on welfare as a route out of poverty although the opportunity for education decreased dramatically after welfare reform. The research questions this study will answer are (a) why do single mothers on TANF pursue

higher educational programs?; (b) what are their narratives for choosing the higher educational route?; and (c) do the narratives of single mothers involved in an advocacy organization differ from those who are not? The research informs the debate at the state level in California as well as in other states that are considering expanding education and job training programs. The research identifies and educates the public and policy makers about the state level policies and resources that help or impede low-income women's progress in education and job training programs and in the local labor markets.

B.3 OUTCOME GOAL for Research Infrastructure: “*Build the nation’s research capability through critical investments in advanced instrumentation, facilities, cyberinfrastructure and experimental tools.*”

Comments:

The third NSF strategic outcome goal is “Research Infrastructure.” The Sociology program investments in research infrastructure take several forms: funding large-scale data collections, facilitating access to data collections, and supporting new dataset collection and dissemination.

Large-Scale Data Collections

The General Social Survey. Tom Smith, Peter Marsden, Michael Hout, National Opinion Research Center. 824168. Co-supported by Economics, Geography & Spatial Social Science, Law and Social Science, Methodology, Measurement & Statistics, Political Science, Science & Society, the Divisions of Science Resources Statistics & Social and Economic Sciences. The GSS is a major infrastructure project that has been funded by Sociology Program for many years and national level on which many social scientists rely for information about trends in attitudes and behaviors. The recent renewal of GSS for 2009-2012 anticipates a total cost of \$15 million. The portion of this amount covered by the Sociology Program is approximately 25% of its budget. Innovations included in the new GSS award include establishing a national competition for inclusion of substantive modules in the questionnaire, inclusion of contextual information to support multilevel and spatial analysis, and introduction of a panel design for a portion of the sample. In contrast, this new project employs a spatially dispersed sampling design that will geocode data.

IPUMS- International. Steven Ruggles. Ragui A. Assaad, Deborah Levison, Robert McCaa and Matthew Sobek, University of Minnesota. 851414. Sociology is primary with co-support from the Division of Social and Economic Sciences, Economics, and Methodology, Measurement and Statistics. NSF support for this project has already yielded a vast international database, including harmonized microdata from 111 censuses of 35 countries between 1960 and 2005. The next project phase will add data from 2010 censuses in many countries, and also expand the geographic scope of older datasets. The project also sets a standard for the documentation that is essential to provide guidance to users on the meaning of census responses and their comparability across time and space, and for computing and software infrastructure.

Sociology also contributes to ongoing projects in which another program is primary:

- 0518943 Stafford, Frank, University of Michigan Panel Study of Income Dynamics. Jointly supported with Economics, the primary program
- 081927/0818839 Visher, Penny, and Dennis, John University of Chicago and Jeremy Freese, Northwestern University Time-Sharing Experiments for the Social Sciences (TESS) Cosupported with Political Science, the primary program.
- 0818366 Curtin, Richard, and Reynolds, Paul University of Michigan Panel Study of Entrepreneurial Dynamics. Cosupported with Innovation and Organizational Sciences, the primary program.

A new study supported through ARRA is the *School Attendance Boundary Information System (SABINS): Assembling Middle and High School Boundaries and Census Data for the U.S.*, Salvatore Saporito (William & Mary), 0921794; John R. Warren (University of Minnesota), 921279. Co-supported by Methodology, Measurements & Statistics. This project is based on geocoding the attendance boundaries of schools in a representative sample of school districts across the country. SABINS will be integrated with data from the 2010 US decennial Census, the American Community Survey, and the Common Core of Data to facilitate more accurate information and analyses. SABIN allows exploration of school-level dynamics on a geographic scale previously impossible, integrates the school-related information with the 2010 Census and the 2010 American Community Survey/ACS and Common Core of Data/CCD. It will enable researchers and school officials to examine, for the first time, how demographic and social inequality patterns are related to school-level, school-district, and larger community dynamics across the country and use digitized maps to facilitate the delivery of educational services and track student assignments.

Facilitating Access to Data Collections

The Sociology Program also invests in improving access of U.S. researchers to other longitudinal datasets and databases created by prior studies. These include grants of moderate size to:

- 649025 Gornick, Janet, CUNY, Graduate Center Luxembourg Income Study, Sociology primary with co-support from the Division of Social and Economic Sciences, Economics, and Methodology, Measurement and Statistics
- 845537/752024 Alexander, Karl, and Entwisle, Doris, Johns Hopkins University Baltimore Beginning School Study. 1982-2008
- 0701376 Moaddel, Mansoor, Eastern Michigan University Surveys in Islamic Countries
- 093076 Stark, David, Columbia University Database of personnel network history of ties between business enterprises (2,610 largest firms) and political parties (19,000 office holders) in Hungary: 1987-2001
- 082155 McCarthy, John, Pennsylvania, State University and Olzak, Susan Stanford University Database of Social Protests
- 0531229 Tolnay, Stewart, University of Washington Database of Southern Lynchings: 1882-1930.

