**NSB/MR-96-15**

# National Science Board and National Science Foundation Staff Task Force on Merit Review

## Discussion Report

**November 20, 1996**

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- **DR. MARTA CEHELSKY**, Executive Officer

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***** Member, Executive Committee

****** NSB nominee pending U.S. Senate confirmation

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# Members of the Task Force

*National Science Board Members*

Dr. Warren M. Washington, Chair

Dr. Shirley M. Malcom

*National Science Foundation Staff*

Dr. Mary E. Clutter

Dr. John B. Hunt

Mr. Paul J. Herer,

Executive Secretary

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# National Science Board and National Science Foundation Staff Task Force on Merit Review Discussion Report

## I. Context of the Report

The merit review process is the modus operandi for the evaluation of proposals at the National Science Foundation (NSF). While almost all of the 30,000 proposals submitted to NSF annually undergo external merit review, NSF has the resources to fund only about one third of them. NSF receives over 170,000 reviews each year to help evaluate these proposals. Through the use of merit review, NSF seeks to maintain its high standards of excellence and accountability for which it is known around the world.

In 1981, the National Science Board (NSB) adopted four generic criteria for the selection of research projects, titled: (1) research performance competence, (2) intrinsic merit of the research, (3) utility or relevance of the research, and (4) effect of the research on the infrastructure of science and engineering. (A detailed description of these criteria may be found in Appendix A.) Because education programs had been eliminated from the budget at that time, the 1981 criteria addressed only research proposals. In the 1980s, they were adapted to suit education programs as those were reestablished.

Also, since 1981, the portfolio of projects solicited and supported by NSF has expanded to include, among other things, broad education initiatives and focused center-based activities. Further, the NSF Strategic Plan (NSF 95-24) embraces new long-range goals and core strategies, and the Government Performance and Results Act (GPRA) emphasizes the importance of linking NSF's goals and strategies to the results of its portfolio of investments in science and engineering. In light of these changes, an assessment of the appropriateness of the NSB criteria seems warranted.

At its May 1995 meeting, the NSB stated that re-examining the criteria in light of the new Strategic Plan was a matter of high Board interest. Subsequently, an NSF staff task group on review criteria, formed by the Deputy Director, found that the criteria are unevenly applied by reviewers and NSF staff in the proposal review and selection process, and reported that, "The NSB criteria are in need of clarification and should be rewritten." The task group also recommended that options be explored for more effective application of the criteria.

In May 1996, the Board established the NSB-NSF Staff Task Force on Merit Review, and charged it with examining the Board's generic review criteria and making recommendations on retaining or changing them, along with providing guidance on their use. This paper presents the Task Force's deliberations and findings. It is not intended as a final set of recommendations but as a means of stimulating discussion within and outside of the Foundation.

## II. Task Force Membership and Activities

The Task Force has the following membership:

*National Science Board Members*

Dr. Warren M. Washington, Chair
Senior Scientist, Climate and
Global Dynamics Division
National Center for Atmospheric
Research
Boulder, Colorado

Dr. Shirley M. Malcom
Head, Directorate for Education and
Human Resources Programs
American Association for the
Advancement of Science
Washington, D.C.

*National Science Foundation Staff*

Dr. Mary E. Clutter
Assistant Director for Biological Sciences

Dr. John B. Hunt*
Acting Assistant Director for
Mathematical and Physical Sciences
* replaced Dr. William Harris

*Executive Secretary*

Mr. Paul J. Herer,
Senior Advisor for Planning and
Technology Evaluation
Directorate for Engineering

The Task Force met several times for extensive discussions, and reviewed a number of previous studies, surveys and reports, including the following:

1. *Criteria for the Selection of Research Projects by the National Science Foundation,* adopted by the National Science Board at its 228th meeting on August 20-21, 1981.
2. *Federally Funded Research: Decisions for a Decade.* U.S. Congress, Office of Technology Assessment (1991).

