

EARMARKING OF SCIENCE:
DEFINITIONS, INTERPRETATIONS, AND IMPLICATIONS

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C O N T E N T S

	PAGE
Welcome: Maxine Singer	4
Introductory Remarks: John T. Casteen	4
Panel: DEFINITIONS OF EARMARKING	
Sarah Horrigan	10
Ron Southwick	14
Jeff Brainard	17
Kei Koizumi	24
Daniel R. Pearson	28
Audience Discussion	39
Panel: INTERPRETATIONS AND IMPLICATIONS OF EARMARKING	
Senator J. Bennett Johnston	52
Judith Vaitukaitis, M.D.	58
Raymond E. Bye, Jr.	64
Audience Discussion	68
Closing Remarks	85

P R O C E E D I N G S

1
2 MS. SINGER: I would like to welcome everybody to the
3 Carnegie Institution of Washington. You may all be interested to
4 know that it was, indeed, in this building that the whole concept
5 of funding science in the national interest by recruiting people,
6 wherever they were, began. That was the context of the Office of
7 Finance and Insurance during World War II, and the work started
8 under President Roosevelt.

9 The whole effort of U.S. R&D was begun right here in
10 this building. This room actually was used, and a platform was
11 built so that there were, in fact, two floors because they
12 outgrew the space in the building. And all through the war years
13 there was a scientist search initiated here. They planned here
14 and carried out elsewhere, the funds provided by the LSRT.

15 So we are talking today about a subject that was going on at
16 this building. So it is especially nice to welcome you all to
17 talk about earmarking of science.

18 You have a very challenging task in front of you. We
19 all know what our missions are, but we also all appreciate that
20 we need to find a path through the conflicting interests, all of
21 which have legitimacy, for science and science services. That's
22 the reason why it is so difficult a problem.

23 The scientists, themselves, have an interest. The
24 Congress has an interest in representing their constituents. The
25 White House, the OMB have an interest, because of their
26 responsibilities for decisions and policies about expenditures
27 and the taxpayers money. All of these things are legitimate and
28 that is one reason why this has proved to be such a troubling and
29 difficult problem.

30 I don't have any solution, that's your job, but I do
31 want to wish you all a lot of good luck in dealing with this in a
32 way that will be to the advantage of our country and the
33 scientific effort, in particularly these very difficult days.

34 So I welcome you all and I wish you a good afternoon.

35 MR. CASTEEN: I am John Casteen. I am the President of
36 the University of Virginia, and my task today is to act as
37 moderator of the workshop. I would like to start by welcoming
38 you and to thank you for coming.

1 Our goal is to address a number of the issues to
2 earmarking appropriations for research and alternative ways of
3 distributing those dollars. The discussion marks a kind of
4 turning point in our ability to understand this issue in
5 different ways and in new ways. I should acknowledge the support
6 of the sponsoring organizations: the American Association for the
7 Advancement of Science, the National Academy of Sciences, the
8 Association of American Universities, and the National
9 Association of State Universities and Land Grant Colleges.

10 This workshop was scheduled, as you know, a good bit
11 before the events of September the 11th. I should tell you that
12 we had some discussion about whether or not we should move
13 forward with this program at this time, and that, ultimately,
14 believing that the national interest really does lie in
15 developing sound procedures for addressing these issues and other
16 issues, the decision was made to move ahead. So I welcome you
17 with the understanding that for all of us, this is a difficult
18 time.

19 The topic itself, I think, is a provocative and let's
20 hope a productive one, for a lot of reasons. It raises
21 fundamental questions about the nature of science itself. It
22 pushes us toward questions of definition that are the business of
23 our first panel. It raises questions about how best to advance
24 scientific knowledge, about the influence of social and political
25 interests on scientific research and on academia's missions. It
26 raises questions about the role of government in funding science,
27 the obligations of government with regard to research, and
28 finally, questions about the equitable and effective distribution
29 of federal funding for scientific research.

30 I would expect that all of these questions have to be
31 on our minds this afternoon. We believe this will be the start
32 of a discussion and not the end of one -- that we're likely to
33 work through these issues over the course of several months, but
34 that the core issues covered today are likely to drive the
35 discussion as it goes forward.

36 The history, as you know, is not ancient history; it
37 goes back about 20 years. In 1980, the Congress earmarked some
38 \$16 million for scientific research to be conducted at about 21

1 colleges and universities. The Chronicle of Higher Education
2 reports that in this fiscal year—fiscal 2001—\$1.67 billion of
3 federal research funds were earmarked for nearly 200 colleges and
4 universities.

5 Partly in the interest of full disclosure and partly
6 simply to say that in all parts of the academy, this has
7 significance, I should tell you that so far as we can tell, my
8 own institution, Virginia, has received \$3 to \$4 million in
9 earmarked funds since about 1980. By and large, the funds have
10 gone to projects sponsored by, proposed by, individual faculty
11 members, and quite often, projects that were of some vital
12 interest to national leaders, especially those involved in the
13 political process.

14 I should note also that since the adoption of the AAU's
15 moratorium on earmarking in the mid-'80s, fewer than ten, and
16 possibly as few as five or six AAU member institutions have
17 refrained from seeking federal earmarked funds.

18 So the truth is that even in the sector of higher
19 education that has been most determined to discourage the
20 mechanism, the evidence is that the vast majority of member
21 institutions have, in fact, participated in the system.

22 A number of things have changed since 1980. For one,
23 the pool or the number of universities with growing aspirations
24 for international advancement, for institutional advancement, has
25 expanded.

26 At the same time the supply of available funds to
27 finance this advancement has always exceeded the demand for
28 expenditure of them. And obviously, in that context, it is no
29 surprise that institutional interest in designated or earmarked
30 funding has been very much on everyone's mind in the course of
31 this period.

32 I think it is obvious to all who have looked at it,
33 certainly to our members of Congress who have worked on the
34 issue, that this source of funding has not, in general, proved to
35 be the pot of gold at the end of the rainbow. Issues surround
36 earmarked funding, and these issues have led to decisions about
37 whether to seek those funds or, indeed, whether to allocate those
38 funds, especially complicated ones.

1 The debate about earmarking is complex and involves not
2 two sides, but eight or 10 sides. But in any event, on two
3 extreme sides, the arguments go something like this. Those who
4 argue that earmarking is good for science and for the academy and
5 that it serves the public interest argue something like this.
6 First, the existing peer review system is biased in favor of
7 established institutions. And those institutions are, by and
8 large, members of an old boy network, so those institutions have
9 a kind of inside track with regard to the allocation of funds
10 through the peer review process.

11 Second, earmarking supports scientific research in
12 institutions located all across the country, including regions
13 that have not previously or historically benefitted by the
14 availability of federal funding to support research work.

15 Third, in the absence of a meaningful federal research
16 facilities program—an issue that goes back almost 15 years—
17 earmarking has been necessary to support advancement, especially
18 in institutions that were not historically part of what I called
19 the network a moment ago.

20 Fourth, earmarking has the effect of offsetting the
21 inadequacies of the indirect cost system, and that system fails
22 to fund the true cost of research facility construction and
23 maintenance and conversion. Therefore earmarking is a way of
24 addressing true costs in institutions that are undergoing change.

25 Fifth, and the argument that perhaps one hears most
26 often, everyone else is already seeking earmarked funds, and
27 institutional presidents or research leaders who do not do so
28 are, in effect, abdicating responsibility for their institutions,
29 and indeed, to science itself.

30 There is probably some jaundice in the way I have
31 described that side of the argument. But in any event, I think
32 most of you will recognize those as core issues.

33 On the other side, there is the argument against the
34 process by which funds are earmarked. Advocates of that
35 side of the issue argue something like this.

36 First, earmarking undermines peer review itself. The
37 implication of that is that it undercuts the cause of excellence
38 in the sciences.

1 Second, if peer review is, in fact, biased, and if it
2 concentrates resources in a small number of inside institutions,
3 earmarking does the same thing, but breaks the pool of
4 institutions along different division lines.

