

MAJOR RESEARCH INSTRUMENTATION: RESPONSE TO FINDINGS AND RECOMMENDATIONS OF THE COMMITTEE OF VISITORS

September 21-23, 2005

The Committee of Visitors (COV) met on September 21-23, 2005 at the National Science Foundation to assess the performance of the Major Research Instrumentation (MRI) program in two primary areas: (A) the integrity and efficiency of the program's processes and management, and, (B) results of the program's investment.

The Office of the Integrative Activities (which coordinated the COV) and the MRI Technical Coordinators are pleased that the committee ``*commends the National Science Foundation for the quality of the management of the Major Research Instrumentation Program, and for making effective investments that directly enable the scientific community and enhance the contributions of science to society*``. We are also very pleased that the committee has noted ``*The integrity and efficiency of the processes used for the proposal process is outstanding.*``

The COV has also identified and commented on a range of issues that can further improve both the process and the results of the program. These issues were discussed at length by NSF's Senior Management and by the MRI Technical Coordinators. The outcomes of these discussions and specific recommendations/actions are summarized below:

- **ISSUE: Review process - lack of uniformity across the Foundation and lack of transparency in some cases**

ACTION: The NSF-wide Technical Coordinators group discussed this problem at length, and has agreed to immediately adopt the following for all 2006 MRI proposal reviews:

All proposals received in the MRI program will have the same reviewer template, independent of the mode of review. The template will include the three review criteria used by the MRI program: intellectual merit, broader impacts and the management plan. All proposals reviewed by panel will use the same panel summary template that includes these three review criteria and requires that the reviewer list the strengths and weaknesses for all three criteria. It also requires that the panel include rationale for panel's final recommendation. In addition to the reviewer comments, the Program Director's (PD) comments summarizing the decision must be included in the feedback to the Principal Investigator (PI) in cases where: (i) there is no panel summary, (ii) the panel recommendation is overridden by the PD, or, (iii) the panel summary does not contain a sufficient level of detail. In addition, each PI will receive a context statement describing the

review process for the cognate division, the general MRI review procedures, and any other relevant information.

At the end of the FY 2006 MRI competition, a Foundation-wide evaluation of quality of feedback to the PI and jacket documentation will be conducted. The evaluation will involve representatives from all directorates/offices participating in the MRI program with the mandate to develop a set of guidelines for MRI proposal review, feedback to PI, and jacket documentation by the end of FY 06.

- **ISSUE: Broader impacts criterion**

Disparity on how the broader impacts criterion is used Foundation-wide

ACTION: The importance of the broader impacts criterion was reemphasized by developing and deploying a reviewer/panel template that requires the reviewers to address ***all MRI criteria*** (intellectual merits, broader impacts, and management plan) and to list the strengths and weaknesses for all. The reviewers also now have the ability to click on each criterion for specific instructions.

Outreach to the research and education communities on what is appropriate to include in an MRI proposal when addressing broader impacts

ACTION: We have added FAQs linked to the MRI solicitation to delineate the appropriate ways of addressing the broader impacts criterion. The specific question addresses all the recommended ways to address broader impacts, thus allowing the PI to select the most appropriate way(s).

- **ISSUE: Improving the clarity of the MRI program's expectations and transparency regarding proposal review**

Need to communicate what are good management plans

ACTION: The importance of the management plan and what is necessary to include was emphasized in the FY 2006 competition by explicitly including management plan evaluation as the third criterion in the MRI reviewer/panel summary template. This template was also posted in the FAQs accompanying the MRI program solicitation. In addition, one of the FAQs specifically addresses what is required in a good management plan.

Transparency regarding large proposal reviews

ACTION: One of the new items in the FAQs linked to the program solicitation specifically addresses the process utilized for the review of large proposals.

Need to clearly define ``what is a development proposal``

RESPONSE/ACTION: The issue of what is appropriate for a development proposal is currently being discussed by the technical coordinators and NSF personnel involved in running similar instrumentation/infrastructure programs. It is anticipated that the FY 2007 solicitation will include a more explicit definition of ``instrument`` and ``instrument development``.

- **ISSUE: Limits imposed by the solicitation**

Increase the number of proposals per organization

RESPONSE: The suggestion to increase of number of proposals per organization was carefully considered by the Technical Coordinators and the NSF's Senior Management. Both groups recognize the need of some organizations and, more importantly, some areas of science to have more opportunities to submit instrumentation proposals. However, the general feeling is that this issue should be revisited only if the funding allocation to the MRI program allows considering a significantly larger number of proposals.

Increase the cap on the requested amount

RESPONSE/ACTION: The issue of allowing the MRI program to receive requests larger than \$2M is being discussed by the NSF's Senior Management. Some resolution to this issue may occur before the 2007 competition.

Include cost of operations and maintenance

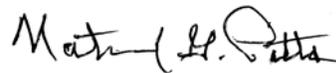
RESPONSE: The importance of support for operations and maintenance is recognized by the NSF staff. It is also recognized that the institutional commitment is crucial in ensuring that the instruments be utilized in the best possible way for research, research training, and education. Since the eligible cost (of the MRI program) and the cost-sharing requirements were changed only a year ago, the impact of these changes has not been evaluated. Changing the current policy on

operations and maintenance may be considered after the impact of these changes can be properly measured.

- **ISSUE: Evaluating program impact by requiring more reporting information from PIs.**

ACTION: The MRI Technical Coordinators are in the process of discussing the reporting requirements for the MRI program. As a first step, it is expected that the awards in FY 2006 will have specific requirements on what information is required for the annual and final reports.

We are extremely grateful to the COV members and to the chair of the COV, John Wooley, for their dedication, hard work, and thoughtful analysis. We believe that their report will enable the MRI program to better serve its community.



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