

Response to:
**FY 2009 COV for Marine Geology and Geophysics (MGG), Ocean
Drilling Program (ODP), Oceanographic Technology and
Interdisciplinary Coordination (OTIC), Ocean Education (OEd),
Chemical Oceanography (CO), Physical Oceanography (PO), and
Biological Oceanography (BO)**

The Geosciences Directorate (GEO) wants to express sincere thanks to the Committee of Visitors for the significant time and effort spent in the review of the several core programs in the Ocean Sciences Division (OCE) with regard to meeting NSF's standard and expectations in program management, in the support of important and innovative research and technology development pertaining to the oceans, and in keeping a diverse and well-trained workforce in place in the nation to keep the United States as a leader in ocean research. In OCE's experience, this COV set a new standard in terms of breadth and depth of its inquiry as well as the insightful and wide coverage of its thoughts and recommendations. Working with the Committee was a pleasure for our staff.

The Committee of Visitors triennial review of each OCE program is one important process by which GEO and OCE learn about our successes in fulfilling NSF's responsibilities to the nation, and by which we come to better understand areas for improvement. The COV report and follow-up documents also serve as a very important conduit for feedback to the broader community about our performance in the eyes of leaders in the community itself. We welcome the recommendations for improvement of the general nature and operation of the COV process, as well as for areas in which OCE programs need to focus attention.

The strengths that the COV calls out as noted below are very important to the functioning of GEO, and we value your perceptions:

“(Review analyses) are exceptionally well developed and written and presented”

“OCE is to be commended for the many ways in which awards promote the integration of research and education”

“It is clear that OCE is funding innovative and potentially transformative projects. Furthermore, across the OCE Division, the success rate for proposals identified as high risk/high reward is about double that of other proposals.”

“We also note that OCE sponsors Dissertation Symposia, which are bi-annual meetings of recent doctoral recipients for each of the disciplines”

“ We thank the Program Officers for their efforts in making themselves available to the community”

“We commend OCE for enforcing a very strong data release policy”

“Overall, the COV was impressed with the excellent caliber, collegiality, and dedication of the OCE management team, Program Officers, and staff.”

The COV noted that OCE POs have done a good job of responding to comments and recommendations of the previous COV in FY 2006. MGG was particularly singled out for great improvement. Thank you.

Thanks for the very strong support you have voiced on the program management and the program managers. Thanks also for taking the time to understand the nuances of our program management enterprise, and the necessity to balance the ideal with the practical in fulfilling the great responsibilities with a small but dedicated staff.

Below we provide responses to specific recommendations and general comments.

A.1.2. (p.5) *The COV noted that in no cases (130 proposals examined) did Broader Impacts appear to be a significant decisions for awards or declines. Currently the NSF standards are to have the two merit criteria – Intellectual Merit and the merit of the Broader Impacts – addressed in each and every written, email review; panel summary; formal Review Analysis; and Program Officer Comments. All but the Review Analysis are provided to the principal investigator to summarize proposal review. Each panel in OCE is preceded by a full discussion of these two criteria, with the majority of discussion on the Broader Impacts. That said, not every panel pays similar levels of attention to this subject.*

Both in panel introductory guidance, in comments by program officers during the panel and in program officers’ analyses, we will increase the effort to explicitly identify when the Broader Impacts activities of the proposal are of such merit as to significantly weigh in the decision in favor of a higher rating or award recommendation. As currently, the programs will continue to evaluate the caliber of broader impacts activities in feedback provided the Investigator.

A.1.3. (p.6) *The COV asked whether, in the future, we could provide statistics for each program on number of reviews per proposal versus success of proposals. Great idea. We can definitely do that for future COV. We will get this information and make it available to the next COV.*

Also, the COV indicated it will write an article for EOS regarding the OCE review process to inform the community of the importance of substantive review comments. Many thanks for this effort. Its important that all of the community recognize the importance of substantive comments, rather than ratings alone, in reaching funding decisions.

A.1.4. (p.6) *The COV noted that in some cases panel summaries did not communicate the decision making process.* The purpose of the panel summary is to communicate the panel discussion to the Program Officers and the PI. The decision making process is communicated via the Program Officer comments; which are also forwarded to the PIs. We will do a better job of clarifying these differences in the future, and encourage panelists to more consistently indicate the weighting given to specific issues raised in their discussions.

The COV also noted that it would be useful to identify the expertise of panel members in the jacket. This is an interesting idea, however it would be impractical at this time because this information is not included in any NSF data base. However, we can experiment with providing this information in a diary note included in the jacket. This information would not be made available to the PI, but could be useful to future COVs.

A.2. 1. (p.9) *The COV again notes the issue that mail reviewers and panelists are not coded for Program alliance or expertise.* As noted above (A.1.4 and A.1.8), the status of NSF-wide databases precludes an immediate, systematic solution. In the near-term, the best solution for future COV might be to answer specific COV questions in real time by having POs available in the room at all times.

The COV also noted that panel summaries should be comprehensive and adhere to the standard format for all OCE programs. Management will indeed make sure that future panels adhere to a standard format by having all the panels discuss, on the first day, format and content of panel summaries, with examples of helpful and less helpful panel summaries.

A.1.6. (p.7). *The COV noted that PIs can receive the review analysis of their proposal to explain award decisions.* Actually the PIs do not receive copies of the review analyses, which are meant for internal use only. Program Officers do, however, routinely use phone or email, plus "PO comments" to explain award and decline decisions to PIs.