5 Third, earmarked funds are often wasteful and they are
6 often ineffectively spent.

7 Fourth, earmarking creates an opportunity cost and it
8 crowds out peer reviewed projects.

9 And fifth, earmarking promotes hypocrisy in academic
10 science.

11 The truth is, this is not the first time that this
12 discussion has come up, as you know. In the early '80's,
13 culminating in a resolution adopted in 1983, the AAU first
14 conducted a debate about earmarking, and then took a position
15 against it. October 25, 1983, the AAU's position was first
16 adopted.

17 My colleague, Jim Savage, in his book, *Funding Science*
18 *in America*—published about a year and a half ago, and which
19 covers this issue, I think, pretty thoroughly—recalls that the
20 AAU called on universities and members of Congress, and I quote,
21 "to refrain from actions that would make scientific decisions a
22 test of political influence rather than a judgment on the quality
23 of work to be done. We believe that processes based on the
24 informed peer judgments of other scientists need to be preserved
25 and strengthened." And that is the core of the position that AAU
26 took in 1983.

27 On November 14th of 1983, NASULGC passed a similar
28 resolution. And later on, so did many other organizations,
29 including the National Academy of Science and the American
30 Council of Education.

31 In 1987, after that round of resolutions failed to stop
32 the process, the AAU called for a moratorium on earmarking, and
33 this was the second time in five years that AAU had called on its
34 members to abstain voluntarily from seeking earmarked funds.

35 In addition to academic organizations, other entities
36 have taken an interest in the issue, most notably those in the
37 executive branch of government, and of course, those who work in
38 the Congress.

1 But in any event, in the executive branch, for about 29
2 years, the Presidents, and their science advisors, and their
3 heads of OMB, have unanimously been opposed to earmarking. It
4 has been Presidents of both parties. President Reagan, the
5 senior Mr. Bush, the younger Mr. Bush, President Clinton, all
6 made strong statements against earmarking. And all in one way or
7 another blamed it for contributing to the national deficit and
8 for being a wasteful mode of spending.

9 Members of Congress have been somewhat divided on the
10 issue. Those who have spoken out on it have tended to have
11 fairly strong feelings about it, and obviously the support for
12 the system has been largely within the Congress and not in other
13 parts of government.

14 That said, the first part of this discussion has to do
15 with definitions. We have with us today a number of speakers who
16 have had experience in this area. In the fiscal year 2002 budget
17 request the executive branch of the government has, for the first
18 time, published a definition of earmarking.

19 The definition is, "research performed by congressional
20 direction."

21 Today's discussion will almost certainly seek to
22 provide some ideas that OMB can use in modifying and perfecting
23 its definition, but also discussion that has to do with other
24 perceptions of what the issue actually is.

25 The first panel to convene includes Sarah Horrigan of
26 the U.S. Office of Management and Budget, Jeff Brainard and Ron
27 Southwick of the Chronicle of Higher Education, Kei Koizumi of
28 AAAS, and Dan Pearson of the House Science Committee staff, on
29 the Democratic side.

30 I would like to invite you, if you will, to join me at
31 the table and we will begin the discussion.

32 We have not had occasion to collaborate a forethought
33 about how we are going to do this. Sarah, maybe I will ask you
34 to start, and we will have presentations coming this way until
35 everyone has had a chance to speak. And then I would like to
36 have time for audience discussion in about an hour or something
37 of that sort.

38 Sarah Horrigan.

1 MS. HERRIGAN: Well, thank you very much, and thank you
2 for inviting me today.

3 Before I start I would like to point out that you also
4 invited my director, Mitch Daniels, to come give a presentation.

5 Unfortunately, his schedule precluded his being here, but I
6 assure you that if he were here, he would be as passionate as he
7 has been in previous meetings in his adamancy against earmarks.

8 I am here as an OMB staff member, and I thought my job
9 today was to present a little bit of the history and try to
10 explain to you how we came up with the definition of earmarks
11 that we are using in the President's Budget. And I will keep my
12 remarks short, because I think the most interesting part of this
13 meeting is going to be our discussion.

14 In the previous administration, we, OMB, were asked by
15 the Office of Science and Technology Policy to come up with an
16 estimate for the amount of federal dollars spent on merit-
17 reviewed research. Being good civil servants, we did ask that
18 question of the agencies: how much money were they spending on
19 merit reviewed research at universities? And we got a number,
20 which we published in the President's budget.

21 However, that number couldn't tie to anything. As far
22 as we knew, the agencies could have been picking it out of the
23 air. And we, being analysts, like to figure out how numbers fit
24 together. And we could not explain how that number fit with
25 anything else.

26 So what we have done in the last couple of years is to
27 try to come up with a total across different categories of how
28 research funds are allocated that add up to the total amount of
29 basic and applied research. And that means that, when the
30 agencies develop these numbers, they need to think about those
31 numbers actually reaching the total of basic research plus
32 applied research. And we, as analysts, can go in and look at the
33 totals and make sure they add up and see if they make sense.

34 Now I hasten to point out that these allocation
35 categories are the total for basic and applied research. OMB
36 requests a number of other different categories from the
37 agencies. We ask them for their spending on basic research,
38 applied research and development. We also ask them for

1 categories of R&D facilities and R&D equipment.

2 And these five allocation categories that I am going to
3 talk about need to add up to the basic research plus applied
4 research. So we are missing potential R&D earmarks in
5 development and R&D facilities.

6 For example, if you look at our chapter in the
7 Analytical Perspectives volume of the budget -- I think you have
8 this as a handout on the back table when you came in -- you will
9 notice that the NSF amount for congressionally-directed research
10 is zero. And of course, that does not include the earmarks that
11 have been happening recently in their Major Research Equipment
12 account, which is book kept under the facilities piece of their
13 budget.

14 In developing these five categories -- and those are:
15 research performed at congressional direction, inherently unique
16 research, merit reviewed research with limited competitive
17 selection, merit reviewed research with competitive selection and
18 internal evaluation, and merit reviewed research with competitive
19 selection and external evaluation -- we tried to make these
20 categories sum up to the total research and also be somewhat
21 nonjudgmental in terms of whether they are good or bad.

22 Clearly if you tell an agency merit reviewed research
23 is good and everything else is bad, you are going to get merit
24 reviewed research in their submissions to us.

25 So we tried to make the point in our definitions that
26 different ways of awarding research funding can be important in
27 different situations.

28 For example, "inherently unique research" we originally
29 had called "research performed at agency discretion," but the
30 agencies did not particularly like that definition, so we changed
31 it to inherently unique.

32 We recognize that there may be some very important time
33 sensitive kinds of research that a program manager at an agency
34 would want to fund without going through an entire peer review
35 process. And frankly, we think we hire program managers at our
36 agencies who are qualified scientists and that they should have
37 some discretion. That's why we hire competent people.

38 So what we tried to do is come up with these five

1 categories that sum to the total of basic and applied research,
2 but are essentially nonjudgmental because we wanted to come up
3 with realistic numbers.

4 As I implied, we started this process the year before
5 last. Then, we had three categories, which were: congressionally
6 directed, research performed at agency discretion, and merit
7 reviewed research with competitive selection and external
8 evaluation.

9 We expanded those definitions, because, for example,
10 the Department of Defense argued that, even though they don't use
11 an external peer review process, their program managers and their
12 internal evaluation is equivalent to a peer reviewed process such
13 as is done at NSF or NIH. So we tried to accommodate the concerns
14 of the different agencies in coming up with these categories.

15 Now the topic for today is clearly the research
16 performed at congressional direction. And let me read you the
17 exact definition that we ask the agencies to follow.

18 It is: "intramural and extramural research programs
19 where funded activities are awarded to a single performer or
20 collection of performers with limited or no competitive
21 selection, or with competitive selection but outside the agency's
22 primary mission, based on direction from the Congress in law, in
23 report language, or by other direction. Funded activities may be
24 merit reviewed prior to award."

25 Now I know that sounds a little bit stilted perhaps,
26 but let me just tell you what we were trying to do.

27 What we were not trying to do is capture areas where
28 there is legitimate policy disagreement between the Congress and
29 the executive branch on types of research that ought to be
30 funded.

31 For example, the appropriators for the Veterans
32 Administration, Housing, and Independent Agencies bill for the
33 National Science Foundation have occasionally put in language
34 that talks about floors and ceilings saying, "If the final budget
35 number is lower or higher than the budget number in our bill,
36 then NSF must adjust the amount to be equivalent for each area,
37 each directorate, or each division."

