

**Memorandum**

Date JUL 28 1992

From Richard P. Kusserow
Inspector General *Bryan Mitchell*

Subject Results of Interviews with Principal Research Investigators
Concerning the National Institutes of Health's Award Process
(A-06-92-00050)

To James O. Mason, M.D., Dr. P.H.
Assistant Secretary for Health

Attached is a management advisory report which provides you with the results of our interviews conducted during 1991 with 94 Principal Research Investigators (PI) at 39 colleges and universities throughout the United States concerning the National Institutes of Health's (NIH) award process.

The PIs generally supported NIH's award process. However, 80 percent of the PIs interviewed suggested improvements. These PIs identified four general areas of concern. They believe that:

- o NIH's funding priorities are often targeted toward predetermined areas of research rather than being based on scientific merits of proposals;
- o NIH's application and review process takes an inordinate amount of time and effort to complete;
- o there is an absence of feedback from NIH; and
- o indirect costs of research have questionable value.

We believe that the information we obtained through interviews with PIs provides NIH with some valuable insights into concerns over the administration of research awards. This feedback should help NIH identify areas for further study and review.

Page 2 - James O. Mason, M.D., Dr. P.H.

Should you wish to discuss this report, please call me or your staff may contact Daniel W. Blades, Assistant Inspector General for Public Health Service Audits, at (FTS)443-3582.

Attachment

CC:

Bernadine P. Healy, M.D.
Director
National Institutes of Health

Arnold R. Tompkins
Assistant Secretary for
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Department of Health and Human Services

**OFFICE OF
INSPECTOR GENERAL**

**RESULTS OF INTERVIEWS WITH
PRINCIPAL RESEARCH INVESTIGATORS
CONCERNING THE NATIONAL
INSTITUTES OF HEALTH'S AWARD
PROCESS**



Richard P. Kusserow
INSPECTOR GENERAL

A-06-92-00050

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From Richard P. Kusserow
Inspector General *For Bryan Titler*

Subject Results of Interviews with Principal Research Investigators
Concerning the National Institutes of Health's Award Process
(A-06-92-00050)

To James O. Mason, M.D., Dr. P.H.
Assistant Secretary for Health

This management advisory report provides you with the results of our interviews conducted during Calendar Year (CY) 1991 with 94 Principal Research Investigators (PI) at 39 colleges and universities throughout the United States. The objective of this review was to obtain a cross section of opinions from PIs on: (1) the National Institutes of Health's (NIH) award process for funding research; and (2) alternative approaches to funding research.

The PIs generally supported NIH's award process. However, 80 percent of the PIs interviewed suggested improvements. These PIs identified four general areas of concern. They believe that:

- o NIH's funding priorities are often targeted toward predetermined areas of research rather than being based on scientific merits of proposals;
- o NIH's application and review process takes an inordinate amount of time and effort to complete;
- o there is an absence of feedback from NIH; and
- o indirect costs of research have questionable value.

With regard to alternative approaches to funding research, exactly one-half of the PIs supported indirect cost caps. However, regarding the desirability of funding research through block grants or requiring mandatory institutional cost sharing, the PIs voiced substantial disagreement. The PIs generally agreed that these proposals would hinder research and make the entire process of funding research more political. Although most PIs interviewed supported NIH and its award process, the number and diversity of comments received indicated that improvements are needed to fully utilize NIH's limited research funds. We believe that these comments provide some insight into the thoughts of PIs and

what they perceive as problems in the administration of research projects. This report does not draw conclusions or make recommendations. Rather, it is intended to provide NIH management with a body of knowledge which will help it identify areas where NIH may want to focus additional study and review.

BACKGROUND

The NIH awarded approximately \$6 billion in health research and development during Fiscal Year 1989. Domestic institutions of higher education received approximately 74 percent or \$4.4 billion of the NIH awards. Of the \$4.4 billion, colleges and universities for which the Department of Health and Human Services has audit cognizance, received \$3.9 billion.

Forty-four major universities received about 70 percent of the \$3.9 billion. These 44 universities were awarded 11,453 research projects during CY 1989. Each research project has a PI who is responsible for the research and administrative activities under the project.

OBJECTIVES AND METHODOLOGY

The objective of our review was to obtain a cross section of opinions from PIs on: (1) the NIH award process and (2) alternative approaches to funding research. On a related Office of Inspector General (OIG) review titled, "How NIH Research Funds Were Used at Universities throughout the United States (A-06-91-00073)," we had designed a statistical sample to select 100 research projects. We selected the PIs to be interviewed from this sample of 100 research projects.

