CORE QUESTIONS and REPORT TEMPLATE
for
FY 2013 NSF COMMITTEE OF VISITOR (COV) REVIEWS

Guidance to NSF Staff: This document includes the FY 2013 set of Core Questions and the COV Report Template for use by NSF staff when preparing and conducting COVs during FY 2013. Specific guidance for NSF staff describing the COV review process is described in the "COV Reviews" section of NSF's Administrative Policies and Procedures which can be obtained at www.inside2.nsf.gov/od/oia/cov[1] .

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 (2) managerial matters pertaining to proposal decisions.

The program(s) under review may include several sub-activities 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 sub-activities 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.

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.

For section IV addressing portfolio balance the program should provide the COV with a statement of the program's portfolio goals and ask specific questions about the program under review. Some suggestions regarding portfolio dimensions are given on the template. These suggestions will not be appropriate for all programs.

Guidance to the COV: The COV report should provide a balanced assessment of NSF's performance in the integrity and efficiency of the ***processes*** related to proposal review. 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.*** The reports generated by COVs are made available to the public.

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.

[1] The COV Reviews section has three parts: (1) Policy, (2) Procedures, and (3) Roles & Responsibilities.

FY 2013 REPORT TEMPLATE FOR NSF COMMITTEES OF VISITORS (COVs)

Date of COV:

April 9-11, 2013 (covering FY10-12)

Program/Cluster/Section:

Atmosphere Section (AS)

Division:

Atmospheric and Geospace Sciences (AGS)

Directorate:

Geosciences (GEO**)**

Number of actions reviewed:

Awards: 303
Declinations: 87
Other:

Total number of actions within Program/Cluster/Division during period under review:

Awards: 585
Declinations: 567
Other:

Manner in which reviewed actions were selected:

All 1152 program jackets were available for COV review, as needed.

A subset of 390 representative jackets (34% of total actions) was highlighted by AS Program Directors and the Section Head, to the COV Members for evaluation based on the relevance of the information within the jacket to the questions posed to the COV Members in the COV Template.

Additional jackets, beyond those highlighted by AS Program Directors and the Section Head, were made available to the COV Members in response to specific requests by the COV Members for information.

The Atmosphere Section took advantage of NSF's e-business systems for COVs to create a web based version of the COV meeting materials. This allowed participants to access the COV data at a distance wherever they were and at their convenience for a period of three weeks.

The Section held a 90 minute-long group telecom for COV members and NSF staff on March 25, 2013 to: 1) explain the role of the COV; 2) clarify the NSF ethics requirements; 3) familiarize the COV Members with the NSF electronic system; 4) provide overviews of the science programs under review; and 5) review the data that was assembled for their evaluation of the Section activities.

This group telecom was followed, in one week's time, with individual virtual breakout group discussions between relevant Section Program Directors and their COV program counterparts to discuss specific programmatic data and issues.

A two-day period for in-person interactions was reserved for April 9-10, 2013. The meeting began at 9:00 AM on the 9th and ended by 5:00 PM on the 10th.

COV Membership

	Name	Affiliation
COV Chair or Co-Chairs:	Dr. Louise Kellogg Dr. John Farrell	UC Davis, Department of Geology US Arctic Research Commission
COV Members:	Dr. Peter Daum Dr. Sara C. Pryor Dr. Mingfang Ting Dr. Sumant Nigam Dr. Curt Stager Dr. Jean Lynch-Stieglitz Dr. Cynthia Twohy Dr. James Doyle	Brookhaven National Laboratory Indiana University Columbia University University of Maryland Paul Smith's College Georgia Institute of Technology Oregon State University Naval Research Laboratory

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(s) under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

I. Questions about the quality and effectiveness of the program's use of merit review process. Please answer the following questions about the effectiveness of the merit review process and provide comments or concerns in the space below the question**.**