38 The administration has a different view of that. We

1 actually believe that NSF ought to be setting priorities, and
2 that they should not have the exact same percentage increase or
3 decrease for each division or directorate. But that is a
4 legitimate policy difference that we are willing to discuss and
5 accept.

6 There are other examples, such as plant genome
7 research, where the Congress felt that research on plant genomes
8 was more important than what had been in the agency request and
9 they plussed that particular program up.

10 What we are trying to cover in this definition—which is
11 why there are so many qualifications—is all the permutations of
12 potential earmarking because, as many of you know who have read
13 report language, people are getting very skilled at how they
14 actually write that language.

15 It is very seldom that a specific institution is named
16 in the report language, but the language is often clever enough
17 so that it can only go to a particular institution. So we were
18 trying to cover that.

19 We also are aware that many agencies, even when there
20 is a specific earmark in bill language or report language, don't
21 just write a check to that institution. They require a proposal,
22 and they require a review of that proposal so that the wisest use
23 of that money is actually made.

24 So we did include the fact that funded activities may
25 be merit reviewed prior to award.

26 We also included the stipulation of potential earmarks
27 outside of the primary mission of the agency. We were thinking
28 there of examples such as breast cancer research at the
29 Department of Defense, which is not normally thought of as a
30 defense mission.

31 We also tried to capture the fact that—and I don't
32 think this is a totally dirty little secret—that some agencies
33 may be up on the Hill negotiating with congressional staff
34 because, clearly, they need to deal with the people who authorize
35 and appropriate their funds year after year. And sometimes they
36 may make agreements with congressional staff that don't go
37 through the normal budget process.

38 Of course we at OMB believe that the President's budget

1 is the budget that all agencies ought to be defending, and so we
2 disagree with that process and try to capture that in our
3 definition.

4 So I will stop there for the moment, but let me say one
5 more thing about just the problems with data collection.

6 I know that these numbers are published in a document,
7 and they look very nice like they are lined up in a table, and
8 that makes them look like they have some legitimacy. And we
9 certainly hope they do, but we also understand the problems with
10 this data collection.

11 Quite frankly, we at OMB cringe sometimes when we are
12 told, for example, to find out how much we are spending on
13 terrorism or on the environment or in other areas. Those numbers
14 are very difficult to come by, because we need to craft a
15 definition and communicate it to the agency budget offices, the
16 agency budget offices need to communicate that to their program
17 managers, and there is clearly a lot of potential for
18 misunderstanding what these data are.

19 We do have a problem, as some of you may know, between
20 the data that OMB collects—OMB asks the funders, the agencies how
21 much they are spending in different areas—and the data that are
22 collected by the National Science Foundation where they ask the
23 performers of research in surveys how much they are receiving.
24 And there are some disconnects there just because of definition.
25 So I wanted to put that caveat in and I am looking forward to a
26 spirited discussion.

27

28 MR. CASTEEN: Thank you, Sarah. The Chronicle of
29 Higher Education has had an unusual role in this discussion
30 because of its annual list. And Jeff Brainard and Ron Southwick
31 have come from the Chronicle, and welcome to you, and please go
32 ahead.

33 MR. SOUTHWICK: Good afternoon. I'm Ron Southwick with
34 the Chronicle of Higher Education. I am going to be describing
35 briefly the findings of our survey this year and describing the
36 survey in past years a little bit. And then my colleague, Jeff
37 Brainard, is going to give some information about how we come up
38 with our survey and some of the criterion we use for defining

1 earmarks.

2 The Chronicle of Higher Education has compiled our
3 survey of earmarks annually since 1989. As mentioned earlier,
4 for the 2001 fiscal year, Congress directed \$1.668 billion in
5 earmarks to colleges and universities. This is, by far, the
6 highest total ever and it represents a 60 percent increase over
7 the previous fiscal year.

8 Our survey this year indicated that 84 percent of that
9 money, or \$1.409 billion was directly related to research
10 projects, research equipment, or the construction or renovation
11 of research laboratories.

12 In the past some supporters of earmarks have suggested
13 that a significant portion of our total of academic earmarks is
14 not really related to scientific research enterprises.

15 But in fiscal year 2001, nearly all of the academic
16 earmarks in our survey went to some type of research activity or
17 to an activity supporting scientific research.

18 It is worth pointing out that the Chronicle survey does
19 not track all earmarks related to research and development. The
20 Chronicle survey only tracks those R&D earmarks that are based at
21 colleges and universities. So our survey would not include any
22 spending on non-academic laboratories or consortiums, or
23 intramural research programs at federal laboratories.

24 The growth of academic earmarks, which is probably not
25 a surprise to you, has really been very remarkable over the last
26 two years. Just within the last two years academic earmark
27 totals have more than doubled. In 1999, the total was \$797
28 million, and now it is \$1.67 billion. So it is a remarkable
29 growth over just the past two years.

30 The question of spending for earmarks is obviously
31 important because not only is Congress spending more money in
32 earmarks to colleges and universities, but also it is directing
33 more earmarks to a wider range of institutions, as well.

34 In 2001, 528 different institutions received earmarks,
35 and that is a 37 percent increase over the previous year and also
36 the most recipients by far. In 1990, for example, only 117
37 different institutions received money through earmarks.

38 For most accounts, Congress spends relatively little

1 time reviewing proposals for earmarks at colleges and
2 universities. Former Congressman John Edward Porter of Illinois
3 served as the Chairman of the House Appropriations panel that
4 oversaw the National Institutes of Health. And he said in an
5 interview with us last year that it is virtually impossible to
6 evaluate the merits of the thousands of proposals that come
7 before the appropriations panel.

8 He said, "We really rely upon the members judgment
9 about what is going on in their own districts and what needs they
10 see as unmet."

11 Critics of the Chronicle survey have also pointed out
12 that federal R&D funds spent on peer-reviewed studies surpass the
13 funds on what is properly called academic pork. And that is
14 probably true.

15 The National Institutes of Health budget for 2001 is
16 \$20.3 billion. But in recent years the amount of money spent on
17 earmarked projects has grown to the point where it can no longer
18 be described as an insignificant sum.

19 Some defenders of earmarks have said that it is part of
20 the price of a generous Congress and that it does not necessarily
21 have an effect on the peer reviewed research programs at
22 different federal research agencies. But our survey found that
23 that is not always the case.

24 NASA, the National Aeronautics and Space
25 Administration, reduced its grants to researchers in the life
26 sciences across the board by about 5 percent in order to pay for
27 earmarks within that agency's budget.

28 And in fiscal year 2002 fiscal year, the amount of
29 earmarks that have been proposed for NASA's budget, coupled with
30 some overruns in the international space station budget, could
31 hurt the agency's ongoing research programs, according to some
32 officials and observers who have been following the process over
33 the last several months.

34 While proponents of earmarks say it helps universities
35 and states compete for federal research dollars, the results are
36 mixed. Certainly more institutions received earmarks than ever
37 before last year, but it is not necessarily elevating
38 institutions in the rankings of federal R&D to colleges and

1 universities.

2 It is worth noting the top 100 institutions in terms of
3 federal R&D have remained virtually unchanged for the last 10
4 years.

5 Before we go any further, it is probably worth pointing
6 out one common misconception about the Chronicle survey. Some
7 readers and letters have complained that our annual earmarking
8 report is an indictment of all earmarked projects at colleges and
9 universities.

10 And in our survey we generally avoid making a
11 qualitative judgement on earmarked projects. The Chronicle does
12 not assume in its survey that every project that is supported by
13 earmarked funds is inherently bad or unworthy of support. But
14 the Chronicle survey has tried to address whether it is
15 appropriate that a large and growing amount of federal money
16 supports scientific research without open competition or merit
17 review.

18 While scientists admit that the peer review system is
19 not perfect, most researchers and advocates assert that it is the
20 best way to insure the best research proposals are financed.

21 That gives a brief overview of our survey. My
22 colleague, Jeff Brainard, is going to discuss how we defined the
23 earmarkings in our survey. I should just mention that if you
24 would like more information about our reports, we have an
25 excellent searchable database on the Chronicle's website, which
26 is www.Chronicle.com. And I highly recommend checking it out.
27 And now I will turn it over to Jeff.