Our sample universe was comprised of 11,453 awards to 44 major colleges and universities during CY 1989. From the 11,453 awards, we selected 100 research projects for review. These 100 research projects were awarded to 39 institutions and totaled \$18,514,980. We visited the 39 institutions and interviewed the PIs for the selected research projects. We were able to interview 94 of the 100 PIs selected (6 PIs were not available during the time we were at the institutions).

Their experience as PIs ranged from 2 to 35 years. Sixty-two of the 94 had been a PI for over 10 years and 31 had over 20 years of experience. Also, 55 of the 94 PIs were responsible for more than 1 Federal research project and 35 had been a PI at another institution.

Our interviews followed a survey instrument which was designed to obtain the PIs' opinions in the following areas:

- o NIH's award process;
- o capping indirect costs;
- o funding research through block grants; and
- o requiring mandatory institutional cost sharing for research.

Our review was conducted during the period June 1, 1991 through December 31, 1991. (See Appendix A for a listing of institutions visited).

RESULTS OF REVIEW

Our evaluation of the PIs' responses indicated that generally they were supportive of NIH's award process. Although supportive of NIH, 76 of the 94 PIs interviewed offered suggestions for improvement. These PIs identified several areas of concern with NIH's practices for funding research. These included:

- o NIH's funding priorities are often targeted toward predetermined areas of research rather than being based on scientific merits of proposals;
- o NIH's application and review process takes an inordinate amount of time and effort to complete;
- o an absence of feedback from NIH; and
- o indirect costs of research have questionable value.

With regard to whether or not PIs favored capping indirect cost rates, 47 of the 94 supported such caps. However, in response to our questions regarding the desirability of funding research through block grants or requiring mandatory institutional cost sharing, the PIs voiced substantial disagreement. Most PIs stated that both of these proposals would hinder research and make the entire process of funding research more political. (For a complete tabulation of the responses, see Appendix B).

NIH FUNDING PRIORITIES

The PIs identified the following three major concerns with NIH priorities for funding research: (1) downward adjustments in proposed research projects; (2) funding targeted areas of research instead of funding the best research projects; and

(3) the relative small proportion of funds awarded to less experienced PIs.

Downward Adjustments in Proposed Research

Downward adjustments in the amounts of proposed research projects were cited by 16 PIs as an area of concern. Several believed that these cuts in proposed projects were not justified. Also, these PIs stated that often the research project is reduced with no corresponding reduction in the scope or magnitude of the research. The following are examples of PI comments in this area:

- o A PI at the University of Michigan stated that the peer reviewers make cuts of 8-25 percent from budgets that they acknowledged contained "no fat." However, the research work plan was not reduced, making it difficult to reach the planned goals and objectives.
- o A PI at the University of Minnesota commented that annual cuts of the previously approved and recommended budget, often 15 to 18 percent, make planning and conducting research, as approved, impossible.
- o A PI at the University of Arizona stated that he has concerns about the funding committee reducing the research project budget after the research project has received approval based on its scientific merit and proposed budget. He believed that the reduction in funds was arbitrary and had no relationship to the quality of the research.

Predetermined Targeted Areas

Another area of concern among the PIs interviewed was their perception that NIH often makes funding decisions based on predetermined targeted areas of research rather than on the scientific merits of the individual proposals for research projects. Thirteen PIs identified this as an area needing improvement. Following are two examples of the PIs comments:

- o A PI at Harvard University commented that targeted research, where predetermined amounts of money are made available in one area, result in low quality projects getting funded. He stated that funding predetermined amounts in targeted research areas without regard to the quality of the projects results in the failure to fund higher quality projects in other areas.

- o A PI at the University of Southern California stated that research in areas that are "hot" topics are funded even though the research may be of lesser quality than other projects. He stated that, for example, a high percentage of research projects dealing with AIDS get funded compared to other quality non-AIDS projects.

Need for Awarding More Small Research Projects to Less Experienced PIs

A third area of concern dealt with the need for awarding more small research projects to less experienced PIs. Nineteen PIs believed that this is an area that NIH needs to consider to ensure that young PIs remain in research. Typical comments included:

- o A PI from Boston University stated that a way to improve the award process involves "...limiting the size of the research project--possibly through direct cost caps." He believed that this would result in more research projects being funded at smaller amounts. He is concerned that the lack of funding may discourage individuals from becoming scientists and researchers and would have a negative impact on the competitiveness of this country.
- o A PI from the University of Alabama at Birmingham stated that he believed NIH should fund more applications from younger less experienced PIs when the projects have merit. He stated that this would stimulate competition and give the younger PIs an incentive to submit additional applications.