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
1. Are the review methods (for example, panel, ad hoc, site visits) appropriate? **General comments**: Overall, current practices are indeed appropriate. The COV discussed the mix of approaches currently employed within the AS programs (i.e., use of panels, or relying primarily on mail reviews), and reviewed the advantages and disadvantages of both. The COV findings are as follows: 1. Large field programs generally receive sufficient and due consideration. 2. While the program managers should continue to have the flexibility to determine the optimal structure for proposal review, the COV noted an interesting specific case: during the last three years, the average return rate of mail reviews requested by the Paleoclimate Program (and AS) far exceeded that of NSF as a whole, which suggests that the scientific community associated with it is well engaged in the process and likely to provide high-quality evaluations. This lends support to the wider use of mail reviews relative to panels. 3. Ultimately, the talent, knowledge, and ability of the program officer (PO) are critical in assessing the reviews received (either from mail review and/or from panel discussions). The sense of the committee is that the POs are doing an excellent job in this regard. Proposals receive a high level of scrutiny by both reviewers and program managers and the process is very effective and of high quality. **Virtual panels**. The COV questions whether the proposed use of "virtual panels" (video conferencing, for example) are as effective as "face-to-face meetings" and, to this end, suggests further assessment of virtual meetings and their potential impacts. The COV thinks that this approach is less effective than traditional "face-to-face" meetings. The COV thinks that interactions and	Yes

relationship-building between panelists and the program manager are much better facilitated by "face-to-face" interactions than virtually so. The COV recognizes the greater financial cost of "face-to-face" meetings, but several members of the COV consider it good value. **Large and enduring awards**. The COV spent considerable time discussing the methodology NSF/AGS/AS uses to evaluate high cost initiatives and projects that may also endure for long time spans out of the AS core funding. By "high cost" we mean ~10% or more of a program's budget, and by "long" we mean over 5 years or more (through repeated awards). In short, the COV questioned whether current practices are adequate for awards that fall, in size and duration, between "traditional" awards (curiosity driven research by individual PIs or small teams at amounts less than about $500K) and the larger science and technology centers (e.g., a center of excellence). The COV encouraged NSF to consider: • Review and scrutiny beyond *ad hoc* mail reviews for such awards • Special call for proposals for such initiatives. • Keeping the management chain (e.g., Section Head and/or Div. Director) sufficiently involved, including in the early scoping stage when budget boundaries are laid out for large awards. • Document in the Review Analysis on why NSF did not consider it necessary to openly solicit proposals via a special call for large projects, to increase transparency. The COV recommends greater attention to awards of this type and an enhanced level of both internal and external review and consideration. **Data Source: Table I; Jackets**	
2. Are both merit review criteria addressed a) In individual reviews? b) In panel summaries? c) In Program Officer review analyses? Comments: The COV found that individual reviews, panel reviews, and especially PO review analyses effectively addressed both criteria. The COV notes that some reviewers concentrated more of their efforts on the "intellectual merit" criterion compared to the "broader impacts" criterion. This may reflect ongoing and long-standing confusion as to what is meant by "broader impacts" and how they are to be evaluated. COV recognizes efforts by NSF to clarify this, and encourages NSF to continue to provide information to PIs about the broader impacts criterion. Overall, the COV was impressed by the rigor of the reviewers and the POs. **Data Source: Jackets**	a. Mostly b. Yes c. Yes

3. Do the individual reviewers giving written reviews provide substantive comments to explain their assessment of the proposals? Comments: In a few cases (~5% of the time), comments were very brief. However,based on additional reviews, and the abilities of the program officers, the COV confirms that the selected proposals were indeed worthy of support. **Data Source: Jackets (Review tab in jackets)**	Yes
4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)? Comments: Most of the programs do not rely heavily on panels, but the experience of the COV has been that PIs have noted that the feedback received from panels and/or PO has been valuable. **Data Source: Jackets (Panel Summary tab in jackets)**	Yes
5. Does the documentation in the jacket provide the rationale for the award/decline decision? [Note: Documentation in the jacket usually includes a context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), program officer review analysis, and staff diary notes.] Comments: The COV found the “review analysis” to be thoughtful, clear, comprehensive, and most helpful to the COV (and likely to senior NSF management) in evaluating and documenting the decision process. The POs provide excellent analysis and synthesis of the reviews , especially when the decisions are not straightforward or easy. **Data Source: Jackets (Review Analysis (RA) tab in jackets)**	Yes