28 MR. BRAINARD: Thanks. It is an honor to be here
29 today. I would like to tell you a little bit more about our
30 definition of earmarks, the steps that we go through to interpret
31 the language that we see in congressional appropriations acts and
32 conference reports, and translate that into the listings that you
33 see in our pages.

34 And we publish this definition every year with each
35 survey. It is on the website address Ron mentioned. The full
36 address is www.Chronicle.com/stats/pork, and so if you have not
37 yet read that, I encourage you to read it. However, much of what
38 I have got to say today is an attempt to give you some additional

1 detail and insight into the reasoning that underlies our
2 definition. And I apologize in advance if some of our
3 descriptions of the appropriations process are old hat to some of
4 you.

5 From Ms. Horrigan's presentation, it sounds like our
6 definitions are fairly similar to the ones that OMB applied.

7 The Chronicle defines earmarks as specific
8 appropriations that federal agencies give to specific recipients
9 at colleges and universities, without competition, to satisfy the
10 intent of Congress.

11 Most earmarks in our survey appear to involve cut and
12 dry situations. A specific university is named in an
13 appropriations act or a conference report with a specific dollar
14 amount for a specified purpose.

15 We count those as earmarks unless those projects were
16 requested by the President. This rarely appears to be the case
17 and instead these projects are added by Congress to the
18 President's budget proposal.

19 In those cases where a specific recipient is named,
20 agencies typically treat the language as binding and mandated by
21 law, and they get the money without a fully open competition.
22 More on how we define that in a moment.

23 Some people refer to these clear-cut cases, where an
24 appropriation goes to a specific recipient, as "hard earmarks" in
25 order to distinguish them from less obvious or clear-cut cases.
26 And I will get to that also in a moment. But the hard earmarks,
27 represent the majority of earmarks that we list in our survey.

28 The recipients of hard earmarks are usually specified
29 in conference reports. Some in the actual appropriations act
30 language. A conference report is not legally binding, but
31 expresses the intent of the conferees who crafted the final
32 version of each appropriations act.

33 Agencies, nevertheless, appear to pay great deference
34 to conference reports as expressing the intent of Congress.

35 We have not found a case where an agency said it would
36 not honor conference report language giving a hard earmark to a
37 specific university because that named recipient was not named in
38 the accompanying appropriations act.

1 If the conference report merely recommends a recipient
2 to receive a specific amount of money for a certain purpose, that
3 is legally not a hard earmark. This language does not bind an
4 agency, but the Chronicle regards these as hard earmarks in
5 certain circumstances.

6 It seems that members of Congress often include such
7 language with the intent that an agency treats the line item as a
8 hard earmark, and apparently Congress refrains from using more
9 restrictive language of a hard earmark because they anticipate
10 that the agency will object. So Congress recommends that the
11 appropriation go to a specific recipient, which some people would
12 call "soft earmark".

13 Many agencies ignore these because they say the
14 projects don't fit into their priorities. But there have also
15 been cases where agencies ignored these recommendations, and
16 members of Congress eventually get fed up and sought hard
17 earmarks to fund these same projects. Other agencies seem
18 willing to treat recommendations as hard earmarks in order to
19 avoid tempting the wrath of Congress.

20 So in all cases where recipients are recommended, the
21 Chronicle checks with the agency to see if, in fact, it gave
22 money to that recommended recipient. And if so, we ask the
23 agency if it gave the money to that recipient specifically and
24 primarily because of the recommendation.

25 So what is a merit-based open competition as the
26 Chronicle has defined it? It is a grant-making process in which
27 the outcome is not predetermined or swayed by congressional
28 intent.

29 It is a process whereby any interested party can submit
30 an application requesting money from that line item
31 appropriation. The relevant agency responsible for administering
32 the earmark is then free to review and judge the quality of those
33 applications using an external, peer-review panel or internal
34 staff who have expertise about that research topic or activity,
35 and the agency can use its own discretion to award the money
36 based on those evaluations.

37 The ideal for this kind of competition would arguably
38 be the NIH and NSF, which give grants, of course, in response to

1 investigator-initiated proposals, or the agency's own request for
2 proposals on specific topics.

3 Some types of appropriations and earmarks are more
4 complicated than what I have just described, and I want to tell
5 you a little bit about what judgements we made to define those as
6 earmarks.

7 In some cases, Congress provides money for programs
8 that are defined as having specific multiple partners. And these
9 partners are identified as being eligible to compete for the
10 funds through what is termed a merit-based competition.

11 This category appears to correspond to what the OMB
12 described in its analysis of earmarks for 2001 as a "limited
13 competition".

14 An example from this year's Chronicle survey would be a
15 \$15 million earmark from the Transportation Department for
16 something called the Air Worthiness Assurance Center of
17 Excellence. This center involves research to improve the safety
18 of commercial aircraft. It is a consortium that says it
19 distributes funds on a competitive bases among 28 specific
20 universities and several corporations and government agencies.

21 These 28 institutions were not named in the
22 appropriations language, but all of them are considered standing
23 partners on this ongoing project.

24 Although other applicants are free to apply for these
25 funds, the Chronicle's reasoning is that the past involvement of
26 these specified partners in the project makes them
27 disproportionately likely, compared with other applicants, to
28 receive most of the funds from this earmark.

29 We also classify as earmarks cases where a university
30 receives the earmark with the understanding that it will use the
31 money to make awards to other universities which are not named in
32 the appropriations act or conference report, and those awards are
33 made through an open competition that the recipient university,
34 itself, runs. There are several agriculture earmarks of this
35 type.

36 Members of Congress have said that some agriculture
37 earmarks that the Chronicle calls earmarks are, in fact, merit
38 reviewed; specifically, special research grants in the

1 cooperative state research extension and education service.

2 However, these merit reviews by the USDA are after the
3 fact. They are done after the research program funded by the
4 earmark has been operating for as long as several years. These
5 grants are initially hard earmarks and these merit reviews are
6 not used to pick those recipients.

7 Another less than clear cut situation involves line
8 item appropriations where Congress does not specify a recipient
9 by name. This is most common in the Defense Department where
10 there are long tables of line items that name very specific
11 research projects.

12 I have talked privately with DOD staff members about
13 these line items at length and we at the Chronicle have thought
14 about this a great deal. And it is our conclusion that these
15 line items typically represent hard earmarks intended for
16 specific recipients. We have listed these projects as earmarks
17 even though, for many, the DOD says it awarded the money through
18 merit-based, open competition.

19 We have a sense of skepticism about that for a couple
20 of reasons. Congress members routinely issue press releases
21 saying that they secured a particular line item appropriation and
22 that it will go to a specific university, and after the DOD holds
23 its so-called open competition, the earmark goes to that
24 recipient for the exact amount specified by Congress. And
25 Congress issues these press releases before the DOD conducts
26 these evaluations.

27 These so-called competitions are typically called
28 "broad agency announcements" or BAAs. The Defense Department
29 uses BAAs to solicit research proposals covering a broad range of
30 stated scientific areas of interest to the agency.

31 According to the DOD officials we have talked with, the
32 agency typically asks the intended recipient of an earmark to
33 submit a proposal corresponding to the specific research topic in
34 the line item to be evaluated through the BAA process.

35 The specific research topic named in the appropriations
36 act may or may not correspond to a topic of interest named in the
37 BAA.

38 In theory, other applicants are free to submit

1 applications under the BAA for the same money. In practice DOD
2 staff members have told us the agency usually learns through
3 informal contacts with Congress that Congress had a particular
4 recipient in mind for that line item. And then typically the
5 agency tries to satisfy the request.

6 This may involve asking the intended recipient to
7 refine the proposal until it meets or exceeds a minimum threshold
8 of scientific merit.

9 Often the topic of the line item is so specific that it
10 is carried out at only one university in the nation that
11 specializes in that area of research, and it was that university
12 that got its member of Congress to insert the earmark. So that
13 competition becomes a limited competition with only one member
14 really in the running.

15 Let me say, DOD staff members tell me that they ignore
16 the intended recipients of these earmarks at their peril. They
17 have been dressed down by Congress members when they interpreted
18 the lack of a named recipient in the line item as giving the
19 agency license to award the money to someone other than the
20 recipient favored by Congress. And as a result, agency staff have
21 learned not to buck Congress.