3. *The Track Record of NSF Proposal Review: Reviewers Rate the Process.* NSF Program Evaluation Staff and Science Resources International (SRI) (1991).

4. *Peer Review. Reforms Needed to Ensure Fairness in Federal Agency Grant Selection*, United States General Accounting Office (1994).
5. *Report of the NIH Committee on Improving Peer Review* (1996).
6. NSF Proposal Review Project Reports (1996, by internal teams):
    - *Task Group on Review Criteria* (P. Stephens, Chair)
    - *Task Group on Review Variations* (D. Schindel/D. Chubin)
    - *Task Group on Calibration and Disaggregated Ratings* (C. Eavey)

**III. Current Criteria and Their Use**

The four generic criteria established by the NSB in 1981 for the selection of projects are: 1) research performance competence, (2) intrinsic merit of the research, (3) utility or relevance of the research, and (4) effect of the research on the infrastructure of science and engineering. For reference, the full NSB guidance for these criteria are provided in Appendix I .

The table below summarizes the results of two surveys and highlights some of the problems with the current criteria from two different perspectives.

- A cross-section of reviewers in a 1991 NSF/SRI survey (first column) considered the first two NSB criteria (intrinsic merit and PI competence) to be considerably more important than the last two. Less than half of the respondents said they usually commented on all four criteria; as many as 20% said they ignored the NSB criteria altogether.

- A 1995 electronic survey of NSF program officers (P.O.) in 35 divisions on reviewer responsiveness (second column) revealed that program officers experience difficulty in obtaining useful input from reviewers with respect to criterion 3 (utility/relevance) and criterion 4 (infrastructure)

**Perceived Importance and Usefulness of Current Review Criteria**

| Criterion | 1991 SRI Survey of Reviewers* | 1995 Survey of NSF P.O.** |
|---|---|---|
| (1) Competence | 94% | 0% |
| (2) Intrinsic Merit | 98% | 2% |
| (3) Utility/Relevance | 56% | 31% |
| (4) Infrastructure | 26% | 46% |

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* Percent of reviewers who said criterion was "extremely important"
** Percent of program officers expressing difficulty in obtaining useful input

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In addition to these surveys, the NSF Office of Policy Support (OPS) recently conducted an informal content analysis on a small sample of reviews of research project proposals to gain an

empirical perspective of how reviewers use the four NSB criteria. By far the criterion most frequently used by reviewers was research performance competence. Almost every reviewer commented on some variation of competence. The intrinsic merit of the proposed research was addressed in about 80% of the reviews; utility/relevance in about 40%; and infrastructure in about a third of the reviews. For criterion 4, reviewers referred to such potential "products" as trained researchers / graduate students, hardware, and information data bases. The goals and core strategies in NSF's strategic plan, such as the integration of education and research, were rarely mentioned in the reviews.

These studies imply that there are a number of problems with the current NSB generic criteria, including:

- Lack of clarity in wording encourages the use of "unwritten" criteria.
- Reviewers and Program Officers do not apply the current criteria uniformly (e.g. criterion #3 and #4 are not well understood and often ignored).
- Criteria do not easily encompass non-research activities, e.g., education and human resources, large-scale facilities, and centers.
- Criteria do not track very well with NSF Strategic Plan.
- Considerable variation exists in use of criteria across NSF.

In February 1996, the NSF Staff Task Group on Review Criteria (Chair, Pamela Stephens) reported that, "The NSB criteria are in need of clarification and should be rewritten," with consideration given to: (a) making the criteria clearer to evaluators; (b) emphasizing important attributes such as innovation, clarity of thought and soundness of approach; and (c) encouraging substantive comments on the quality of proposals.

The Task Group further recommended that NSF explore more effective ways to apply the infrastructure criterion, and should continue the practice of allowing programs to employ additional specific criteria as needed. The staff Task Group suggested a number of interrelated components that contribute to the evaluation of a proposal's overall merit, including: *Intrinsic Merit, Significance, Innovation, Approach, Feasibility, and Effect on Infrastructure*. This served as a starting point for the NSB-NSF Task Force.