NIH APPLICATION, REVIEW AND APPROVAL PROCESS

The PIs interviewed indicated two primary concerns with the application review and approval process. These concerns were: (1) the effort and length of time it takes to get a research project proposal to NIH and reviewed; and (2) the absence of reviewer objectivity and specific knowledge at NIH.

Time and Effort to Get an Application Reviewed

Eighteen PIs expressed dismay over the time and effort it takes to get an application reviewed and a decision made on its funding. Many stated that the overall system needs to be streamlined. Typical comments included:

- o A PI from the University of Pennsylvania stated that a quicker turn around time on the peer review would be helpful. The PI indicated that 9 months is too long to approve or reject a research project proposal.
- o A PI from Virginia Commonwealth University stated that the award process should be streamlined. The PI stated that the study section of the award process takes too long.
- o A PI from the University of Wisconsin commented that NIH should make renewals less cumbersome. This PI estimated that a PI spends 30 to 40 percent of his time writing research proposals.
- o A PI from the University of Chicago stated that the process should be streamlined. The PI stated that too many pounds of paper must be submitted. He further stated that writing research proposals becomes a major activity and takes the PI away from the laboratory.
- o A PI from Washington University at St. Louis stated that the proposal process needs to be simplified, less detailed. The PI stated that proposals are too long and require too much paper.
- o A PI from the University of California, Berkeley, stated that it takes at least 150 hours to complete a research proposal, not the 10-15 hour estimate on the NIH application.

Objectivity and Appropriateness of NIH Reviewers

The second concern voiced was the objectivity and appropriateness of the reviewers at NIH who make funding decisions. Although, in general, PIs were supportive of NIH's peer review process, 22 PIs questioned various aspects of the review process. For example:

- o A PI at Johns Hopkins University stated that the review process is somewhat biased towards approving more recognized researchers and therefore excludes younger, less experienced PIs.
- o A PI at the Baylor College of Medicine stated that it was his opinion that politics and favoritism often plays too prominent a role in the review process.

- o A PI at the University of California, San Diego, stated that he has noted that there is a lack of quality in the peer review section of the award process. This PI believed that there is not enough expertise in some of the peer review sections to evaluate the project effectively.
- o A PI at the University of California, San Francisco, stated that there is some breakdown in the study section. As a result, "Bad grants may be funded because the PI is known but the grant may not be doing the kind of science NIH wants."

FEEDBACK FROM NIH

Another area of concern was the absence of feedback from NIH. Fourteen PIs stated that little feedback is received from NIH, especially with regard to the ongoing activity and progress of their research project. For example:

- o A PI from the University of Pennsylvania stated that he does not get any feedback. He went on to say that he sends progress reports to NIH and does not receive any comments. He stated that he would like to have some input from NIH regarding his ongoing work.
- o A PI from Case Western Reserve University stated that very little verbal or written feedback was received from NIH. This PI stated that it would be helpful if NIH would acknowledge that progress reports have been read, accepted, and approved.

INDIRECT COSTS

In general, PIs expressed concern with the amount of indirect costs being charged to their projects and its value to research. Of the 94 PIs interviewed, 47 supported indirect cost caps, 36 opposed such caps and 11 had no opinion. Seventeen PIs voiced specific suggestions regarding indirect costs. Typical comments included:

- o A PI at Mount Sinai School of Medicine stated that NIH should make overhead rates more realistic and grantees more accountable for indirect costs.
- o A PI from Johns Hopkins University stated that in the future building costs should not be allowed in the indirect cost rates.

- o A PI at Duke University stated that he favors a standardized indirect cost rate across the board. He warns that controls would be needed to ensure that indirect costs are not reclassified as direct costs.
- o A PI at the University of Utah stated that NIH needs to ensure that the money Congress appropriates to support research is spent in support of research. He stated that this means developing better oversight for the indirect costs allocated to research.

As alternatives to the present method of funding research, we asked two specific questions about the desirability of funding research through block grants or requiring mandatory institutional cost sharing. The PIs voiced substantial disagreement with both these alternatives. An overwhelming 82 of the 94 PIs, stated that they were not in favor of funding research through block grants. Also, 67 of the 94 stated that requiring mandatory institutional cost sharing would hinder research. The PIs commented that these proposals would make the process of funding research more political.

OIG OBSERVATIONS

Although most PIs interviewed expressed support of NIH and its award process, the number and diversity of comments received indicate that improvements can be made to help make optimum use of NIH's limited research funds. We believe the PI opinions expressed in this report should provide NIH with some insight into what the PIs perceive as problems. It should also help NIH identify areas that need more detailed study or review.