22 The attitude of some DOD staffers toward these line
23 items is also telling. They sometimes privately refer to
24 earmarks as dues or tax that the DOD much stomach, however
25 reluctantly, in order to win the support of Congress for the
26 agency's broader mission and priorities.

27 All this said, when one is speaking on the record, we
28 really have little choice but to call this process an open,
29 merit-based competition. Federal Acquisition Regulations dictate
30 that when Congress does not specify the recipient of a line item
31 appropriation, the DOD is legally bound to use merit-based
32 competition to select one.

33 What DOD does not say is that the Federal Acquisition
34 Regulations give them several criteria for picking recipients,
35 and one of those is the agency's interests. And it seems
36 reasonable to assume that the agency would have a major interest
37 in not offending Congress, and would act accordingly.

38 That the recipient will be whomever Congress intended

1 where no recipient is specifically named is supported by all of
2 these observations. And we have concluded that we should
3 consider as hard earmarks all line item appropriations that the
4 DOD gives to universities through the broad agency announcement
5 process, but only in those cases where the DOD gives the majority
6 of funds from that line item to one university or college.

7 And I should add that in some cases, DOD staff members
8 do not claim to use the BAA process at all for particular line
9 items, and confirm flatly that Congress intended them as hard
10 earmarks, which they are.

11 Let me say one other thought about merit review. We
12 have heard the argument that -- well, actually this goes more to
13 limited competitions -- we have heard the argument that some
14 earmarks are not really earmarks, that these earmarks go to a
15 group of universities within the expertise in a specific research
16 area, and that there are only a handful of universities with that
17 expertise in the country. So under this reasoning, Congress is
18 providing an earmark for that field of research, but not
19 specifically those universities. They just happen to have that
20 expertise.

21 The Chronicle does not try to differentiate between
22 those cases and cases where the intended recipient may appear to
23 have no substantial track record in the specific research topic
24 that is the subject of the earmark.

25 Also, some agriculture grants go to land grant
26 universities through Hatch Act or formula funds. We do not
27 classify those as earmarks even though the researchers that
28 receive those funds do not undergo merit-based, open competitions
29 sponsored by the USDA.

30 The Chronicle has made a judgment that formula funds
31 are a long-standing appropriations mechanism that predated the
32 rise of hard earmarking for university research in the early
33 1980's. So formula funds can reasonably be considered as
34 distinct from hard earmarks.

35 With that I will turn over to our next panelist.

36 MR. KOIZUMI: I will be speaking today mostly based on a
37 handout that is at the back of the room. Yesterday we released
38 this draft of a new effort to try to enumerate earmarked R&D

1 funds in appropriations bills.

2 As you know, AAAS follows R&D throughout the
3 appropriations process, and as part of that, we wanted to take a
4 look at a subset of R&D in the federal budget; and of course
5 those are the R&D earmarks. It is something that we have
6 resisted doing in the past just because of the central problem of
7 this panel, which is how do you define an earmark, and how do you
8 make it really an operational definition?

9 Everyone has different definitions of what an earmark
10 is, and you can take examples such as Senator John McCain's
11 website, which has his own criteria for what is an earmark. And
12 then also some of the definitions we have already heard.

13 And this is complicated by the fact that if AAAS were
14 going to do this, we wanted to do this in a kind of a real-time
15 process as the appropriations bill moves forward. Recognizing,
16 of course, that if we want a retrospective look at what has
17 happened in years past, then the Chronicle is the authority on
18 it, as they have the earmarks detailed for the 2001 budget. But
19 AAAS wanted to take a look at what is going on right now in
20 Congress. And so we attempted to come up with some kind of a
21 definition first in our analysis. And that is what we came up
22 with.

23 We tried to keep it very simple so that it fits, in
24 essence, in one sentence. We have defined R&D earmarks as
25 congressionally designated, performer-specific, R&D projects not
26 appearing in agency budget requests. Okay, that's not elegant,
27 but it is simple in appearance.

28 Just a little bit more background behind that
29 definition. Obviously it captures most of the things that we
30 have already been talking about in terms of it being inserted
31 into legislative language, or most often in the committee reports
32 that accompany the appropriations bills. And so it comes as a
33 designation of Congress.

34 And the performer specific part is, I guess, what
35 distinguishes it as an earmark for us. For our analysis, since
36 we look at all of R&D that goes to the universities, as well as
37 the federal labs and other performers, we are focusing on all
38 categories of performers and not just the academic institutions.

1 Part of that is just for ease of use because committee
2 report language has grown increasingly more vague, it is just too
3 much trouble for me to try to determine whether the intended
4 recipient sometimes is a university, or it is a non-profit, or a
5 federal lab, or some combination of those.

6 Also, the AAAS definition, because it fully regards
7 R&D, it includes basic research, applied research, development,
8 and also R&D facilities. And so that distinguishes it somewhat
9 from the OMB definition, which does not include R&D facilities.

10 But as we can see from the Chronicle study and from our
11 study, R&D facilities support is an important part of R&D
12 earmarking. And, of course, it is a big reason why universities,
13 themselves, describe why they pursue earmarks, which is to help
14 in meeting their infrastructure needs.

15 Because the definitions we used specify performance
16 specific, it does not quite take in all of the research that the
17 OMB definition takes in. It doesn't include, for example, the
18 DOD congressionally designated projects in medical research.
19 Those are not agency requests, they are inserted by Congress.
20 But the selection of the performers of that research is through
21 peer review, so I went back and forth on whether to include that
22 in the definition. But I wanted to keep it simple. So it refers
23 to cases where a specific performer or performers is identified
24 in the committee report language.

25 And so those are the definitions that we are putting
26 out there as kind of a first draft, or a first cut at an attempt
27 to get to a working definition of what an R&D earmark is.

28 And as a result of that, we took a look at the
29 appropriations bills for FY 2002 that have gone forward so far.
30 And as you probably know, the appropriations bills that have gone
31 forward so far in the House and Senate do not include the
32 appropriations for DOD and NIH. And those, of course, are the
33 two largest R&D funding agencies.

34 And although NIH, by most accounts, has been relatively
35 free of earmarks, DOD, if you look at the Chronicle study and
36 other studies, has been a very large source of earmarks.

37 And so because Congress has not acted on the budgets of
38 those agencies yet, they are not up there. And because none of

1 the conference reports, the final reports of the appropriations
2 have come forward yet, right now we are still looking at two
3 separate pictures of what the House did in its appropriations
4 bills, and what the Senate did in its bills.

5 And here is the picture of the R&D earmarks. I guess in
6 finding earmarks, it is like a kind of "you know it when you see
7 it" or the "eye-of-the-beholder" kind of project. And so I make
8 no claims to precision on this. It means going through each
9 appropriations bill language and saying, "That looks like an
10 earmark."

11 Some of earmarks are easy to track because if it says
12 \$X million to X-university, that is easy. Some earmarks are a
13 little bit grayer than that.

14 But after inventorying all of those, this is what we
15 came up with. And I guess what I wanted to highlight is which
16 agency's budgets seem to be most affected so far in the
17 appropriations process.

18 And as you can see, the big earmark targets are NASA in
19 the yellow, DOE in the green, and the USDA in the olive. And
20 then that red is NSF. So those are the four largest recipients -
21 - not recipients, I guess; targets, I will say -- of the
22 earmarked funds.

23 And you will notice the House, we counted \$448 million
24 so far for the R&D earmarks. And then the Senate, \$682 million
25 so far. And these, it may be somewhat surprising that the Senate
26 is so much larger than the House. One factor that may be
27 responsible is that so far in the budget process, the Senate has
28 been more generous than the House toward total R&D funding for
29 most of these agencies. There is more money given to them, so
30 maybe they have more money that they can allocate to earmarks.

31 And we have already heard about the impact of some of
32 these earmarks on NASA in past years. And you can see that the
33 trend continues. Each House has allocated more than \$100 million
34 for earmarks in the NASA budgets.

35 DOE, relatively free of earmarks in the House version
36 of the bill. They had a very tight allocation. But on the
37 Senate side, there are some earmarks scattered throughout the
38 science programs, the energy programs, as well as the defense

1 programs.

