NATIONAL SCIENCE FOUNDATION
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OFFICE OF THE
ASSISTANT DIRECTOR
FOR GEOSCIENCES

September 26, 2006

Dr. Mary Jo Richardson
Department of Oceanography
Texas A&M University
College Station, TX 77843-3146

Dr. Michael Roman
University of Maryland
Horn Point Laboratory
P. O. Box 775
Cambridge, Maryland 21613

Dear Drs. Richardson and Roman:

Thank you for submitting the report of the Committee of Visitors (COV) for the research programs in the Ocean (OS) and Marine Geosciences (MGS) Sections, plus the Ocean Education and Ocean Technology and Interdisciplinary Coordination (OTIC) Programs within the Division of Ocean Sciences (OCE), which was held June 26-28, 2006. I am grateful for your thorough and valuable analysis of these programs.

I was delighted to read your assessment that the OCE management team members are high quality, dedicated and capable individuals doing an excellent job in facilitating and managing oceanographic research and education. And I also appreciate your strong recommendation that OCE continue to emphasize basic research, since NSF remains the primary agency that funds fundamental disciplinary research that is vital to the progress of oceanography.

I am deeply appreciative of your hard work and thoughtful deliberations in evaluating the activities of OCE. The constructive criticisms and recommendations in the COV report help us to assess our strengths and weaknesses and identify ways in which we may be more responsive to the needs of the scientific community. I want to assure you that your recommendations are carefully considered by the Division and Geosciences Directorate.

Dr. Julie Morris, OCE Division Director, and the Section Heads have provided a set of specific responses to your findings and recommendations in the enclosed document.

Again, thank you for the time and effort you expended on behalf of the Foundation. We will continue to strive to maintain the tradition and challenge of close cooperation with our research community.

Sincerely,

Margaret Leinen
Assistant Director

Enclosure

Copy to: COV Members
William Brune, Chair AC/GEO

Response to the 2006 Committee of Visitors Report NSF Division of Ocean Sciences (OCE).

August 3, 2006

FROM:

Julie D. Morris, Director, OCE
H. Lawrence Clark, Section Head, Ocean Section, OCE
Rodey Batiza, Acting Section Head, Marine Geosciences Section, OCE

We, and the Program Staff, thank the 2006 Committee of Visitors (COV) for their time and efforts to review research programs in the Ocean (OS) and Marine Geosciences (MGS) Sections, plus the Ocean Education and Ocean Technology and Interdisciplinary Coordination (OTIC) Programs. We very much appreciate the time you spent visiting NSF, meeting with the staff and writing the report. We also appreciate that the COV recognized that the OCE management team members are high quality, dedicated and capable individuals doing an excellent job in facilitating and managing oceanographic research and education. We are especially pleased that the COV noted the collegiality and cross-disciplinary communication amongst the staff members that are critical for effective stewardship of the programs. OCE Program Managers work extremely hard to ensure that our research programs are worthy of such high praise.

We appreciate the strong recommendation that "*OCE continue to emphasize basic research rather than mission-oriented science, since NSF remains the primary agency that funds disciplinary basic research...this basic research funded by the core areas of OCE is vital to the progress of oceanography.*" It is well known that increasing facility costs are impacting core funding. A top priority for NSF/OCE is to manage a balance between research and facility support and to retain flexibility in its ability to fund core science.

We are pleased that the relatively new e-Jacket COV module worked well for this review. The fiscal years covered by the review, (FY 2003-2005) covered the time period when e-Jacket was being implemented across NSF. Some of the unevenness noted by the COV in proposal documentation may have been exacerbated by the transition itself – by staff's having to essentially generate paper as well as electronic copies of various forms and communications. This e-Jacket transition may explain the comment in the overview stating "*It was noted that after a proposal was declined, the hard copy files are destroyed, thus making it sometimes difficult for the COV to reconstruct the decision process for declines.*" At the present time, the electronic e-Jacket decline is the official record for declines, and OCE management insures that the electronic review record for

declinations is fully complete before hard copies are destroyed. Currently, the hard copy, paper files for awards represent the official record and are retained. However, the electronic e-Jacket award files contain the complete documentation as well.

OCE management is gratified, that on several occasions, the COV explicitly cited exemplary efforts of the Ocean Section program officers in documenting award decisions and in providing useful and comprehensive feedback to investigators. This level of customer service does require extra time and effort, but it is worth it, given the positive feedback we receive from the community. We also believe the extra effort helps improve subsequent proposals and the advancement of ocean science.