LISTING OF 39 COLLEGES AND UNIVERSITIES VISITED

BOSTON UNIVERSITY
UNIVERSITY OF MASSACHUSETTS MEDICAL CENTER AT WORCESTER
HARVARD UNIVERSITY
YALE UNIVERSITY
NEW YORK UNIVERSITY MEDICAL CENTER
ROCKERFELLER UNIVERSITY
YESHIVA UNIVERSITY
MT. SINAI SCHOOL OF MEDICINE
VIRGINIA COMMONWEALTH UNIVERSITY
UNIVERSITY OF VIRGINIA
JOHNS HOPKINS UNIVERSITY
UNIVERSITY OF PITTSBURGH
UNIVERSITY OF PENNSYLVANIA
UNIVERSITY OF MIAMI
VANDERBILT UNIVERSITY
UNIVERSITY OF NORTH CAROLINA CHAPEL HILL
UNIVERSITY OF ALABAMA AT BIRMINGHAM
DUKE UNIVERSITY
EMORY UNIVERSITY
OHIO STATE UNIVERSITY
CASE WESTERN RESERVE UNIVERSITY
UNIVERSITY OF WISCONSIN AT MADISON
UNIVERSITY OF CHICAGO
UNIVERSITY OF MINNESOTA
UNIVERSITY OF MICHIGAN
UNIVERSITY OF TEXAS M.D. ANDERSON CANCER CENTER
BAYLOR COLLEGE OF MEDICINE
UNIVERSITY OF UTAH
UNIVERSITY OF COLORADO HEALTH SCIENCE CENTER
UNIVERSITY OF IOWA
WASHINGTON UNIVERSITY AT ST. LOUIS
UNIVERSITY OF WASHINGTON
UNIVERSITY OF SOUTHERN CALIFORNIA
UNIVERSITY OF ARIZONA
UNIVERSITY OF CALIFORNIA, BERKELEY
UNIVERSITY OF CALIFORNIA, DAVIS
UNIVERSITY OF CALIFORNIA, LOS ANGELES
UNIVERSITY OF CALIFORNIA, SAN DIEGO
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

SUMMARY OF PRINCIPAL INVESTIGATORS RESPONSES
TO SURVEY INSTRUMENT

We collected responses from 94 PIs at 39 universities. These 94 were the PIs on 94 NIH research projects.

- These PIs have from 2 to 35 years of experience as PIs. Sixty-two of the 94 have had 10 or more years of experience as a PI and 31 have had over 20 years of experience.
- Fifty-five serve as PIs on more than one Federal research project.
- Thirty-five have been a PI at another institution.

Our questions and the PI's responses to those questions are summarized below:

1. Are NIH research projects adequately monitored by NIH to ensure project objectives are met?
 - 84 answered yes,
 - 4 answered no, and
 - 6 answered that they did not know.
2. Are NIH research projects adequately monitored by the university to ensure project objectives are met?
 - 72 answered yes,
 - 19 answered no, and
 - 3 answered that they did not know.
3. Are NIH award expenditures adequately monitored by NIH?
 - 73 answered yes,
 - 4 answered no, and
 - 17 answered that they did not know.

4. Are NIH expenditures adequately monitored by the university?
 - 92 answered yes, and
 - 2 answered that they did not know.
5. Are university restrictions placed on the PIs to preclude funds from being transferred between cost categories?
 - 38 answered yes,
 - 55 answered no, and
 - 1 answered that he did not know.
6. Are university restrictions placed on the PIs to preclude the transfer of funds between research projects?
 - 74 answered yes,
 - 9 answered no, and
 - 11 answered that they did not know.
7. Would mandatory cost sharing promote or hinder research?
 - 14 answered promote,
 - 67 answered hinder, and
 - 13 answered that they did not know.
8. Is the method of using a university wide indirect cost rate to fund indirect costs beneficial or harmful in promoting research?
 - 46 answered beneficial,
 - 19 answered harmful, and
 - 29 answered that they did not know.

9. Would you support across the board indirect costs caps?
 - 47 answered yes.
 - 36 answered no, and
 - 11 answered that they did not know.
10. Are you in favor of funding research through block grants?
 - 6 answered yes,
 - 82 answered no, and
 - 6 answered that they did not know.
11. Do you believe the NIH award process is effective?
 - 87 answered yes,
 - 6 answered no, and
 - 1 answered that he did not know.
12. Are you aware of a research project that should have been funded but was not?
 - 81 answered yes, and
 - 13 answered no.
14. Are you aware of wasteful practices regarding NIH funded research?
 - 24 answered yes,
 - 68 answered no, and
 - 2 did not respond.
15. Do you have any suggestions for improving the NIH award process?
 - 76 had suggestions, and
 - 18 had no suggested improvements.