## IV. Revised Generic Merit Review Criteria

The Task Force recommends the two generic criteria (below) to replace the current four NSB criteria. Within each criterion is a set of contextual elements, defined by questions to assist the reviewer in understanding their intent. These elements are non-inclusive; i.e. it is recognized that, for some programs, other considerations not identified below may be important for the evaluation of proposals. Further, reviewers are requested to address only those elements that they consider relevant to the proposal at hand and that they feel qualified to make judgments on.

### *# 1 What is the intellectual merit and quality of the proposed activity?*

The following are suggested questions to consider in assessing how well the proposal meets the criterion: What is the likelihood that the project will significantly advance the knowledge base

within and/or across different fields? Does the proposed activity suggest and explore new lines of inquiry? To what degree does the proposer's documented expertise and record of achievement increase the probability of success? Is the project conceptually well designed? Is the plan for organizing and managing the project credible and well conceived? And, is there sufficient access to resources?

***#2 What are the broader impacts of the proposed activity?***

The following are suggested questions to consider in assessing how well the proposal meets the criterion: How well does the activity advance discovery and understanding while concurrently promoting teaching, training, and learning? Will it create/enhance facilities, instrumentation, information bases, networks, partnerships, and/or other infrastructure? How well does the activity broaden the diversity of participants? Does the activity enhance scientific and technological literacy? And, what is the potential impact on meeting societal needs? The NSB-NSF Task Force believes that the proposed new criteria offer several advantages over the existing criteria, such as:

- NSF is increasingly asked to connect its investments to societal value, while preserving the ability of the merit review system to select excellence within a portfolio that is rich and diverse. Having two criteria, one for intellectual quality and the other for societal impact, should serve to reveal the situations where proposals have high quality but minimal potential impact (and vice-versa). Quality will continue to be the threshold criterion, but will come to be seen as not sufficient by itself for making an award.
- The two new criteria are more clearly related to the goals and strategies in the NSF Strategic Plan. For example, *NSF in a Changing World* states (page 31) that: "We rely on our proven system of merit review, which weighs each proposal's technical merit, creativity, educational impact, and its potential benefits to society."
- The criteria are simplified by reducing their number from four to two, and are defined for reviewers and proposers by a set of suggested contextual elements. Reviewers are asked to describe the proposal's "strengths and weaknesses" with respect to each criterion using only those contextual elements that they consider relevant to the proposal at hand.

## V. Application of the Proposed Generic Criteria

The Task Force was charged not only with examining the Board's generic review criteria but also recommending accompanying guidance on their use. There are a number of important "process" issues that help to frame this guidance. Because of the great range and diversity of activities supported by NSF, it is evident that maintaining flexibility in the application of criteria is as important as the criteria themselves. Most reviewers will only address those elements that they feel they are capable of judging. Asking proposers and reviewers to address all of the contextual elements in each and every proposal, regardless of the nature of the proposed activity, is not only unrealistic but, in fact, may be counterproductive. Also, pre-assigning weights to the criteria will, if applied to all proposals, incorrectly appraise some of them. It is important to take into account the relative roles of the external expert reviewers and the NSF program staff. Specifically, NSF proposals are evaluated by the Program Officer and other NSF staff with the help of the written reviews from expert peers. These external reviews are always advisory; the final funding

decision rests with the NSF staff. Hence, while the external reviewer applies the review criteria to the individual proposal, the Program Officer must evaluate the proposal within the context of managing a balanced portfolio of projects that will achieve the program's objectives and contribute to NSF's overall mission. In particular, reviewer assessment of criterion #2 (potential impact and societal value) is intended to provide NSF with input from reviewers, but the ultimate responsibility for judging the potential impact of the investment of public funds must rest with NSF. Hence, the Task Force recommends that the NSF staff be provided flexibility and discretion in the application and weighting of criteria.