6. Does the documentation to the PI provide the rationale for the award/decline decision? [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 in the PO Comments field or emailed with a copy in the jacket, or telephoned with a diary note in the jacket) of the basis for a declination.] Comments: The COV recognizes and appreciates the value and significance of providing feedback to PIs on declined proposals. To the extent possible, the COV encourages sharing (in writing) appropriate elements of the review analysis with unsuccessful PIs (especially early career PIs), particularly on proposals that were viable, or "close to the line" in terms of being funded. . It was noted that some PO already engage in this practice. **Data Source: Jackets (Correspondence, Review, Panel Summary tabs)**	Yes
7. Additional comments on the quality and effectiveness of the program's use of merit review process: Overall, the COV finds the merit review process, and the manner in which it has been implemented, to be thoughtful, thorough, comprehensive, equitable, and constructive.	Yes

II. Questions concerning the selection of reviewers. Please answer the following questions about the selection of reviewers and provide comments or concerns in the space below the question**.**

SELECTION OF REVIEWERS	YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE
1. Did the program make use of reviewers having appropriate expertise and/or qualifications? Comments: The AS reviewers represented an appropriate cross-section of the AS community by age, sex, and expertise, and the information within the jackets indicated that a wide range of high-quality institutions was represented. As noted in Table 1, the return rates for requested reviews in AS exceeded those for NSF as a whole. While AS is already aware of this issue, the COV simply reiterates efforts to identify and use qualified non-US reviewers. NSF might remind PIs that when they suggest reviewers, they should also consider scientists that are not based in the US. NSF may also want to consider gaining access to membership lists of scientific societies including AMS and AGU in order to access broader pool of potential reviewers. NSF might want to take advantage of the newly constituted "Global Research Council" (GRC, www.globalresearchcouncil.org) that Dr. Subra Suresh helped initiate in 2012. See, for example: http://www.globalresearchcouncil.org/sites/default/files/pdfs/suresh-editorial01.pdf. The GRC has been formed to share best practices and encourage common principles. The GRC has focused on peer review, data sharing, research integrity, open access, and other issues. This forum would be an excellent opportunity for national leaders to encourage their respective POs to form their own international networks. Such networks could be tapped to identify and invite peer review from scientists based outside the US. **Data Source: Jackets (Form 7 + RA tab; reviews tab)**	Yes
2. Did the program recognize and resolve conflicts of interest when appropriate? Comments: COV found the program officers to be suitably vigilant. Further, the COV found that the conflicts are appropriately resolved.	Yes

Potential conflicts of interest (COI) occasionally arose due to the PO's relationship with the PI (or institution), or the COI became apparent during the review process. In all cases, these were handled appropriately. **Data Source: Jackets (Form 7 + RA tab)**	
Additional comments on reviewer selection: To improve the efficiency of the review process, the COV suggests implementing an automated system whereby potential reviewers are given a simple (and timely) procedure to accept or decline an invitation to review a proposal. Such a system would be similar to the web-based systems currently employed by peer-reviewed scientific journals. The COV recognizes and appreciates the effort of some program officers who directly email potential reviewers, asking whether or not they will agree to review a proposal. However, the COV thinks that rather than institutionalizing this practice, NSF as a whole should develop a tool or a system to automate confirmation of reviewers, and their intention. The COV also recommends that NSF send to reviewers, in a timely manner, automatic reminders to complete reviews. NSF may also consider partnering with professional organizations to identify prospective reviewers by sharing membership databases.	

III. Questions concerning the management of the program under review. Please comment on the following:

MANAGEMENT OF THE PROGRAM UNDER REVIEW

1. Management of the program. *(i.e., timeliness of decision-making, mortgage, etc.)*

Comments:

The programs are very well managed. Timeliness, dwell times, and the mortgage are all acceptable, given the resources and prevailing constraints.

The COV recognizes and appreciates the broad range of activities that the AS POs undertake within the NSF, beyond simply managing their portfolios. This factor is considered when assessing program management.

Within the limitations of the federal budget process, much of which is beyond the control of the NSF itself, the decisions were made quickly.

The COV observes no significant problems with dwell time or mortgages. Dwell times have increased slightly, likely due to the impact of ARRA funding and the increasing number of large field programs. Mortgages are clearly down.