We are pleased that the COV saw good progress in responding to recommendations and comments from the previous 2003 COV. Nearly all matters identified as needing attention have been adequately addressed and only two require further attention. These are developing metrics that better allow us to identify within OCE's portfolio those proposals considered to be high-risk and interdisciplinary.

The 2003 COV's greatest concern was that increasing Program Manager workload was affecting their ability to communicate with PIs, visit institutions, track program trends, and attend professional meetings and workshops. We addressed these concerns by hiring several Science Assistants, but as the COV response noted, it is a difficult challenge for us given that few new FTEs or IPAs are made available.

Within the COV Template, the committee made several comments and recommendations; each is briefly discussed below.

A.1.2:
Noting that one program in the Division requires the PIs to receive permission to resubmit the same proposal three or more times, which may reduce the workload on both the program directors and the community of reviewers, ... The COV recommends that the Division consider whether a more uniform resubmission practices would be helpful to the community.

The Division has adopted a uniform practice regarding resubmissions. According to NSF policy, proposals that have not undergone significant revision will be returned without review. Program officers have found it helpful to both the program officer and to the PI to request that PI's provide a written statement, accompanying the second and subsequent resubmissions, detailing how the proposal has been modified in response to reviewer comments. In addition, all OCE programs are increasingly proactive in providing clear informal feedback, including advice about the advisability of resubmission.

A.1.4:
Noting that some panel summaries provided detailed information for the PIs, the quality of the panel summaries varied significantly within the Division. Some were rather cursory, uninformative, and unhelpful. The COV recommends that at panel meetings, detailed instructions be given both orally and in writing to panel members

on how to write the panel summaries, emphasizing the great value of the summaries to the PI in explaining the strengths and weaknesses of the proposals.

The opening portion of all OCE panels now includes instructions to panelists on preparing adequate summaries and asking panelists to put themselves in the position of the proponent PIs when writing the panel summaries. In addition, efforts are being implemented to have the summaries read by program officers as a quality check before final completion. However, NSF policy provides that all panel summaries must be drafted and approved by panelists themselves. A program officer summary of discussions is not allowed.

A.1.5:
The COV noted that the documentation of the quality of information and feedback provided to the PIs varied strongly within the Division.... (and) notes that documenting constructive feedback, especially to younger PIs, is vital. The COV recommends that greater standardization of the quality and completeness of feedback to PIs continue to be a high priority, though it is currently variable among the sections.

OCE management feels that this is a valid observation and a valid comment for a sub-set of e-Jackets that were reviewed – primarily from the early period under review. Measures have been and will continue to be taken to provide more uniform and comprehensive feedback. Following recommendations from the 2003 COV, a review analysis template was developed for general OCE use in documenting the review details, decision rationale, and final funding decision. The template was accepted and in some cases modified by all OCE programs. The overall template is constantly being improved, particularly to take into account the complexities of joint reviews. OCE Section Heads and the Division Director (who must approve the completeness and quality of the documentation) allow some latitude in the documentation preparation, but key elements of the template need to be completed and they will continue to monitor the quality of documentation.

A.2.1:
The COV emphasizes that intellectual merit must be the overriding criterion in funding decisions, and notes considerable improvement in addressing broader impacts since the 2003 COV, but recommends additional emphasis and guidance for PIs and reviewers on the broader impacts criterion.

NSF prepared a 5-page document on this topic, which is linked to the OCE section (under "Important Announcements") on the GEO web page. Broader impacts were also highlighted in an e-letter to our mailing list, and are the topic of an article for EOS, in preparation. It is an ongoing topic across the NSF and additional community guidance is expected during the next year. We will make additional efforts to bring this guidance to the attention of the community, for example, at NSF events at professional society meetings and site visits.

A.2.2:

Panel summaries address the intellectual merit review criterion but vary significantly in the degree to which they address the broader impacts criterion. Uniform guidance for panel reviewers on the review criteria could be incorporated into panel instructions to increase the consistency of the review process.

Broader impact response is part of the improved guidance and instruction given to panelists as described above in A.1.4.

A.3.1

The NSF requirement of a minimum of three mail reviews per proposal appears to be met based on our eJacket reviews. Specific statistics on the number of reviews per proposal were not available. It was noted that some proposals had the minimum of three, while other proposals had a significantly higher number of reviews. There also appeared to be an inconsistency in the number of reviews requested for each individual proposal.

