



UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

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PROGRAM ANALYSIS
DIVISION

August 26, 1982

B-208669

Dr. Jerome H. Fregeau, Director
Office of Audit and Oversight
National Science Foundation



119307

Dear Dr. Fregeau:

Subject: National Science Foundation (NSF)
Management Review of Research Grant
Award Recommendations (GAO/PAD-82-49)

As you know, we presented the results of our study of the NSF management review of research grant award recommendations on July 14, 1982. This letter summarizes our observations and proposals for improving this process, and the actions NSF plans in response to our briefing. NSF's response is included as enclosure I.

Our objective was to determine if the checks NSF has over the proposal evaluation process, as presently implemented, provide adequate accountability over program officer recommendations to award or decline proposals. According to NSF, these checks are:

- a review by higher level officials of program officer recommendations prior to the awarding or declining of a proposal;
- an appeal of a decision to decline a proposal through NSF's formal appeals process;
- a postaudit examination of a sample of proposal decisions by the Office of Audit and Oversight (OAO); and
- a periodic review of each program by advisory committees of external reviewers.

We reviewed the documentation contained in a randomly selected sample of proposals that were awarded, declined or withdrawn during a 6-month period; examined relevant circulars, manuals and reports; and interviewed appropriate NSF officials. We

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did not question the propriety of NSF's decisions to award or decline any of these proposals, nor did we assess the quality of the proposals.

MANAGEMENT'S PREAWARD REVIEW OF
AND EVIDENCE SUPPORTING
PROGRAM OFFICER RECOMMENDATIONS

There are no NSF guidelines which prescribe what reviewing officials should examine before concurring with program officer recommendations to award or decline proposals. Minimum requirements are necessary because reviewing officials exercise wide latitude in the manner and degree to which they review information pertinent to the evaluation of and the recommendation made on a proposal. The reviews of the officials we interviewed range from a thorough examination of all the important elements on which the recommendation is based to a casual review which in effect results in almost total reliance on program officer judgments.

NSF should establish minimum requirements for reviewing officials to examine before concurring with program officer recommendations to award or decline proposals so that these officials "determine the effectiveness of the review and the appropriateness of the recommendation," as a former NSF Director stated they can. We proposed that, at a minimum, the reviewing official verify:

- that a minimum number of adequate peer reviews were received on each of the most important criteria considered in reaching a recommendation;
- why all significant peer review comments contrary to the recommendation are either not relevant or how they have been taken into consideration; and
- the rationale for why the grant should be awarded or the proposal declined.

NSF agreed to implement this proposal.

To assure that these items can be verified by reviewing officials, we believe that all the information necessary to make these determinations should be documented and provided to them by the program officers. We found that the information forwarded sometimes lacks evidence on one or both of the following:

--That all significant peer review comments adverse to the recommendation were adequately considered. This occurred despite the fact that NSF regulations require that these adverse comments be discussed in the documentation.

--That appropriate qualified peer reviewers were selected and/or that an acceptable number of the peer reviewers adequately addressed each of the most important criteria specified by the National Science Board (NSB).

The information necessary to make the second determination is sometimes missing. NSF does not require a minimum number of adequate peer reviews on each of the criteria NSB has determined should be most strongly considered. In addition, for one of the criteria that NSB believes should be "vigorously applied in all research programs"--adequacy of available or obtainable instrumentation, preparatory data, and technical support--the instructions sent to potential peer reviewers in most of the directorates request that they discuss it "if appropriate."

We proposed that a minimum number of adequate peer reviews be required for each of the NSB criteria most strongly considered and that instructions sent to peer reviewers assure that the criterion mentioned above is vigorously applied in all research programs. NSF stated that its instructions will be revised to require justification for recommending action on the basis of fewer than the expected number of peer reviews, if less than three peer reviews are received. In addition, NSF stated that it will (1) determine what additional guidance should be provided to the NSF staff concerning the adequacy of a peer review and (2) review the instructions sent to peer reviewers in the various programs to determine what changes are appropriate.

SELECTION OF PEER REVIEWERS

Some NSF programs have and maintain lists of potential peer reviewers indexed by expertise, while others do not. Two problems can arise in the absence of having such indexed lists:

--New program officers will not receive the benefit of the information that the preceding program officers have accumulated.

--Program officers could overlook reviewers who may have provided the most informed comments on proposals.

We believe that when program officers select peer reviewers they should at least begin the selection process with the aid of lists of potential peer reviewers, indexed by expertise. NSF agreed to study our proposal that it require each program (or group of programs where the same peer reviewers are used) to establish and maintain these indexed lists.

CHECKS FOR POSSIBLE DUPLICATE FUNDING

NSF lacks clear guidelines for implementing its policy that program officers should check to determine whether any proposal NSF is considering funding is also receiving improper duplicate funding from another source. The documentation that is presently required by NSF regarding potential duplicate funding is not uniformly being provided. Reviewing officials in the directorates and the Division of Grants and Contracts are not consistently ensuring that the required documentation is provided.