The COV noted a concern about resubmissions: whether they are encouraged or not. How many resubmissions are "too many"? How is this best conveyed to PIs? OCE does discourage immediate re-submittal of declined proposals in order to allow time for the PIs to comply with NSF policy that would return to the PI resubmitted proposals that have not been significantly revised following prior review. In some cases, the PO provides fairly clear guidance to the PI about whether resubmission is appropriate, based on input received after a declination (including verbatim mail reviews, panel summary, PO comments, context statement, plus PO phone or email discussion).

A.1.8. (p.8) *The COV noted that shared proposals, at the edges of two or more disciplines, have a lower success rate than non-shared proposals. The COV expressed concern that multi-disciplinary proposals might be falling through the cracks.*

From 2006 to 2008, the percentage of OCE proposals reviewed by two or more OCE and other programs increased from ~24 to 33%. The success rate for “joint” proposals ranged from 6-9 percentage points lower than for those within a single program, with less differential in 2007 and 2008. This discrepancy reflects differing priorities in the programs, and perhaps also the tendency of reviewers to focus on their area of expertise rather than the full spectrum of the proposal. That said, OCE POs understand clearly the importance of bridging disciplines and have the responsibility of deciding whether to fund an interdisciplinary proposal despite low review/ panel scores as the increasing success of interdisciplinary proposals indicates. In addition, across GEO, special foci like Emerging Topics in Biogeochemical Cycles, Multi-scale Modeling, Paleo Perspectives in Climate Change are handled in ways to facilitate funding for multi-disciplinary proposals in key areas.

The COV noted that biogeochemistry proposals were reviewed mostly by Chemical Oceanography, and that it was difficult to tell which were co-reviewed with another program. In fact, a great many biogeochemistry proposals are co-reviewed by BO, CO , and MGG. This can be gleaned by reading the review analysis, which specifically indicates the “interested” programs. OCE management will work with program staff to ensure that this information is immediately visible and complete in the review analyses.

The COV recommends that future COV revisit the issue of correlation between proposal scores and funding actions. Anecdotally, we note that there is generally a strong correlation between review scores and funding decisions. To take this a step further, OCE management will assess the quality of data available for doing a direct correlation of proposal scores and funding actions for future COV’s, noting that not all reviewers rate proposals, and that not all ratings fully reflect the substantive comments in the review text. If a meaningful comparison can be developed, we will provide that in the background OCE statistics. The COV also noted that it might be possible to improve the numerical scoring system. We will forward your suggestion to the NSF Policy Office, since this is not a local division decision.

A.2.2.(p.10) *The COV recommends that women and scientists from under-represented groups be consistently well represented as reviewers and panelists.* We concur, and OCE management will continue to ensure that is considered in selection of reviewers and panelists.

A.3.3. (p.12) *The COV recommends that POs continue to be alert for proposals with inadequate duration.* Thank you for this recommendation. We will continue to raise the awareness in the community about NSF’s interest in achieving award durations appropriate for the project proposed, not to exceed five years. We note that program officers, based on their own analyses, or the inputs of reviewers and panelists, work with

the panels when appropriate to help craft recommendations for augmented award size and duration that pass review of NSF Division of Grants and Agreements, consistent with project scope. We applaud the extra effort of the COV to help get the message across to the community, via the anticipated EOS article, to counter confusion about the relationship of award size and success rate.

A.3.7. (p.13) *The COV notes that OCE is doing a good job of including new investigators.* The success of promising young scientists, and the role of NSF grants in enabling that success, is an important topic for OCE, GEO, NSF and the Administration. A critical issue is the ability, typically learned, to write strong proposals that allow the science to be judged effectively. Thank you for noting that we entrain young scientists into the review process as panelists, as part of our effort to accelerate their training in proposal-writing as well as to ensure a strong and innovative workforce of research into the future. OCE will undertake a comparison of the relative success rates in our programs with the rest of the Foundation. We can also arrange for future COVs to look at some proposals that center around funding decisions for new investigators.

A.4.3. (p.17) *The COV noted that only a small number of proposals had equipment in their budgets and that these were exclusively in BO and PO.* This is likely a function of the small sample size. We will ensure that this issue is given more specific attention in the preparation of statistics for future COVs.

A.4.4. (p.18)

B.3 (p.25) *The COV noted that future COVs might want to assess the funding appropriateness of laboratory instrument needs.* This is a good idea. We note that there is not a special coding for lab instruments vs. instruments used in the field, to facilitate such an assessment.

C.3 (p.25) *The COV notes that the AC-GEO should look into the issue of balance between core programs and targeted solicitations and intermediate size programs.* This is a topic of continuing discussion with AC/GEO, as it addresses questions of balance across GEO.

C.5 There are 10 Recommendations for making the COV process work better. We greatly appreciate the time and attention the COV provided to the COV process itself, and ways it might be streamlined and supported to improve effectiveness and efficiency. We note that almost all of these recommendations are achievable and we will ensure they are implemented on the next COV activity of AC/GEO for OCE and we will also forward them to the NSF-wide COV monitor. The two exceptions are:

- *inviting COV members to serve as panelists.* Most of the COV members have served as panelists before for OCE. There are requirements for COV composition to insure fairness. Only a certain percentage can be past reviewers in the program.

-while the electronic panel system might not be possible for the COV, another shared-work environment should be very doable to achieve the intention of the COV on this recommendation.