Data Source: Fig. III. 1a. 1b. 1c.; Jackets (RA tab)

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

Comments:

Obvious support for emerging research and educational activities is through the **EAGER (**Early-concept Grants for Exploratory Research) and **RAPID** (Rapid Response Research) programs. PDM, for example, supported nine EAGER and three RAPID programs within the COV review period. These are generally small (<150K) awards, often supporting unique opportunities for field measurements or timely response to to unusual weather events (e.g. tornado outbreaks) or to potential environmental disasters such as the recent Gulf of Mexico oil spill. The POs have also demonstrated responsiveness in their selection of topics to be supported by standard awards. In addition, there are examples of support for new technologies and supplements to existing awards.

Importantly, the COV thinks that NSF Program Officer participation in workshops, conferences, and other scientific gatherings are essential ways in which POs keep abreast of new developments, novel ideas, and emerging issues. As such, the COV recommends greater financial support to enable participation by POs in such activities. In parallel, while generally operating in the background at such events, POs also have formal and informal opportunities to share information with the participating scientists and to interact with early career scientists, thus enriching the activity.

Data Source: Jackets (RA tab)

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio. *(i.e., NSF Strategic Plan, Administration priorities, USGCRP, NAS reports, Workshop and other community documents, NCAR plans and discussions, etc.)*

Comments:

The COV finds that the GEO/AGS program research portfolio is generally consistent with the recommendations in planning reports published by the federal government and by other entities, such as the National Academies. For example, as noted in the P2C2 solicitation, the US Global Change Research Program (USGCRP) recommends "fostering interdisciplinary research and synthesis of climate data" that seeks to "reduce uncertainties in future climate trajectory predictions." Paleoclimate research is inherently interdisciplinary, and both PCP and P2C2 successfully fulfill these stated aims. Further, ATC, PDM, and CLD have funded research to address key research needs suggested by the Intergovernmental Panel on Climate Change (IPCC) and other key, international organizations (e.g. International Energy Authority).

Data Source: RA tab; Program write-ups; PD discussions

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

Comments:

The COV finds that AS takes seriously the comments provided by prior COVs, and, in many cases, has implemented appropriate actions, such as constituting the “CAREER” panel focused on broader impacts. The 2010, 2011 and 2012 responses to the COV report were very thoughtful. Here is a brief précis of responses to what – in the COV’s opinion – were the major issues raised:

The COV does not agree with the recommendation of the prior COV to use different reviewers for Broader Impacts. We saw no lack of vigilance regarding this matter. AGS was responsive to the previous COV’s concerns and did a pilot study using a broader panel for CAREER awards where broader impacts are perhaps more complex to judge. The AGS has evaluated this approach and has good reasons not to continue it. We commend the due diligence of AGS in this matter.

AGS is very proactive with respect to inter-disciplinary programs, both within NSF, and in response to external initiatives like USGCRP. The COV thinks that this is appropriate, but cautions that NSF should continue to support cutting-edge fundamental science and not become fixated on big interdisciplinary, targeted RFPs. These are not always pathways to better science, and sometimes lead to large – higher overhead – science. Some on the COV thought that the mission-oriented federal agencies should be the primary source of targeted RFPs and that NSF should remain flexible and focused on basic, fundamental science that may not always require a team of experts drawn from a broad array of disciplines.

The previous COV recommends that each program establish a policy of having at least one full-time PO and one IPA at all times, to achieve this balance and ease transitions. This is a worthy idea that is almost impossible to achieve.

The COV agrees with the decision not to spread resources evenly across the programs. The “spread the peanut butter evenly” argument is unwise. There is no evidence to suggest that such an approach is necessary or prudent, and it smacks of false egalitarianism.

AGS could spend a lot of time and effort seeking to measure outcomes – and indeed does seem to

spend time reviewing outcomes. The COV did not see a single funded proposal that did not demonstrate, by use of annual reports, significant outcomes of AGS investments.

Data Source: Last COV report and annual updates

IV. Questions about Portfolio. Please answer the following about the portfolio of awards made by the program under review.