2 And in USDA, that's traditionally been a target for
3 earmarks. And in fact, as mentioned before, there is actually a
4 specific account called special research grants, where a lot of
5 those earmarks tend to get placed. And that account is basically
6 nothing but earmarks. Over 100 earmarks are in each chamber's
7 version of the special research grants.

8 It also includes earmarks to intramural research and
9 facilities, so there are some earmarks for R&D facilities
10 construction at USDA labs, as well, included.

11 And the NSF, on the House side, where there are \$50
12 million in R&D earmarks. Those are for facilities projects, so
13 they would not be covered, for example, in the OMB definition.
14 But there are two projects in the House version of the bill which
15 are not included in the agency request, but are included in the
16 House version of the NSF appropriation bill.

17 Now moving forward, as the appropriations bill winds
18 down, let me show the next slide. And that's just the table, the
19 condensed version of the table, which appears in the analysis,
20 just to give you the dollar figures for some of these agencies.
21 You can see that they are spread out throughout the agencies.
22 And once again, HHS and DOD are not yet on that list. So it
23 could conceivably exceed a billion dollars in each chamber's
24 version of these appropriations bills.

25 Now the question is what is going to happen in the
26 final conference reports when the appropriations bill is
27 finished? Since it is the first year we have done this; we don't
28 have a way to really predict what is going to happen to these
29 earmarks in the conference. I mean, it could be that the House
30 and the Senate will both get their earmarks, in which case you
31 could expect the total to be far greater than the House or Senate
32 totals.

33 It could be that money will be tight so they are going
34 to have to compromise and they are going to have to take some
35 House earmarks and some Senate earmarks and try to come up with
36 some kind of middle ground. But we don't know. Since none of
37 the conference reports are out, it is too early to even try to
38 determine a pattern for what is going to happen to these

1 individual chamber earmarks.

2 But we intend to try to follow them as the conference
3 reports appear, and report back using the definitions we have
4 developed so far. And of course, I hope this forum will be a
5 useful way to discuss, what is it exactly that we are trying to
6 define and talk about? What is it that we are trying to measure?

7
8 And so I would just like to present this to you as our
9 take on what it is that we are trying to measure, and our set of
10 definitions that have so far proved fairly workable in being able
11 to follow these appropriations bills as they come out of each
12 house of Congress.

13 Thank you.

14 MR. CASTEEN: Thank you. One of the issues raised by
15 the sponsoring organizations as we were putting together this
16 workshop was the sense that all of us have that this is not an
17 occasion for Congress bashing at all. But instead, it is an
18 effort to understand a variety of different perspectives.

19 Daniel R. Pearson is, as I mentioned before, a
20 Democratic staff member in the House Science Committee. And he
21 has come to provide some of his own insight into the process on
22 the congressional side.

23 There will also be complimentary material in the second
24 panel after the break.

25 MR. PEARSON: I think I am the ghost on this panel. I
26 am not going to talk about work I am doing, or work I am planning
27 on doing tomorrow, but work I did seven or eight years ago. And
28 I think I rise more in bemusement than anger to share my
29 experiences.

30 I worked for George Brown, who was then Chairman of the
31 House Science Committee, and I was managing his pork team. Some
32 of you may recall that Mr. Brown decided that academic earmarking
33 was out of control in FY '92 or FY '93 -- I think it went up to
34 about \$750 million -- and he decided he would try and do
35 something about it, both for idealistic reasons, and for
36 pragmatic reasons.

37 Frankly, as an authorizing chair, he saw the increasing
38 use of appropriations bills to legislate and make institution-

1 specific awards as a threat to the very reason for his committee
2 to exist. I think that we had a pretty good team and some of
3 those people are still in town. I am going to mention them
4 because no one remembers they did this work, but they deserve to
5 be remembered.

6 Mike Quear who is still with the committee, and Edith
7 Holloman, who is now an investigator with John Dingle. Beth
8 Robinson, who is actually over at OMB, and Pat Moore, who is with
9 GAO.

10 Let me tell you a little bit very quickly about what
11 George tried to accomplish, and what I think he did accomplish,
12 giving some lessons from what a fight over earmarking brings with
13 it. And then I will tell you what I would do if I was running
14 this fight from OMB.

15 Mr. Brown started out in a typical Brownian fashion in
16 a kind of cerebral way. He decided he would go to CRS and get
17 them to do a big data study of what has been going on with
18 earmarks. And he sent out surveys to 50 schools that had
19 received the earmarks asking fairly innocuous questions. And he
20 took this information and he went over to the floor in September
21 '92 to try and knock out 10 earmarks in the Energy and Water
22 appropriation bill that were designed to have the Department of
23 Energy build hospital facilities.

24 And instead of having DOE make these institution-
25 specific awards and simply striking the money, his amendment
26 said, "Well, you will set up a competition program and at least
27 we will get something decent out of this."

28 He won. He got to the floor. His amendment passed by a
29 two to one margin. And he was very proud and he sort of trundled
30 back and got a lot of good press for it.

31 Three weeks later, last day of the session, in an
32 election year, the Defense Appropriations Conference report comes
33 back. He goes to the floor. He goes through the thousand page
34 bill, only one copy which exists down at the clerk's desk. He
35 finds the 10 earmarks back in that bill, and a rule that
36 protected the earmarks from an amendment to strike them. And he
37 went ballistic, by George's standards.

38 I would like to read one of the things he said. At

1 that time this was all done impromptu. There was no organization
2 to defeat the rule. And if any of you know the House, it is
3 almost impossible to defeat a rule even if you know weeks in
4 advance what the issue is going to be, much less on the last day
5 in October of an election year.

6 He said, "Let me say to my colleagues this last minute
7 effort to revive 10 projects overwhelmingly rejected by the House
8 represents precisely the thing that the American people are
9 rebelling against. A small click of powerful members sitting in
10 a back room, sneaking through things which had no consideration,
11 and getting them through without anybody knowing what they are.

12 I had to stand up here and look through a thousand page
13 bill until I found that one paragraph which reversed what we did
14 just three weeks ago.

15 Mr. Speaker, I consider this to be the most egregious
16 insult to the privileges of the House that I have ever seen in 28
17 years here."

18 And you know that George was not typically subject to
19 such fits of anger, if you knew George Brown. At one point in
20 the debate, he physically moved Tim Valentine aside to grab the
21 mic and tell Bob Traxler that -- well, what he said is not
22 actually recorded verbatim in the Congressional Record.

23 He came back from that floor experience and decided
24 that he couldn't be quite so gentlemanly if he was going to make
25 any progress, because clearly if you are going to strike 10 new
26 merits and find them pop up again, a kind of "whack-them-again"
27 game, he is going to get nowhere. And so when he decided to
28 become less gentlemanly, I think that is when I came in, which
29 would sadden my mother to hear, but it is true.

30 I had been working for Mr. Boehlert as his science
31 committee staffer to stop the Super Conducting Super Collider and
32 we just beat Mr. Bevil (spelling?) on a vote to kill the project.

33 And so they figured, well, you know, he has some
34 success with the appropriators. We will let Pearson and these
35 other really smart people do something and then see if they can
36 get anywhere.

37 We adopted a more aggressive strategy. We decided that
38 earmarks were like mushrooms; that they flourished in the dark.

1 And so our strategy would be to shine some light on the whole
2 process; the lobbying, the concentration of awards to schools
3 that just happened to be in members' districts, members who are
4 cardinals in the appropriations committee. We would haul schools
5 in. We would ask for documents, and we would sort of rip the lid
6 off the process. Well, rip is far too strong a word, but we
7 would lift it a little bit.

8 There were three legs to the approach. One leg was a
9 kind of real-time analysis -- the kind of think that Kei is doing
10 -- of what was contained in the bills as they moved through the
11 House, the Senate, and the conference reports, so that George
12 could go over to the floor and enter into the record a summary of
13 what was contained in those bills.

14 The second leg was a pretty aggressive oversight
15 campaign with document requests, with meetings with presidents,
16 with meetings with lobbyists. The most surreal meeting I sat in
17 on was a meeting between George Brown, Gerald Cassidy, and Marty
18 Russo. And Marty Russo is a great guy. He is a machine-style
19 politician from Chicago. He looks like he has just come from the
20 Poland Day parade. And George is quoting Aristotle to him, and
21 Gerald Cassidy is saying how he is just a simple boy who came to
22 town to help feed the hungry. Wow. This is very strange.

