

HSD COV Report: NSF Response

This document is NSF's response to the report prepared by the Human and Social Dynamics (HSD) Committee of Visitors (COV) in June 2008. It is intended to address and clarify issues raised in the COV Report to NSF.

Question: Are both merit review criteria addressed in individual reviews? (p. 6)

There was considerable variation across proposals. Some reviews were too terse and lacking in substance. Others were well developed. Generally, more weight was given to intellectual merit than to the broader impact component. The discussion of broader impact was sometimes perfunctory and lacking in imagination. Principal investigators confused intellectual merit criteria with broader impact. Several proposals were funded that lacked a serious broader impact statement.

HSD staff agree that broader impacts are extremely important and encourage panels to thoroughly discuss the potential broader impacts of each project during panel deliberations. While written panel summaries may exhibit variation in their treatment of broader impacts, HSD management has always considered each project's broader impacts when determining awards and declines.

Question: Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)? (p. 7)

In some cases, the individual reviewer ratings of a proposal varied widely, but the panel summary did not explain how a consensus was reached (or the disagreement resolved).

It should be noted that the purpose of the panel summary is not to show how consensus was reached, but to reflect the panel's discussion of all relevant issues. The panel summary should clearly document areas where reviewer's opinions converged and where consensus was achieved, but also where reviewers disagreed.

Question: Is the time to decision appropriate? (p. 8)

With the exception of the DRU emphasis area, the program has met the goal of informing PIs within six months. The time to decision for awards is longer than for declines, as one might expect. An analysis of awards with unusually long decision times in the DHB area suggested that delays might have been due to (i) a decision to seek additional reviews after the panel review or (ii) applications submitted in one year but funded with money from the next year.

Time to decision is calculated as the time from proposal receipt or deadline date to the date of Division Director (DD) concurrence. While the DRU emphasis area did not meet NSF's goal of DD concurring 70% of proposals within six months,

the lead DRU program officer stressed that all investigators were informed of the fate of their proposal by email well within the six month period. Efforts will be made to ensure that notifications to PIs are documented in each electronic jacket.

Question: Did the program make use of reviewers having appropriate expertise and/or qualifications? (p. 9)

Based on the information provided, there seems to be an appropriate array of disciplines included. The group noticed few obvious representatives with PhDs from professional schools (including law schools), although it is possible they may be included under various disciplines, reflected in the disciplinary list, and an insufficient number of reviewers from the learning sciences.

The number and breadth of proposal topics means that most panels lacked deep knowledge in any one discipline. It appeared to us that many of the reviewers lacked domain knowledge in the subject area covered in the proposal. It is likely that for some proposals panel members from other fields could address general issues such as methodological competence, but they lacked the expertise to address fully the substance and potential contribution of the project.

With respect to comments on the number of investigators from professional schools and from the learning sciences, it is likely that the numbers are not disproportionate given the research represented. Moreover, it may be that some reviewers **do** represent the schools or disciplines in question, but because of their current academic appointment, do not appear to do so (examples might be an education researcher housed in a psychology department or someone trained as an attorney serving in a political science department).

The comment that “most panels lack[ed] deep knowledge in any one discipline” gets at one of the inherent difficulties in interdisciplinary competitions. HSD panel moderators made every effort to recruit an array of panelists with not only the appropriate domain knowledge but also the academic breadth required to review these often extremely interdisciplinary projects. In the very few instances where no individual on the panel had the appropriate expertise to review a specific part of a proposal, HSD staff obtained external ad hoc reviews to ensure a fair and thorough review process.

Question: Did the program use reviewers balanced with respect to characteristics such as geography, type of institution, and underrepresented groups? (p. 10)

We do not have the data to speak to the gender, racial, ethnic, and geographical balance of reviewers. If NSF is interested in these issues, they must collect and maintain relevant data sets in this regard.

Successful proposals were heavily weighted in favor of Ph.D. institutions, although this is to be expected because they are the institutions that are generated proposals. We believe,

however, that NSF should make a stronger effort to bring more colleges and universities into the mainstream of interdisciplinary science.

HSD staff agree that efforts should be made to improve NSF's reviewer database. With respect to institution type, many HSD awards have been made where the non-lead institutions are smaller, non-Ph.D. granting institutions.

Question: What was the overall quality of the research and/or education projects supported by the program? (p. 11)

With several exceptions, awards were very good to excellent with interesting ideas and strong interdisciplinary teams. It is too early to gauge their outcomes at this early date, although they appear to have considerable potential for quality research.