RESULTING PORTFOLIO OF AWARDS	APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE
1. Does the program portfolio link to the AGS Mission statement and the NSF strategic goals to "transform the frontiers" and "innovate for society"? Comments: The COV thinks that the emphasis of the program portfolio is appropriate because it addresses, among other things, air quality and climate, which are two fundamental and strategic issues. The COV also recognizes the portfolio's impact on career and professional development of the nation's workforce. The COV acknowledges the difficulty in assessing innovation, even qualitatively, but while we have not specific recommendation here, we encourage NSF to further consider this issue. **Data Source: Jackets; AGS Mission Statement**	Appropriate
2. Are awards appropriate in size and duration for the scope of the projects? Comments: Yes, in general the awards are appropriate in size and duration for the scope of the projects. For example the COV recognizes and appreciates that when there are collaborative proposals with multiple institutions, the Program Officers are proactively assessing the strengths of all participants and are responding appropriately in the decision-making process. We noted that AGS supports a few projects that are proportionately quite large (~10% of a program's portfolio) and in some cases have operated for more than 5 years (and at times for as long as 15-20 years through repeated awards). We encourage AGS to consider whether such projects (and the programs in which they reside) would benefit from a different solicitation and review process than the standard individual PI or small group awards. [See Section I(1) for more discussion on this topic] **Data Source: Fig. IV. 2a. 2b; Jackets (RA tab)**	Appropriate.

3. Does the program portfolio include awards for projects that are high risk, innovative, or potentially transformative? Comments: The PDM POs have a nicely balanced portfolio with several projects that could be considered high risk, innovative or potentially transformative. Some of these higher risk programs make use of new and emerging atmospheric science technology or innovative field programs and educational efforts that link to field campaigns. There is a number of EAGER and RAPID grants that could be considered in this high risk, innovative, or potentially transformative category.(see above comments regarding EAGER and RAPID (III(2)). **Data Source: Table IV.3.; Jackets (RA tab)**	Appropriate
4. Does the program portfolio include awards for inter- and multi-disciplinary projects? Comments: Yes, the COV notes that the number of interdisciplinary awards has increased, and hopes that this trend does not negatively impact smaller awards to individual investigators. The ATC program has jointly funded programs with other organizations within their directorate as well as with other government agencies. Such joint funding efforts are essential to the success of nearly all of the larger field efforts as no one agency has the financial or scientific resources to conduct these studies alone. Excellent examples iinclude the DC3 and Dynamo Campaigns, which illustrates the importance of interagency cooperation. **Data Source: Table IV.4; Jackets (RA tab) addressing science gaps, evidence of co-funding, partnerships, etc.**	Appropriate
5. Does the program portfolio have a geographical distribution of Principal Investigators? Comments: Yes. The distribution across the nation is uneven, in part a reflection of the distribution of universities with atmospheric science programs. **Data Source: Table IV. 5a, 5b.; Jackets; webpage links for each AS science program displays project funded in each by State.**	Appropriate

6. Does the program portfolio balance awards between different types of institutions? Comments: Yes. The AS programs fund both research and educational initiatives across a spectrum of different institutions, including: 4-year, masters, non-research intensive, and research-intensive programs. A reasonable balance is achieved amongst these institutions. **Data Source: Table IV.6; Jackets**	Appropriate
7. Does the program portfolio contain awards to new investigators? [NOTE: A new investigator is an investigator who has not been a PI on a previously funded NSF grant.] Comments: Overall, the percentage of awards to new investigators ranges from 39% to 48%, which seems appropriate and demonstrates a genuine effort to foster new investigators. **Postdoc Fellowship program**: The COV feels it's premature for our committee to assess the impact of this particular program. We noticed the level of funding is variable among programs. Possible pros of a postdoctoral fellowship program: gives the postdocs extra flexibility to pursue innovative research interests and collaboration. Enables family-flexible policies. Possible cons: cost to other programs, how to ensure that mentors are adequately engaged or that the postdoc has access to the resources available to carry out her or his research **CAREER**: The rate of funding for AGS is higher than average for GEO. The committee had a range of views on whether this is appropriate or not. The overall strengths and weaknesses of the CAREER program came under discussion. **Data Source: Table IV. 7a, 7b, 7c; Fig. IV. 7a, 7b; Jackets**	Appropriate
8. Does the program include projects that integrate research and education? Comments: Yes: The portfolio includes funding for REU, RUI, CAREER, summer institutes, workshops. Workshop funding in particular often goes to postdocs, students, and early career scientists. Overall, the emphasis on education in many of the proposals is strong. Some of the programs provide opportunities	Appropriate