Programs are responsible for ensuring that there are at least three external reviews and will continue to seek an appropriate number of substantive reviews from reviewers with appropriate expertise for each unique proposal. Programs work to strike a balance between assigning multiple reviewers and over-burdening the community with review requests. Programs typically ask for 6-7 reviews per proposal, with a higher numbers (8-10) for multi-disciplinary proposals and proposals dealing with topics for which there may not be broad panel expertise.

A.3.3

Did the program make appropriate use of reviewers to reflect balance among characteristics such as geography, type of institution, and underrepresented groups? Comments: There were insufficient data to evaluate this question.

The COV template notes that less than 35 percent of reviewers report their ethnicy, which is a voluntary choice. However, with the increased and almost exclusive use of electronically submitted reviews, we will work to obtain better information regarding the use of reviewers from US academic institutions, government labs, foreign countries, etc., to better provide the statistics for COVs.

A.4.2:

The trend of decreasing award size in the research sections may be symptomatic of a general concern of the COV that core funding is diminishing and not keeping up with inflation (this is discussed elsewhere in the report). Another concern is that OTIC has made large commitments in terms of the Ocean Observatories Initiative (OOI), etc. However, a substantially decreasing award size for OTIC may signal a problem.

We will analyze the award size statistics carefully for trends in decreasing award size. In the case of OTIC, a small number of large awards in 2003 and 2004 seem to have resulted in misleading data.

A.4.3:
The COV did not have the information to answer the question: Does the program portfolio have an appropriate balance of innovative/high-risk projects?

During the last few years the receptivity to SGER proposals by OCE was publicized as a way of indicating our receptivity to high-risk proposals. We agree with the COV observation that SGER grants are not as innovative/high risk as they are opportunistic; SGER awards are appropriate to fund as rapid response awards. OCE will pay attention to the outcome of discussions across NSF concerning ways to address the perception that the balance of awards is tilted toward more conservative projects.

A.4.4:
As suggested by the previous COV, it would be helpful if multidisciplinary proposals were coded.

OCE does have a coding for multidisciplinary proposals. However, its application is inconsistent across the Division, as is a working definition for multidisciplinary. Starting with proposals received in FY2007, OCE will code multidisciplinary proposals according to an agreed upon definition, to be developed beforehand.

A.4.11:
Participation of underrepresented groups is still inadequate in OCE, and less than in other scientific disciplines. Continued attentiveness to this issue is needed.

As the COV report points out, *OCE has been involved with and supported some innovative ways to address pipeline issues for underrepresented groups, for example with MPOWIR and GeoDiversity, and also ADVANCE, at universities where there are a large number of OCE PIs.* We believe that with these and other continuing efforts, participation of underrepresented groups will increase, and we will continue to look for opportunities to increase diversity in the Ocean Sciences.

A.5.4:
The COV Panel encourages more effective collaboration between the Division and Human Resources to provide consistent and comprehensive information to prospective IPAs. Additionally, the development of a mentoring program for new IPAs, including the production of a manual, would ensure maximum use of their time and expertise, and similar IPA training practices within the Division.

IPAs are an important part of OCE, and we agree that we need to recruit high quality individuals into these positions. OCE supports changes to some of the NSF-wide and federal-wide policies that discourage participation, as opportunities present themselves. For example, we support HRM's current efforts to facilitate "inboarding," including

development of an orientation program and a mentoring program and improvements to the program officer training course. The GEO Directorate now conducts a GEO-specific orientation program that responds to many training needs of new program officers. In the Division, we will develop an FAQ page for new IPAs that might be linked to announcements for IPA positions in OCE. It will point out common issues faced by IPAs and have direct links to the appropriate NSF web pages for information on per diem, travel, and IR/D. Also included will be a list of current and recent IPAs who have agreed to answer questions about their experiences and to provide advice to prospective IPAs. The Division will also ensure that mentoring relationships are developed for incoming IPAs and will consider the development of a manual.

Ocean Sciences Education would more logically be located with disciplinary science programs as opposed to the Integrative Program Section. The advantage to placing education within the disciplinary science program is to foster the integration of education and research.

Ocean Sciences Education is currently in the IPS Section for historical reasons. We concur with your view and we will seek to associate the Education Program with a research section when we have an opportunity to restructure

C.2:
Only proposals for the Ocean Education and Ocean Technology and Interdisciplinary Coordination programs, handling a small number of specialized proposals, were not taken to panel.

For purposes of clarification, all Ocean Sciences Education proposals are reviewed by panelists who submit mail reviews in advance of the panel.