There appeared to be considerable variation in the rigor of the analyses as well as the generalizations possible from the research. Further, the portfolio could be strengthened by proposals with stronger integrative frameworks. In most cases there were limited discussions of the educational impact of the research.

There were, however, proposals from disciplines (e.g. economics and computer science) with a history of collaboration that did not appear to draw new groups of people together. Several of the economics proposals in particular would have been more appropriately submitted to the economics program.

With respect to the comments in the third paragraph, HSD staff agree that the program received **proposals** that could have been supported by existing NSF programs. However, such proposals were identified either by review panels or HSD staff as inappropriate for funding because they did not meet HSD's interdisciplinary requirements. HSD **awards**, on the other hand, must represent research that would not typically be funded by a standing NSF program.

Question: Does the program portfolio promote the integration of research and education? (p. 12)

The proposed education programs were generally weak. The plans were not well thought out and unlikely to make significant contribution to the training of the next generation of interdisciplinary scholars.

The jackets we reviewed, on balance, provided little evidence for any educational activities beyond the standard (e.g. funding of graduate students). That being said, we identified several awards that do a strong job incorporating – or even explicitly studying – education. For example, Ross, “Understanding Conceptual and Cultural Change: The Role of Expertise and Flexibility in Folk Medicine,” 0527707, and Penuel, “Analyzing the Flow of Network-Embedded Expertise in Schools,” 0624307, focus on that aspect of the HSD mandate in a thoughtful way. In addition, we saw some proposals that included new interdisciplinary courses.

HSD staff recognize that some of the educational efforts outlined in the proposals were not as strong or innovative as they could have been. However, the staff place a strong emphasis on providing educational opportunities and, toward that end, have made numerous supplements to existing HSD awards for Research Experiences for Undergraduates (REUs). Therefore, the HSD program has addressed education even in cases where the original proposals did not.

Question: Does the program portfolio have an appropriate balance of inter- and multi-disciplinary projects? (p. 13)

The proposals were stated in an interdisciplinary manner, the question was whether the appropriate disciplines were included and whether the range of disciplines was sufficiently broad. The program officers might take a more active role in communicating this aspect to the PIs given the range of responses in the panel summaries.

HSD staff agree that it is important to be thorough in communications with investigators, especially given the difficulties inherent in reviewing interdisciplinary projects.

Question: Does the program portfolio have appropriate participation of underrepresented groups? (p. 15)

There appears to be appropriate gender diversity, but inadequate representation of racial and ethnic minorities.

HSD staff note that this is a persistent issue for the NSF as a whole and for scientific disciplines in general. Furthermore, there is not evidence to suggest that – given the overall pool of scholars – the representation in HSD projects is disproportionately low. It should be noted that NSF is initiating a large-scale effort to better understand how to broaden participation and continues to emphasize outreach to underrepresented groups and institutions.

Comments on management of the program:

Management did a good job in soliciting applications, constructing panels, and awarding funds. Management made an early decision to emphasize flexibility and breadth. There were problems and opportunities from this strategy. The main problem was that not every proposal was reviewed by someone with a depth of knowledge in the subject area of the proposal. The opportunity was the ability to respond quickly to climate change, Katrina, the Indian Ocean tsunami. At the end of the day, a great deal was learned about managing new interdisciplinary initiatives. In our experience, the caliber of the program managers has been exceptional.

HSD panel moderators made every effort to recruit an array of panelists with not only the appropriate domain knowledge but also the academic breadth required to

review these sorts of projects. The panels were representative of the disciplines involved in the proposals.

Comments on The Future Support of Interdisciplinary Research at NSF (p. 23)

We are profoundly enthusiastic about the prospects of interdisciplinarity. The HSD program has served as a catalyst for many innovative projects, and its administration has been solid.

That being said, based on the 2004-2009 portfolio, we believe that a substantial fraction of the HSD budget should go back to core SBE programs. We believe that many of the projects funded under HSD could have been reviewed through the core programs. Core programs should be encouraged to pursue joint review and co-funding with other programs to sustain the advantages and innovations of interdisciplinary research, including investigation of topics in human social dynamics. In fact, we suggest that calls from core programs make explicit that they encourage interdisciplinary proposals, and that there are mechanisms in place to permit appropriate review.

In some SBE programs, a very high percentage of proposals are currently co-reviewed, so HSD staff note that co-review is already part of the “culture” for many of NSF’s social science programs. Having said this, co-review appears to be much less common in other research directorates. SBE is very much at the leading edge with respect to joint review and co-funding.