

Briefing Notes

I would like to keep my remarks today quite informal. I think the best way to discuss the scope of the Congressionally mandated study is to pose, then answer, some of the questions I am asked most frequently about it.

1. Frankly, the question I am asked most frequently is, "Why do you want to work on this study when you could live a peaceful life as a grants manager?" This is often accompanied by a quotation from the ancient Chinese curse: "May you live in interesting times." But let me return to this question later.
2. The next question I'm asked is, "Why is NSF conducting the study?"

There are several reasons:

- o First, and most important, because Congress not so gently suggested that we do so.
- o Second, the study gives us the opportunity to evaluate what we are doing and why, to assess tradeoffs among alternatives, and to maximize the quality of choices being made.

- o Third, because the study give us the opportunity to allocate time, money and staff to stand back and assess our work -- something which program managers under the pressures of everyday responsibilities simply do not have time to do.

3. A related question is, "Aren't you concerned that in a time of budget cuts and Gramm-Rudman you are taking a risk in conducting an evaluation with this degree of visibility? Aren't you familiar," I'm asked, "with the ancient Greek proverb (by Plato): 'There is far greater peril in buying knowledge than in buying meat and drink.' In short, aren't you afraid of how the results might be used against you?"

I would answer:

- o First, we have no choice.
- o Any decision entails risks. A decision not to act often entails the greatest risks. Why do we assume we are making poor decisions or poor choices. My own experience suggests that a careful evaluation gives a program wider acceptability, not less. (Evaluations of Title I, Head Start and the Fund for the Improvement of Postsecondary Education are examples.) And self evaluation tends to gain respect for your objectivity.

- o Evaluations also provide the opportunity to communicate the purposes and results of programs to outside audiences. They help to clarify program objectives and to explain why particular strategies were selected to meet these objectives.
- o They often result in more realistic expectations about what the program can and cannot accomplish. They tend to produce modesty as to what we can accomplish both inside and outside NSF.
- o And, most important, they provide information that can be used to strengthen the program.

4. I am often asked the reverse question: "Won't this like other evaluations sit on the shelf? No one will pay attention to it either inside or outside NSF."

I would suggest several reasons:

- o Studies are likely to sit on the shelf when they are not viewed as objective but are looked upon as the rhetoric of yet another advocacy group.
- o Studies are also likely to be ignored when they are viewed as irrelevant -- i.e., when they have no audience, when the policy questions they raise are of interest only to the researcher conducting the study. In this case, Congress requested the study. It is a constituency.

- o The request for a management plan also makes NSF itself a primary client for the study. This is as it should be. The study is designed so that the NSF staff will work closely with the contractor throughout the study in defining objectives and policy issues, reviewing past experience, setting the framework, and developing evaluation plans. The results will be relevant to decisions NSF staff must make about allocating science education resources. That's our responsibility.

5. Another popular question is, "Why should outside contractors tell NSF what to do? Don't we know what we are doing and why?"

I would answer:

- o We may know what we are doing, but if we understand the implications of alternative choices, we can better explain our expected benefits for given or variable costs.
- o The study builds on objectives which have been set by the Foundation. The contractor does not itself set objectives.
- o The contractor is asked to assess advantages and disadvantages of alternative initiatives to

meet the Foundation's objectives. It is asked to examine tradeoffs among initiatives. The contractor is not asked to make recommendations about what NSF "should" do. We are not interested in the contractor's value judgments about what is the "best" approach. That decision is the responsibility of the Foundation.

6. I'm then asked, "If NSF staff is this closely involved, won't NSF coopt the study and reduce the possibilities for generating ideas which might be inconsistent with its current plans? Or, put more bluntly, won't NSF's control over the management and frame of reference for the study and its objectives defeat the very purpose of the study -- an objective evaluation?"

There are several answers:

- o First, in addition to considering the Directorate's current program, contractors are invited to propose alternative programs that might prove useful in meeting NSF's objectives. That option gives them freedom.
- o Second, although we must ensure the study's usefulness by focussing on objectives and issues which are relevant to NSF, we must also ensure the study's objectivity -- i.e., contractors should

feel free to present the results as they see them. We all have great respect for objectivity and science and are not likely to coopt or be coopted.

- o Finally, contractors of the type likely to be chosen also have a sense of professionalism and are not likely to give it up readily. It is that balance between setting the frame of reference for the study while permitting the contractor to use its professionalism and skills which creates the balance, the challenge of the project.

7. The next question I'm asked is "Why do we need to spend \$2M to tell us what we already know -- i.e., if we want students to learn more statistics, we should fund statistics projects; if teachers don't know how to teach science, fund teacher training programs. And simply measure student achievement to see if we've succeeded.

I would suggest in response that:

- o Federal priorities are often inconsistent with local priorities. We have learned through hard experience that Federal programs will be used only if they are relevant to the skills and interests of clients. If school districts don't want to teach statistics, they won't.

- o And there's no point in measuring student achievement unless we know whether -- and how -- the Federal programs are actually being implemented by school districts. We might be testing students on subject matter they were never taught.

8. One final question: "What do you expect to get out of the study?"

These are some illustrations:

- o A better appreciation of what we can know and what is unknown.
- o An evaluation of costs and benefits.
- o The separation of facts from value judgments.
- o An understanding of what we can do and what is not realistic.
- o An understanding of what is measurable and what cannot be measured.
- o Definitions, in operational terms, of what's meant by the terms leverage and catalyst.
- o An understanding of the implications of our choices: What are we not going to do so we can do something else.

I would like to conclude by returning to the first question, "Why do you want to work on the study?"

There are several reasons:

- o First, because of the inconsistency of the questions I've already posed and the challenge of trying to reconcile some conflicting issues raised by these questions.
- o Second, because of the challenge of balancing between different constituencies interested in the outcomes of the study -- NSF, Congress, OMB, the education and scientific community, the contractors.
- o A third reason is to participate in the process of articulating the advantages and disadvantages of alternative initiatives and to help shape the frame of reference for our programs so we can understand more fully the implications of our choices.
- o And last, the subject matter is an important one in the context of our national priorities; the results could be useful for science education in the United States.

Thank you.