*The use of special criteria*

NSF supports an extremely diverse set of activities ranging from individual investigator projects to teacher training to large research facilities. Many of these activities have special objectives and require proposals that are responsive to them. Program solicitations and announcements are frequently used to solicit proposals from the community, and, in some cases, the NSB generic criteria are modified or augmented to make the review process responsive to the special objectives. For example, the CISE Minority Institutions Infrastructure Program Announcement (NSF 96-15) lists nine additional factors that will be used to evaluate the proposals, including such factors as: (1) institutional cost-sharing, commitment, and related support to the projects, and (2) institutional track record in graduating minority scientists and engineers. The EHR/CISE Networking Infrastructure for Education Program Solicitation (NSF 96-13) adds six additional criteria, including: "Sustainability: The potential to leverage the ability of the education community to carry out full scale, self-sustaining and scaleable educational networking models." In other cases, a set of criteria are provided in-lieu of the NSB generic criteria. For example, the Academic Research Infrastructure (ARI) Program (NSF 96-12) specifies the following criteria headings: "Research and Research Training Merit; Infrastructure Need; Project Impacts; and Plans & Funding." Under the latter category, "the institutional management plan for maintenance and operation of the requested facility" is cited. Revising the NSB generic criteria will lessen but not eliminate the need for special criteria. However, it is important that the additional or replacement criteria be consistent with the intent and spirit of the NSB generic criteria. Since each new program announcement or solicitation receives considerable NSF internal review before it is issued, it is appropriate that this be considered during the publication's clearance process.

*Options for rating proposals*

Whatever the criteria, reviewers and panelists must be encouraged to provide substantive comments on proposals, not merely "check boxes" to satisfy some proposal rating scheme. Moreover, NSF should not impose a rigid system of multiple criteria and sub-criteria, each with a separate score. The end result is often a review with too much weight given to less significant aspects of the proposal. In terms of adjectival proposal ratings and numerical scoring, the Task Force extensively discussed the pros and cons of several options, including the following:

1. *No ratings or scores. Reviewer comments on proposal's strengths and weaknesses; then provides a summary narrative statement.*

Pros:

- Encourages more substantive reviewer comments while avoiding "box checking."
- Avoids dependence on "uncalibrated" scores.
- Results in fewer NSF staff callbacks to reviewers to clarify ratings and reconcile comments with ratings.
- Encourages reviewer to give equal attention to both criteria.
- Makes it easier for program officer to go against the "collective wisdom"; i.e., to recommend "high risk" proposals that may not be as highly rated as some "low risk" proposals.

Cons:

- More difficult to "bin" proposals (i.e., into categories such as those that definitely should be funded, those that might be funded, and those that definitely should not be funded.)
- More difficult to evaluate the effectiveness and fairness of the merit review system (i.e., cannot compare ratings scores with proposal decisions).
- Introduces more subjectivity into the review process because of difficulty in interpreting the narrative statement alone.

2. *Separate rating for each of the two criterion.*

Pros:

- Sends message to community that both criteria are important.
- NSF program staff has flexibility to determine relative application (weighting) of the two criteria to the funding decision.
- Provides program officers with better information for making funding decisions and can provide more precise feedback to applicants.
- Eliminates mere averaging of ratings as a means of ranking proposals.
- Ends semantic arguments about whether a proposal is, e.g., "excellent" or merely "outstanding", or somewhere in between.

Cons:

- May complicate the ranking of proposals in the panel review process and lead to proposal rankings that do not reflect consensus.
- May encourage even greater degree of "box checking" in place of substantive comments; i.e., could result in shorter and less detailed written comments.

3. *Single composite rating (for the two criteria).*

Pros:

- Simplest to understand and use.

- Easy to relate proposal ratings to proposal decisions.

Cons:

- Reviewers will implicitly weigh each criterion; may not give much attention to criterion #2 in assigning overall rating.
- Encourages "box checking" rather than substantive comments
- Scores may be arbitrary or uncalibrated (i.e. too lenient or strict)

In order to determine which is the most effective rating scheme (i.e. one that optimizes rationality, excellence, and fairness) the Task Force encourages the Foundation to experiment with various options. In designing these experiments, NSF should be fully cognizant of recent NIH efforts to redesign its peer review system.