We proposed that NSF develop more explicit guidelines for checking whether any proposal it is considering funding is also receiving improper duplicate funding from another source, and that reviewing officials ensure that these checks have been accomplished. NSF agreed to revise its instructions on checking improper duplicate funding. NSF stated that the revised instructions will require explicit comment on an investigator's other current or potential sources of support and will encourage appropriate contact with other agencies. NSF also agreed to require reviewing officials to check that program officers document their review in cases where there is potential duplication.

OAO POSTAWARD REVIEW

OAO sometimes requests a response from a directorate concerning a specific problem in the course of its postaward review. At the time of our review, OAO did not maintain a separate listing of proposals on which responses were requested. After speaking with us on this subject during our review, OAO agreed that its informal system was not adequate and implemented a formal follow-up system.

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We appreciate the cooperation NSF gave us during our study. We ask that you keep us informed of the actions NSF takes regarding the points discussed in this letter because we plan to follow NSF's progress in these areas. Copies of this letter are being

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sent to the Director and Deputy Director, NSF; Dr. Peter Wilkniss, Senior Science Associate, NSF; and Mr. Robert B. Boyden of your office. If you have any questions or wish to discuss these matters, please call Robert Cavanaugh on (202) 275-4633.

Sincerely yours,



Osmond T. Fundingsland
Associate Director
Science and Technology

Enclosure

WASHINGTON, D.C. 20550

nsf

July 29, 1982

OFFICE OF AUDIT
AND OVERSIGHT

Mr. Osmund T. Fundingsland
Associate Director
Program Analysis Division
General Accounting Office
Washington, D. C. 20548

Dear Mr. Fundingsland:

Thank you for the opportunity to comment on a draft of your letter report entitled, "NSF Management Review of Research Grant Award Recommendations." We are pleased to note that you found nothing seriously wrong and appreciate your suggestions for improving our system. Your seven recommendations are discussed in the following paragraphs:

- I(a) --Establish minimum requirements for NSF reviewing officials to examine before concurring with program recommendations to award or decline proposals. At a minimum, the reviewing officials should verify:
- That a minimum number of adequate peer reviews (to be determined by NSF) were received on each of the most important criteria, and which of the peer reviewers addressed each of these criteria;
 - Why all significant peer review comments that are contrary to the program officer recommendation are either not relevant or how they have been taken into consideration;
 - The rationale for why the grant should be awarded or the proposal declined.

We agree that it would be useful to include wording along the lines which you suggested in NSF Circular No. 76, "Review and Approval of NSF Awards," and will do so.

- Establish a minimum number of adequate peer reviews necessary in the review of a proposal on each of the most important criteria.

The objective of the external peer review system is to obtain sufficient information so that our staff can, with confidence, make a decision. We will incorporate into our instructions a requirement that, if less than three reviews are obtained, a justification for recommending action on the basis of fewer than the expected number is to be given. The question of adequacy of a

review is a matter of professional judgment. We will study this aspect further to determine what additional guidance to the staff is appropriate. In this respect, I note that the external oversight reviews conducted by our Advisory Committees, or equivalent, are requested to comment on the adequacy of the reviews and have voiced few criticisms on this point.

- Revise the instructions sent to peer reviewers to assure that the criterion "adequacy of available or obtainable instrumentation, preparatory data and technical support" is "vigorously applied in all research programs."

We use a number of different letters of instruction to reviewers, adapted to the needs of different programs. We will review these letters to determine what changes in the text are appropriate. I note, however, that the phrase cited in your recommendation is not applicable in some cases, such as most mathematics research, and that in other cases, the adequacy of instrumentation is sufficiently obvious to our program staff that additional reviewer comment is superfluous. This criterion for selection is most important, and reviewer comments on this aspect most likely, when something is missing, rather than when instrumentation, etc., is adequate.

- Require that each program (or group of programs where the same peer reviewers are used) establish and maintain current lists of potential peer reviewers indexed by areas of expertise.

As you have noted, most programs have a listing of reviewers, but a few do not. Our Management Information System (MIS) now includes a capability for such reviewer files which many programs use. We are well into the design of an updated MIS which will have an improved capability of this type. We will study this aspect of our operation to determine what requirements should be placed on program officers with respect to reviewer files. Any changes to our current practices must, of course, be in conformance with the Privacy Act.

- Require that contact be made with officials from the source funding or considering funding the potential overlap to assure that duplicate funding does not occur. Contacts should be documented by a note describing the outcome of each discussion on the subject.

The determination of the existence of overlap is a matter for professional judgment, taking into account, inter alia, the distinction between joint funding and improper duplication of support, a distinction which we know you recognize. Contact with other agencies is not needed in every case; some circumstances are clear without it. We will modify our instructions to the staff to require explicit comment on other current or potential support of an investigator when an award is recommended, and to encourage contact with other agencies as appropriate with the brief documentation of such contact.

- Require reviewing officials to check that program officers documented their review in cases where there is potential duplication.

See I(a) above.

--Establish a follow-up system to assure that timely responses are received when requested.

When your staff inquired into this point early in the study, we recognized that the informal system which we were then using was not adequate. A formal system has been in place for some time.

Thank you again for the opportunity to comment and for your assistance in improving our operations. If I can provide further information, please let me know.

Sincerely yours,



Jerome H. Fregeau
Director, Office of
Audit and Oversight