23 And now he skis in Gstadd and has an island somewhere
24 now. But this is what this town can do to you, I think.

25 In any case, the third leg was an aggressive press
26 campaign. We took what we learned in our real-time analysis and
27 we fed it to the press. We took what we learned from staff
28 visits, and from document requests, and from meetings with
29 university officials, and we fed it to the press. We were pretty
30 shameless about it, and we had a great press secretary, Rick
31 Borschelt, who did that. And George Brown got more good press
32 for his pork fight than anything else he did as chairman.

33 It was purely serendipitous because he cared nothing
34 about seeing his name in print or his picture on the news, but he
35 got good press.

36 The other thing, though, that came from this
37 -- and this was the point of the strategy -- was that we were
38 attempting to embarrass schools who consistently indulged in

1 earmarking. We were trying to figure out what is the value of
2 this moral hazard, moral peril? What are you willing to give up
3 if you really want this money? How much embarrassment can you
4 stand? How shameless are you? And that is to put it very
5 crassly, but that was the motivation.

6 We had some success. And let me tell you what our
7 definition of earmarks was, because as we did this real-time
8 analysis, much as Kei is doing, we had to make really quick
9 decisions of what to count and what not to count. We didn't have
10 the luxury of waiting and checking with agencies, and I
11 appreciate the effort of the Chronicle. Frankly when I use
12 numbers, I always use the Chronicle numbers because they are much
13 better numbers than we had.

14 Our definition was that if it was an institution
15 specific award for a project that had neither been requested by
16 the administration, nor authorized by Congress, and whether it
17 was contained in report language or in a bill, that was an
18 earmark. And we added that little caveat on authorization by
19 Congress because we recognized that under the Constitution,
20 Congress does have the power of the purse, and also the right to
21 organize itself by its own rules. And our rules said that if you
22 authorize a project and then appropriate for it, it is a proper
23 project.

24 And I think Sarah's definition, the OMB approach is
25 attempting to get at some of the same considerations from a
26 different angle. And I am pretty comfortable with the definition
27 that has been laid out there. But that's what we worked with.
28 George would be the last person to say that the House has no
29 right at all to make specific awards. But he thought that a
30 proper process should be followed if you were going to do it.
31 And frankly, if we had ever been asked to authorize specific
32 institutional awards, we would have done it as a general
33 competitive program. We had already sort of carved that out as
34 our reaction.

35 And the next steps were going to get bloodier. In the
36 next Congress we were going to subpoena leading lobbyists'
37 records, and we were going to target specific schools that were
38 very frequent earmark recipients, and we had begun to build a

1 coalition with other authorizing chairs who also saw the
2 appropriators behavior as a threat to their position so that we
3 could get some rules changed.

4 But we lost the House, and so we will never know
5 whether that would have succeeded or not. We did determine that
6 virtue is worth \$150 million. That's how much we could reduce
7 the earmarks by over two years. It was \$760 million in FY '93.
8 When we stopped our campaign, it was \$600 million a year in FY
9 '95.

10 Whether the next steps would have lowered it still
11 more, I don't know.

12 Lessons; appropriators take all this really personally.
13 James Savage can tell you the work he did for CRS, which later
14 fed into his book, that is the only report, the report he did, is
15 the only report that CRS has ever withdrawn. And it was done
16 under pressure from appropriators.

17 George was told on many occasions by intermediaries
18 with some of the cardinals who were particularly offended by his
19 behavior that his chairmanship was at risk.

20 DOD officials received a document request from us for
21 information on particular earmarks. They were told by the
22 chairman of the House Defense appropriations subcommittee that
23 they were not to comply with that document request. That
24 struggle resulted in a meeting between that chairman and Chairman
25 Brown, moderated by Speaker Foley, before we got our documents.

26 In fact, I sat in a suit waiting for a subpoena meeting
27 to begin -- I was testify as to the need of the subpoena -- when
28 George got the call from Tom Foley asking him not to do it.

29 I heard from Pentagon officials who had been working
30 with this on some of the stinkier earmarks that they had been
31 told by staff from the appropriate subcommittee, the appropriate
32 appropriations subcommittee, that if anyone was found cooperating
33 with us, they would find their next desk assignment in Alaska.
34 And they stopped giving us information.

35 So they take it personally and they can play rough.
36 They went after staff, in this case me. I had a very pleasant
37 conversation with a lobbyist from the University of Alabama at
38 Birmingham -- and I don't know if the gentleman is here today or

1 not -- and for some reason I decided to invite one of my staff to
2 sit in with me and listen to my end of the conversation. I don't
3 know why. I had never done that before.

4 Within 24 hours, one of the members of our committee
5 had heard from Tom Bevil that I was badmouthing this member, and
6 I won't even tell you what was said. And George was able to
7 reassure them that I hadn't, and I was able to say, "I have got a
8 witness. This person's name didn't even come up in the
9 conversation."

10 On another occasion Mark Hatfield sent a letter to
11 George -- and they were old friends from the anti-war movement --
12 saying, "Did you know you have a staffer who is so impertinent as
13 to use the word subpoena with a very honorable president of the
14 Oregon Health Sciences University. I think if you knew that, you
15 would terminate him immediately. So I am letting you know, he
16 used the word." It was the strangest letter. But basically he
17 wanted me gone.

18 And some of you in the room may remember that Mr.
19 Murtha actually thought that the university community was too
20 sympathetic to George's campaign. And in FY '95, the House
21 version of the defense bill cut the science account, by \$900
22 million. And the rush to try and figure out some way to mollify
23 him in the academic community was stunning. I think he
24 ultimately was given a Friend of Science award. Well, I wasn't
25 going to mention the organization.

26 So this leads to my next observation. Your allies are
27 going to be scarce if you decide to take this fight on because
28 appropriators, some of them anyway, are very good at using the
29 levers of power that are in their hands. And I respect them for
30 that. I don't think I have any critique, actually, of some of
31 the reactions. I am not sure I would not have done the same
32 thing if I sat where they sit.

33 Joe Wyatt was a university chancellor who came forward,
34 and was very articulate on why earmarking made no sense. He was
35 a nice counter-weight to John Silber who argues forcefully that
36 earmarking is a fair and just act.

37 But for every Joe Wyatt, there were probably 800
38 university chancellors and presidents who wouldn't be caught dead

1 saying a nice thing about George's effort, at least not in
2 public.

3 There are plenty of people who will tell you in private
4 that they are behind you 100 percent and they are literally
5 behind you. They will not step up and say anything. And even
6 now I am told that earmarks are supposed to be a problem, and I
7 haven't worked on this in years. I pay no attention to this.
8 None of my bosses care. I read the Chronicle. I am sort of
9 vaguely aware of what's going on.

10 I understand, though, that just a year ago, AAU gave
11 Mr. Murtha and Mr. Lewis Friends of Defense Science awards. And
12 the president who gave the speech honoring them was from
13 Pennsylvania State, which is one of the big earmark recipients,
14 over \$100 million over the last decade.

15 So you tell me you worried about this and you are
16 serious about it, but I don't know. I am not sure that you
17 really are.

18 If Mitch Daniels and OMB are serious about taking this
19 on, I will tell you what you do. You issue guidance to agencies,
20 preferably in an executive order saying, "From this day forth,
21 you shall make no report that is contained in the report
22 language. It's not law, it's not amendable, it's not debatable
23 on the floor. When the president issues a Statement of
24 Administration Policy that is not based on what is in report
25 language, it is based on the language of the bill, the actions of
26 the agency should reflect that." If you're really serious, do
27 it.

28 Now the next day all OMB staff will be fired, and their
29 desks sold off, but it would be a brave and bold move. Or as the
30 British say, a courageous move. Which means, "Yeah, it's right,
31 but it's political suicide."

32 A less dangerous approach would be to issue guidance to
33 agencies, to get a little tougher in managing earmarks. If you
34 get a research earmark fine. Make the recipient go through the
35 hoops of coming up with a proposal that actually does something
36 for the agency. And until they get it in that condition that you
37 can live with it, don't fund it. If it takes 10 years, don't
38 fund it.