*NSF instructions and guidance* to reviewers are very important. The system will be improved only if the reviewer use the criteria when evaluating the proposal. Thus, whatever criteria the NSB decides upon, they must be formatted for maximal use. This means redesigning the review form and the *Grant Proposal Guide* so that both the P.I.'s and reviewers understand what is to be evaluated. In fact, it may be advisable to design different review forms for different classes of proposals; for example for investigator initiated research proposals, for large facility proposals, for systemic education reform projects, etc.

In order to illustrate how the new criteria might be presented to the merit reviewer, a sample draft *NSF Proposal Review Form* is provided in Appendix B. While option #2 (i.e. provide a rating for each criterion) is being used in this case for illustration purposes, this does not imply that it is the recommendation of the Task Force.

A draft one-page synopsis of NSF's strategic plan, *NSF in a Changing World,* is also provided in the Appendix C. This plan provides a context for shaping the Foundation's future through a set of principles, goals, and core strategies that are aimed at developing a greater sense of interdependence between the research and education communities and the public. While a one-to-one mapping of the generic review criteria to the NSF strategic plan is not necessary, the Task Force believes that outside expert reviewers should be exposed to at least a summary of the strategic plan. This may be accomplished by attaching the synopsis to the proposal review form.

The new criteria imply that changes to NSF's guidelines for preparing proposals are needed. This should be carefully looked at by NSF management. At the very least changes will have to be made in the *Grant Proposal Guide*. Additionally, in all NSF program solicitations and announcements, NSF should carefully explain the full set of criteria that will be used to evaluate the proposal, including those related to the program's investment portfolio.

## VI. Future Action

On October 17, 1996, the National Science Board approved the release of the Task Force Discussion Report, subject to final clearance by the Executive Committee, not as NSB policy, but as a proposal for broader discussion inside and outside of the Foundation. Specifically. the

Director, NSF, is authorized to: *"share the report with the Nation's research and education community for comment, for the purpose of informing the Task Force on Merit Review."* The NSB also requested the Task Force to provide its recommendations at the March 1997 Meeting of the National Science Board, with respect to the nature and content of the new general criteria for review of proposals submitted to NSF (see Appendix D).

*Note: To encourage the broadest possible comment and discussion, NSF has posted a summary of this document along with a comparison of the current and proposed merit review criteria on its homepage (http://www.nsf.gov). Most important, there is a response box for you to provide the agency with your feedback electronically. NSF wants to hear your views and specific suggestions on this report.*

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**NSB/MR-96-15**

# National Science Board and National Science Foundation Staff Task Force on Merit Review

# APPENDICES



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APPENDIX A

## Current Criteria (adopted in 1981)

1. **Research performer competence** -- relates to the capability of the investigators, the technical soundness of the proposed approach, and the adequacy of the institutional resources available.

2. **Intrinsic merit of the research** -- the likelihood that the research will lead to new discoveries or fundamental advances within its field of science or engineering, or have substantial impact or have substantial impact on progress in that field or in other science and engineering fields.

3. **Utility or relevance of the research** -- the likelihood that the research can contribute to the achievement of a goal that is extrinsic or in addition to that of the research itself, and

thereby serves as the basis for new or improved technology or assist in the solution of societal problems.

4. **Effect on the infrastructure of science and engineering** -- the potential of the proposed research to contribute to better understanding or improvement of the quality, distribution, or effectiveness of the nation's scientific and engineering research, education, and manpower base.