New Dataset Collection and Dissemination

Finally, the Sociology Program has supported several new projects that are largely intended to gather new data sets or make existing data more accessible for use by the research community

071827 Jensen, Leif, Pennsylvania State University and Slack, Timothy, Louisiana State University A National Survey of Informal Work
0704338 Trieman, Donald, University of California, Los Angeles Internal Migration in China: Data Collection and Analysis
0921372/0921343 Kaufman, Karen, University of Maryland and Holbrook, Thomas, University of Wisconsin, Milwaukee Database of Multi-City Survey of Political Behavior in Urban Settings
0819400 Kaufman, Jason, Harvard University Database of Social Network Sites. Jointly supported by Methodology, Measurement and Statistics

PART C. OTHER TOPICS

C.1. Please comment on any program areas in need of improvement or gaps (if any) within program areas.

The full potential of the Sociology Program cannot be reached without better staff support. We strongly recommend increasing the number of program officers and science assistants in the program.

The Sociology Program invests considerable effort into recruiting underrepresented minorities into the pool of PIs, reviewers and panelists. In general, the program has done so with considerable success regarding reviewers and panelists. However, the ASA's assessment of the program's Dissertation Improvement Grants shows that racial and ethnic minorities remain underrepresented in the pool of awardees. It would be useful for the program to do a more in-depth analysis of the degree to which this pattern is a reflection of the graduate student pool at large, whether minorities have lower success rates (i.e., are applying but not getting these grants), or whether they are underrepresented in the pool of applicants. Solutions to this might include additional outreach to students, institutions, and professional associations where minority recruitment and mentoring appears promising.

C.2. Please provide comments as appropriate on the program's performance in meeting program-specific goals and objectives that are not covered by the above questions.

In Part B, we outlined the many ways that the Sociology Program contributes to NSF's mission and goals; these fit well with the program's mission and goals.

C.3. Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

The collaboration of social science with natural science and engineering is a central part of NSF's mission. Sociology and social sciences have much to offer to colleagues outside the SBE directorate in understanding the human dimensions of many natural processes and systems as well as the broader impacts of natural science, mathematical, and engineering research. There are relatively few opportunities and motivations for either social or natural scientists or engineers to meet and collaborate in the design of multidisciplinary projects. NSF should continue to work on ways to foster interdisciplinary collaborations. Some topics are more suitable for interdisciplinary research, for

instance, environmental change. Some programs are good at creating multidisciplinary spaces for faculty and students, e.g. IGERT programs. The conditions and skills that facilitate interdisciplinary research are not well-understood, so this is a ripe area for study for NSF funding.

C.4. Please provide comments on any other issues the COV feels are relevant.

n/a

C.5. NSF would appreciate your comments on how to improve the COV review process, format and report template.

The Sociology COV appreciates NSF's efforts to create a review template that provides comparable information across programs. At the same time, the current template tends to stress administrative and statistical performance measures that may or may not effectively convey to the COV the "bread and butter" program activities, nor can it illustrate how special initiatives (e.g., for infrastructure) or opportunities (e.g., ARRA funds) can impact proposal loads, budgets, and workloads. Thus, in an effort to standardize the COV across programs, the current template limits the time available for thoughtful review of the substantive and intellectual merit of proposals and awards. Setting aside more time for interviewing program officers and a more flexible review template could enhance the COV's ability to better assess the overall substantive and scientific merit and contributions of the Program's research portfolio. The COV devoted considerable time to selecting and categorizing awards in response to the questions in parts B1, B2, and B3, and had very limited time to understand in detail what theoretical issues and methodological approaches they represent or to consider the extent to which these awards are resulting in publications, dissertations, and other relevant outcomes.

PROGRAM SPECIFIC QUESTIONS

C.6. Are there new areas of exciting research which the program should engage?

Given the proposed flat program budget, it seems that one opportunity for the program to develop new research directions and opportunities lies in engaging and soliciting research on general topics and areas as delineated by SBE and NSF at large. Sociology has significant potential to make solid substantive, methodological and theoretical contributions to identified strategic areas, for instance *environment* and sustainability, *education* for the 21st-century workforce, the *economy*, *health care*, and *social inequality*.

More than ever, sociologists are actively engaged in conducting comparative-international research, including in Latin America as well as Asia (e.g., China, India). This is an exciting opportunity, as the program could strategically seek to strengthen support for comparative and international projects. Research and training conducted within a global context as part of these projects will facilitate important intellectual and scientifically based policy insights.

C.7. Is the program funding the right priorities?

- a. **Data Collection/Research Infrastructure?** - Yes!
- b. **Graduate Students** - Yes!
- c. **Basic Science** - Yes!

C.8. Given the budget and the position at NSF, is the Sociology program meeting the research needs of the discipline? What could be done better?

The Sociology Program emphasizes conceptually-driven research. This is not so much the case with more problem-oriented or applied funding sources available to sociologists, and is a real contribution the theoretical and basic science aspects of the discipline. Although we make this point briefly and at the very end of this document, it is essential to the identity of the Program and the contribution that NSF makes more generally to the science community.

SIGNATURE BLOCK:

For the Sociology Committee of Visitors

John Logan, Chair
Milagros Pena
Joane Nagel