for students to gain experience in the field as part of various measurement programs. **Data Source: Table IV.8; Jackets.**	
9. Does the program portfolio have participation of underrepresented groups[2]? Comments: The portfolio funds projects with women and minorities as PIs, but the number of proposals from underrepresented minorities remains low. The rate of funding of women PIs and co-PIs is in line with the overall average funding rate for AGS. Because co-PIs and PIs are lumped together in the statistics given, we cannot determine whether women PIs are as successful as AGS PIs overall. It might be useful to collect data on this matter. The COV suggests greater acknowledgement of the neglected group of "rural underserved populations." This would apply much wider than just this AGS section…(i.e., entire NSF). The COV suggests that there be a box to check on the proposal form, for this specific criterion. PIs from minority-serving institutions are being funded at an appropriate level. No information was available regarding success rates for PIs and co-PIs with disabilities. The COV recognizes that this and other data are difficult to collect. **Data Source: Table IV. 9a, 9b, 9c; Jackets**	Appropriate
10. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports. Comments: Yes. As an example, the COV noted that the PDM program is featured prominently in several NRC reports and the portfolio projects well on to a number of topics and recommendations from these NRC reports, which include "When Weather Matters" (NRC, 2010), "Observing Weather and Climate from the Group Up" (NRC, 2009), "Urban Meteorology" (NRC 2012), and "Weather Services for the Nation: Becoming Second to None" (NRC 2012).	Appropriate

[2] NSF does not have the legal authority to require principal investigators or reviewers to provide demographic data. Since provision of such data is voluntary, the demographic data available are incomplete. This may make it difficult to answer this question for small programs. However, experience suggests that even with the limited data available, COVs are able to provide a meaningful response to this question for most programs.

Data Source: Jackets (similar to questions in Section III)	
11. Additional comments on the quality of the projects or the balance of the portfolio: None beyond what already offered.	

OTHER TOPICS

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

   Paleoclimate funding is currently divided among several programs within NSF (AGS, OCE, EAR). However, only in AGS does Paleoclimate exist as a separate and permanent part of the program. P2C2 and its predecessors have been an effective mechanism for coordinating and prioritizing funding on problems that require approaches from all three disciplines. It seems that paleoclimate science as currently covered by P2C2 has been in existence for some time, and a stable funding mechanism for this inherently interdisciplinary field would reduce uncertainty in the community, increase efficiency at NSF and allow for more long range planning.

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.

Nothing more to add here.

Data Source: PD program write-ups, data

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

   As discussed under in Section I-7, the COV thinks that a more advanced software system should be implemented to automate the acceptance/declination of proposal reviewers and to monitor the timeliness of responses. This should aid the program officers, reduce the occurrence of excess reviewers, and improve the overall efficiency of the review process.

   The COV raised questions about the efficacy about the CAREER program and the POSTDOC program, and we suggest that NSF reevaluate its implementation. For example, what's the appropriate balance of activities aimed specifically at broader impacts (education) vs. research? Are the requirements of the program appropriate for the career advancement of CAREER awardees?

Data Source: COV analysis of AS performance, discussions with PDs, etc.

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

Nothing more to add here.

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

   The COV appreciated the new system developed and in place for this visit. Being able to review jackets in advance of meeting face-to-face, was most helpful and appreciated. Importantly, the

COV thinks that despite pressures to move towards virtual meetings, it's essential for the COV to meet in person at NSF, not only to work together, as a group, but also to have in-depth discussions with NSF staff. In fact, some COV members said that if the process were entirely virtual, they would choose not to participate.

Efficiency could have been improved by encouraging members of the COV to provide their initial written program reviews to the COV co-chairs in advance of the meeting. This would enable the co-chairs to consider, synthesize, and distribute the comments in advance of meeting face-to-face. This would foster a richer dialog.

The COV appreciates the quality and breadth of materials prepared by NSF staff for consideration by the COV. This enabled the COV to conduct an in-depth review and analysis. The COV also appreciated the time, effort, and sincere engagement with the POs and NSF staff.

SIGNATURE BLOCK:

Dr. Louise Kellogg Co-Chair
Dr. John Farrell, Co-Chair
For the Atmosphere Section (AS), GEO/AGS