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APPENDIX B

**Sample NSF Proposal Review Form**

| |
|---|
| Proposal No. Institution Principal Investigator |
| Please evaluate this proposal according to the two NSB criteria, which are explained on the reverse side of this form. While ratings are requested for each criterion, your substantive written comments on the proposal's strengths and weaknesses are critical to the evaluation. (Continue on additional sheet(s) if necessary) |
| Criterion 1: What is the intellectual merit and quality of the proposed activity? (Provide detailed comments) |
| Rating:<br><br>( ) Excellent ( ) Very Good ( ) Good ( ) Fair ( ) Poor |
| Criterion 2: What are the broader impacts of the proposed activity? (Provide detailed comments) |

Rating:

( ) Excellent ( ) Very Good ( ) Good ( ) Fair ( ) Poor

Reviewer's Name/Address/E-mail/Phone/Fax (Typed): Other Suggested Reviewers (Optional):

Reviewer's Signature and Date

**Important! Please Read Before Reviewing Proposal!**
**In evaluating this proposal, you are requested to provide detailed comments for each of two merit review criteria. Following each criterion is a suggested set of questions to consider in assessing how well the proposal meets that criterion. Please address only those questions that you believe are relevant to this particular proposal. If appropriate, please include comments on the quality of the prior work described in the "Results from Prior NSF Support" section.**

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**1. What is the intellectual merit and quality of the proposed activity?**

The following are suggested questions to consider in assessing how well the proposal meets the criterion: What is the likelihood that the project will significantly advance the knowledge base within and/or across different fields? Does the proposed activity suggest and explore new lines of inquiry? To what degree does the proposer's documented expertise and record of achievement increase the probability of success? Is the project conceptually well designed? Is the plan for organizing and managing the project credible and well conceived? And, is there sufficient access to resources?

**2. What are the broader impacts of the proposed activity?**

The following are suggested questions to consider in assessing how well the proposal meets the criterion: How well does the activity advance discovery and understanding while concurrently promoting teaching, training, and learning? Will it create/enhance facilities, instrumentation, information bases, networks, partnerships, and/or other infrastructure? How well does the activity broaden the diversity of participants? Does the activity enhance scientific and technological literacy? And, what is the potential impact on meeting societal needs?

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**Conflict of Interests**

If you have an affiliation or financial connection with the institution or the person submitting this proposal that might be construed a conflict of interests, please describe those affiliations or

interests on a separate objective, we would like to have your review. If you do not attach a statement we shall assume that you have no conflicting affiliations or interests.

**Confidentiality of Proposals and Peer Reviews**

The Foundation receives proposals in confidence and is responsible for protecting the confidentiality of their contents. In addition, the identity of reviewers will be kept confidential to the maximum extent possible. For this reason, please do not copy, quote, or otherwise use material from this proposal. If you believe that a colleague can make a substantial contribution to the review, please consult the NSF Program Officer before disclosing either the contents of the proposal or the applicant's name. When you have completed your review, please destroy the proposal.

**Privacy Act and Public Burden Statements**

The information requested on this reviewer form is solicited under the authority of the National Science Foundation Act of 1950, as amended. It will be used in connection with the selection of qualified proposals and may be disclosed to qualified reviewers and staff assistants as part of the review process and to other Government agencies needing names of potential reviewers. See Systems of Records, NSF-50. "Principal Investigator/Proposal File and Associated Records" and NSF-51. "Reviewer/Proposals File and Associated Records, 56 Federal Register 54907 (October 23, 1991). It is the policy of the Foundation that reviews, and reviewers identities, will not be disclosed to persons outside the Government, except that verbatim copies of reviews without the name and affiliation of the reviewer will be sent to the principal investigator. The Foundation considers review and reviewer identities to be exempt from disclosure under the Freedom of Information Act (5 USC 552) but cannot guarantee that it will not be forced to release them under FOIA, Privacy Act, or other laws. Submission of the requested information is voluntary.

Public reporting burden for this collection of information is estimated to average 5 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to:

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Herman G. Fleming       and to    Office of Management and Budget
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APPENDIX C

**Synopsis of NSF Strategic Plan**
***NSF in a Changing World (NSF 95-24)***

In 1995, the National Science Foundation issued its strategic plan, *NSF in a Changing World*, which reiterated the Foundation’s mission and established its strategic goals. The National Science Foundation Act of 1950 (Public Law 81- 507) set forth NSF’s mission and purpose.

