Social and Economic Sciences Division

Update on Actions Taken in Response to 2010 COV

September 27, 2011

A Committee of Visitors (COV) convened September 22-24, 2010 to review the eight disciplinary programs that comprise the Social and Economic Sciences (SES) Division of the SBE Directorate. The programs reviewed included Decision, Risk and Management Sciences Program; Economics Program; Innovation and Organizational Sciences Program; Law and Social Science Program; Methodology, Measurement and Statistics Program; Political Science Program; Science, Technology and Society Program; and Sociology Program.

This report includes a description of specific responses to the Division-level concerns raised by the COV, and reflects a careful consideration of suggestions for the Division in light of the challenges it currently faces. The Division replied to the report in November, 2010. What follows is an update to that response, including a brief summary of analysis of data captured and considered in the intervening period.

SES Reponses to COV Items and Issues

The COV noted that the SES Division faces changing circumstances that are driven largely by the progression of the fields of science represented within the Division. Whereas there is no longer the problem of having to establish SES' identity–that is, the significance of the SES sciences is no longer up for debate; there is now the potential problem of greater demand for the SES sciences (and SBE sciences in general) than is available given current resource allocations. For example, SES sciences are routinely called upon by other directorates within NSF (e.g., GEO and ENG) as well as external agencies (e.g., Census Bureau, ONR, AFOSR, NIJ) to provide expertise, offer guidance as well as contribute to funding science research with national significance. Yet, as the COV noted, SBE remains the lowest funded science directorate among the directorates at NSF. As such, the COV outlined four specific issues that they hoped attention to would prove helpful for the future direction of SES.

1. The COV noted that the workload of SES staff continues to expand. This observation is coupled with acknowledgement that administrative resources have failed to keep pace with the rate of expansion of workloads. Consequently, the COV was justifiably concerned with whether SES program staff would be able to be appropriately responsive to current developments and unfolding needs in their respective research communities.

The SES divisional leadership is aware of this potential challenge and has engaged in three activities to address it. First, we have engaged in a critical analysis of the flow of work in which program officers and administrative support staff engage. This analysis began with a comprehensive spreadsheet describing the work tasks around proposal processing, and identification of responsibilities of those tasks. We scheduled meetings of the entire program team within each program (program officers, program specialists, science assistants) and discussed how tasks might be reassigned in order to improve the flow

of work. These reassignments are currently underway and follow-up meetings to evaluate the changes are planned.

Second, we held a "workload workshop" aimed at program officers in order to explore alternatives and share strategies for dealing with increased workloads caused by proposal load, policies, and other assignments and expectations. Twenty-four program officers plus members of the senior management team participated, and generated a number of new and creative ideas, some of which are being pre-tested by individual programs.

Third, we are experimenting with new models for work assignments to program officers. One of the challenges indentified in the workload workshop involves balancing engagement with program officers' own programs and with cross-cutting, NSF-wide activities. In 2012 we anticipate participating in a number of cross-cutting NSF-wide activities in the area of cyber social science. This cycle we hired a full-time program director with expertise in this cross-cutting domain, with the vision that he will be primarily responsible for participating in these cross-cutting, NSF-wide activities, allowing the program officers to focus on their core programs.

While these analyses, changes and experiment will not eliminate the workload stresses felt in SES, we believe that they will provide a first step at identifying and understanding the problems, and will set in place a set of processes and mechanisms that can be used to reflect on the workload and to identify further improvements in the future.

2. The second concern expressed by the COV addressed what it referred to as the need for SES to move "beyond-business-as-usual." Here the report emphasized the importance of self-evaluation for both the disciplinary and interdisciplinary programs as well as the major initiatives supported by SES (e.g., General Social Survey, the American National Election Study and the Panel Study of Income Dynamics).

Since the original response, three actions have occurred that provide feedback about how SES programs are functioning as well as additional guidance for future directions. First, the Law and Social Science and the Decision Risk and Management Sciences programs have sponsored multi-day workshops on the futures of their field. In these workshops, leading scholars developed critical evaluations and guideposts for future directions of the sciences represented within each of the programs. That feedback has helped to determine the current targets for each of the fields and serves as a standard against which to compare future progress.

Second, a similar workshop was held for the big surveys (GSS, ANES, & PSID) in the summer of 2010. It resulted in critical feedback and suggestions about useful enhancements for the surveys. One set of activities that emerged from these discussions was a renewed focus on data dissemination of SBE infrastructure. A solicitation has now appeared, soliciting proposals to document metadata for the ANES, PSID and GSS, and future activities (including a Dear Colleague Letter and community-building workshops) are planned to help us to move beyond business-as-usual in this domain.

Third, the SBE Assistant Director has engaged in extensive outreach about the future of the SBE sciences (the Futures project with the Advisory Committee, and SBE 2020 with the community). As a result of

these activities, program officers have access to new insights about cutting edge research ideas from their research community that can ultimately be culled into new and exciting program initiatives. This activity reinforces the "leading by following" model of the Division, Directorate and the NSF which the COV highlights.

3. The third area of concern raised by the COV has to do with what they've characterized as the co-evolution of organization and information. As the COV report correctly notes, this is a challenge facing all organizations and NSF as a whole. However, what is unique and especially noteworthy is that the science staff within SES has the specific expertise to address some of the potential hurdles to progress along both fronts of organizational expansion and information infrastructure.