*To promote the progress of science: to advance the national health, prosperity, and welfare: to secure the national defense...*

As described in NSF in a Changing World, the National Science Foundation has three long-range goals:

- *Enable the U.S. to uphold a position of world leadership in all aspects of science, mathematics, and engineering.* This grows from the conviction that a position of world leadership in science, mathematics, and engineering provide the Nation with the broadest range of options in determining the course of our economic future and our national security.

- *Promote the discovery, integration, dissemination, and employment of new knowledge in service to society.* This goal emphasizes the connection between world leadership in science and engineering on the one hand and contributions in the national interest on the other.

- *Achieve excellence in U.S. science, mathematics, engineering, and technology education at all levels.* This goal is worthy in its own right, and also recognizes that the first two goals can be met only by providing educational excellence. It requires attention to needs at every level of schooling and access to science, mathematics, engineering, and technology educational opportunities for every member of society.

To move toward the achievement of these goals, NSF employs a set of core strategies. These strategies reaffirm the Foundation's traditions, especially its reliance on merit review of investigator-initiated proposals, yet at the same time point to new directions for the Foundation.

- *Develop intellectual capital.* Selecting the best ideas in research and education and the most capable people to carry them out is at the heart of NSF's programmatic activities and the merit review system with which we implement those programs. Opening opportunities for all Americans to participate fully in an increasingly technological society is an essential part of NSF's mission.

- *Strengthen the physical infrastructure.* NSF's programs support investments in new windows on the universe, through facilities planning and modernization, instrument acquisition, design and development, and shared-use research platforms.
- *Integrate research and education.* NSF aims to infuse education with the joy of discovery and to bring an awareness of the needs of the learning process to research, creating a rich environment for both.

- *Promote partnerships.* For NSF, success requires collaboration with many different partners, including universities, industry, elementary and secondary schools, other Federal agencies, state and local governments, and other institutions. We also carry our partnerships across national boundaries.

The Foundation's general goals and strategies are translated into a diverse portfolio of activities, which often embody more than one strategy and contribute to more than one goal. In turn, NSF's efforts interact with those of other Federal agencies, state and local governments, school districts,

schools, and partners in the private sector to produce progress toward the three goals. NSF does not itself conduct research or educate students. Instead, it invests the Nation's resources in a portfolio of projects and activities performed by universities, schools, nonprofit institutions, and small businesses. NSF balances it's investments among three broad program functions, research, projects, facilities, and education and training.

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APPENDIX D

**NSB-96-182**
**October 17, 1996**

**RESOLUTION APPROVED BY THE NATIONAL SCIENCE BOARD AT ITS 339TH MEETING, ON OCTOBER 17, 1996**

WHEREAS, competitive merit review, with peer evaluation, is the National Science Foundation's accepted method for informing its proposal decision processes;

WHEREAS, the Board requested that the general review criteria adopted by the Board in 1981 be re-examined in light of the Strategic Plan entitled *NSF in a Changing World*, as approved by the Board in October 1994;

WHEREAS, a joint Task Force of Board members and Foundation staff, having reviewed a number of studies, surveys and reports and engaged in extensive discussions of criteria and related matters, have produced a report containing proposed new general criteria for the review of NSF proposals;

WHEREAS, NSF works in partnership with the Nation's research and education community in all its endeavors; Now therefore be it RESOLVED, that the National Science Board:

RECEIVES the report of its Task Force on Merit Review containing proposed new general criteria for review of proposals submitted to NSF;

AUTHORIZES the Director, NSF, to share the report with the Nation's research and education community for comment, for the purpose of informing the Task Force on Merit Review;

AND ASKS the Task Force on Merit Review to provide its recommendations at the March 1997 Meeting of the National Science Board, with respect to the nature and content of any such criteria.

Back to NSB Publications