SES divisional leadership concurs with this observation and notes that there are no easy solutions to this challenge. Two current activities are worth noting. First, the STAR METRICS program (headed by Julia Lane of SBE) collects detailed data from awardee institutions in order to evaluate and assess the impacts of the grants we make. This program is underway and we are hopeful that the data collected will be useful for meeting the challenges that the COV has identified.

Second, the SBE Advisory Committee, jointly with the CISE Advisory Committee, formed a subcommittee to advise NSF on using recent advances in information technology to better understand its research portfolio. That subcommittee was charged with identifying and demonstrating techniques and tools that could characterize a specific set of proposal and award portfolios. In addition, the subcommittee was asked to provide recommendations on ways that NSF could better structure existing data, make use of existing machine learning, analysis, and visualization techniques to complement human expertise and better characterize its programmatic data. Findings as well as several recommendations are described in the report "Discovery in a Research Portfolio" (November, 2010). SBE is reviewing the report's findings and recommendations.

4. The final challenge articulated in the COV report focused on the extent to which SES is leveraging its investments that contribute to the welfare of the nation. In order to maintain its ability to support the best research serving the broadest population possible, SES and NSF as a whole must wrestle with the challenge of supporting fundamental versus practical knowledge and basic versus applied approaches. The COV notes that in the SES sciences there exists an interdependency of fundamental and practical knowledge that addresses problems of national significance but must also serve to build competencies and knowledge in the core disciplines.

The need to achieve a balance between curiosity-driven and problem-driven research is long-standing and Foundation-wide. We have instituted a new process to monitor this balance. After each panel, program officers schedule a post-panel meeting with the Division Director and Deputy Division Director. At this meeting, program officers make their recommendations for funding, and are asked to prepare a discussion not just of any given award, but also of their *portfolio* of awards. This discussion of portfolio includes dimensions like safe/risky research, new/established research teams, and (most relevantly), basic/applied research. Thus within each program, program officers pay attention to this tension and the balance which their program supports.

At the level of programs, three new program descriptions have been developed and will soon appear (Law and Social Science; Science, Technology and Society; and Science of Organizations). These descriptions include calls for multi-disciplinary proposals that are problem-driven rather than discipline-driven.

Finally, SES participation in NSF-wide solicitations often supplements its applied research activities. A recently-released solicitation on cybersecurity (Safe and Trustworthy Cyberspace) provides an example of how SES sciences can inform a problem of national importance, while building competencies and knowledge in the core disciplines.

Data

The overall funding rate for proposals submitted to the SES Division for Fiscal Year 2011 is approximately 17%. The funding rate for standard awards is 13%, while the funding rate for dissertation proposals is 28%.

Table 1. Proposal Numbers and Funding Rate for FY 11

	Total Number of Proposals	**Awards**	**Declines**	**Funding Rate**
Dissertations	590	166	424	28.14%
Standard	1583	205	1378	12.95%
Overall	2173	371	1802	17.07%

Within the Division and across programs there is variability in funding rates which is driven by a constellation of factors, most notably budget sizes.

Table 2. Proposal Numbers and Funding Rate for FY11 by Program (Standard and Dissertation combined)

Program	**Competitive Proposals**	**Competitive Awards**	**Funding Rate**
1321 Decision, Risk, & Management Sciences	210	44	20.95%
1320 Economics	344	80	23.26%
5376 Innovation & Organization Sciences	82	10	12.20%
1372 Law & Social Sciences	273	48	17.58%
1333 Methodology, Measurement, & Statistics	82	9	10.98%
1371 Political Science	401	56	13.97%

7603 Science, Technology, & Society	366	51	13.93%
1331 Sociology	337	65	19.29%
Overall	**2,095**	**363**	**16.52%**

As would be expected, the average award budget for dissertations is far smaller ($10,626) than that associated with standard awards ($218,109).

Table 3. Average Award Budget for FY11

	Total Spent	**Total Average Award Size**
Dissertations	$1,763,967	$10,626
Standard	$44,712,345	$218,109

Some variability in average award budgets also exists across the programs within the Division, though the overall difference in sizes is not extreme.

Table 4. Average Award Budget for FY11 by Program

Program	**Award Sizes**			
	Dissertation Total	**Dissertation Average**	**Standard Total**	**Standard Average Award Size**
1321 Decision, Risk, & Management Sciences	$162,264	$10,142	$6,684,047	$238,716
1320 Economics	$158,877	$12,221	$17,349,361	$258,946
5376 Innovation & Organization Sciences	$0	$0	$2,812,085	$281,209
1372 Law & Social Sciences	$318,726	$12,259	$3,662,840	$166,493
1333 Methodology, Measurement, & Statistics	$31,575	$7,894	$736,595	$147,319
1371 Political Science	$486,835	$11,322	$2,449,582	$188,429
7603 Science, Technology, & Society	$273,935	$10,957	$3,766,333	$144,859

1331 Sociology	$331,755	$8,507	$3,795,947	$145,998
Overall	**$1,763,967**	**$10,471**	**$41,256,790**	**$196,496**