1 Take the initial proposal and submit it to what ever
2 merit or peer review process you have in-house, and inform the
3 appropriator who supported it just how well it performed when
4 measured against other competitive awards.

5 If it is a facility -- and time and again we hear that
6 there is not enough facility money in the federal government and
7 I am sure that overhead costs don't cover those needs. I think
8 there is a real need there. We have an authorized program at
9 NSF, or at least it used to be authorized, it was for \$250
10 million.

11 Not anymore? Well, Sarah would know. In '93, it was
12 \$250 million and the appropriators found \$37.5 million.

13 Meanwhile they were coming up with hundreds of millions
14 for earmarked facilities. You can request a facilities program
15 and we will be happy to do it. But on facilities, come up with
16 milestones, come up with clear cost-sharing agreements, and a
17 contingency that says if you exceed 15 percent of the cost, we
18 terminate you. And then hold them to it. Don't fill in their
19 needs later. Just hold them to it.

20 There are other things I would do. Find your allies on
21 the Hill and feed them the information. John McCain loves this
22 stuff. I know there are political differences. I am told there
23 are political tensions, perhaps, between some in the White House
24 and Mr. McCain. You can compound your differences on this issue.

25 And he would love having inside information on the worst
26 earmarks.

27 You can raise the cost to frequent earmark recipients.

28 Ask DCAA, the Defense Contract Audit Agency, to go out and
29 validate the auditing systems of schools that rely on earmarks.
30 It seems like harassment, but frankly they are getting tens of
31 millions of dollars, you ought to know if they know how they are
32 spending it. You can also ask them to go back and look at the
33 books on big grants and contracts and scrub them. You can ask
34 IGs to do that.

35 In fact the IG over at DOE just issued a report a
36 couple of days before my committee moved to energy authorization
37 on financial assistance for biomass ethanol projects, in which
38 the IG chastises DOE for funding, and the way they managed

1 earmarks to biomass. Have IGs do this.

2 Raise the cost to schools pursuing and accepting
3 earmarks with the tools of management you have at hand. It is
4 easy to do. It is not pain free, but it is easy to do. And
5 where you find waste, fraud and abuse -- and you will -- seek
6 recoupment. And a few of those stories in the Chronicle -- and
7 the Chronicle would love to publish them -- would do wonders in
8 terms of changing the environment.

9 And finally, ask program managers to keep track of
10 examples of the worst abuses and feed those to the Hill or to the
11 press as you see fit.

12 Schools, which schools and organizations -- and I am
13 speaking here ostensibly to many representatives from AAU and
14 NASULGC -- I don't actually expect you do very much. And I guess
15 at a minimum I guess I could suggest you could stop lauding the
16 work of earmarkers, but I don't really even expect you do that.

17 I would say that there are some schools, prestigious
18 schools, that don't take earmarks. I would build a core of
19 presidents, chancellors, to begin to educate members on the Hill,
20 authorizers and appropriators who are not cardinals, on the costs
21 of earmarking.

22 One of the things that OMB could be doing -- and you
23 can use GPRA (the Government Performance Results Act) metrics to
24 do it -- is ask agencies, what did you have to give up to fund
25 the earmarks? Theoretically, we can identify some of that stuff
26 now.

27 And once you can begin to pinpoint places where you cut
28 stuff, competitive programs that you had to give up or slow down,
29 then you can begin to tie that to schools that tended to get
30 money from those programs. And you can begin to show members
31 that there is a cost, there is pain, every time you let the
32 cardinals distribute so much money in earmarks. And that changes
33 the political environment on the Hill.

34 And I would also use that same core to begin a pledge
35 movement, which is useless, but you have got to at least appear
36 like you are doing something. I wouldn't sign Mr. Daniel's
37 pledge, but I would start my own effort.

38 Just say, "Look, we are not going to take earmarks, and

1 either you are signing on it, or you are not." We certainly know
2 where you stand depending on what you do.

3 Mr. Brown used to be asked what level of earmarking
4 would he tolerate. What is the amount at which you would give up
5 your campaign, because it was a dangerous and bloody thing to do.
6 And he would always play it coy. He would never say, "Well, you
7 know, \$15 million would be okay."

8 He knew there was always going to be some earmarking.
9 There are some you cannot shame into changing their behavior.
10 There are some who will make opportunity a virtue.

11 But I guess I would turn the question around at this
12 point in time and ask the question, what is the ceiling of
13 earmarks people believe are harmless? Is it 5 percent, which
14 seems to be Sarah's number? Is it 10 percent, 25 percent, 50
15 percent? How high are you willing to tolerate before you say,
16 "No, we should stop." And then what tools do you think you ought
17 to use to try and roll it back?

18 The moral inhibitions towards earmarking are clearly
19 deteriorating year after year, if the Chronicle numbers are
20 anything to judge by. And I don't see any check in the House,
21 any check in the Senate, any check yet in place in the
22 administration to stop the growth of those awards. All of the
23 political pressure is towards continued growth.

24 So if someone can tell me what the top end is, and tell
25 me how you would react when we blow through it, as we surely
26 will, I would feel better about this whole thing.

27 Mr. Brown understood that dynamic, and that was part of
28 the reason he was coy about what the bottom end is, because there
29 is no real bottom end. Wherever you start, it is going to grow a
30 little more. But also because he knew that the top end was
31 unimaginable.

32 We predicted that in FY 2000, it would be \$1.6 billion.
33 We ended up being not too far off the mark.

34 I am going to end with a quote from Plato, which, for
35 anyone who knows George would know that was perfectly
36 appropriate. It is from Socrates' defense when he was on trial
37 for his life in Athens. And the quote is, "Where a man has once
38 taken a stand, either because it seems best or in obedience to

1 his orders, there I believe he is bound to remain and face the
2 danger."

3 And I guess my question is, who here is ready to stand
4 where George Brown stood? I am not sure anyone is, because the
5 price is very high.

6 Thanks.

7 MR. CASTEEN: We have ample time for discussion, but I
8 thought we would start with comments from the panel.

9 MS. HERRIGAN: One difference between our definition and
10 Kei's definition is the inclusion of facilities of the facilities
11 section of the R&D budget.

12 We are perfectly willing to work with agencies and with
13 other stakeholders to refine our definitions, but we would have
14 to give that some thought because we very clearly wanted these
15 methods of allocation to sum to the total amount of research.
16 And, in fact, our original purpose in coming up with these was
17 not to get at congressional earmarks per se; that was kind of a
18 byproduct of coming up with these definitions, which we are very
19 willing to highlight because our administration supports us on
20 this issue.

21 I am open to hearing the pros and cons of that, but it
22 is clearly something that we would have to discuss.

23 Well, why don't you guys go ahead.

24 MR. BRAINARD: As I said, it seems like there is
25 substantial similarity among the definitions except for your not
26 including facilities. I mean, a minor difference from what Dan
27 just said would be that he wouldn't include projects that were
28 authorized by Congress, but I think those are very rare at the
29 level of an individual institution.

30 MR. CASTEEN: Anyone else? Okay let's go to discussion
31 from the floor. There is one microphone that I can see where
32 George is standing. I think that if you will use the microphone
33 and give us both your name and your organizational affiliation,
34 it will help to place the context of the issue.

35 George, do you --

36 MS. HERRIGAN: Could I just say one more thing. Another
37 difference that we have is that we included non-mission oriented
38 research, and I would be interested in anyone else's thoughts

1 about whether that should be included in our definition of
2 research performed at congressional direction.

3 MR. PEARSON: Well, we thought about that also, but then
4 there are cases, clearly medical research and DOD kind of flags
5 their attention saying, "What is this doing here?"

6 But I think in other examples, it wasn't sure if we
7 could draw the line as clearly as to whether a project was or was
8 not in an agency's mission. And so that is why it was excluded.

9 And also because I guess we wanted to focus on this performance
10 specific aspect rather than Congress designating a certain topic,
11 for example.

12 MR. LEVENTHAL: I am George Leventhal, with the
13 Association of American Universities, one of the organizations
14 that put this panel together, and thank you so much to John
15 Casteen and all of the panelists.

16 Dan Pearson uses the word "moral" a couple of times and
17 I want him to clarify that for me with respect to -- I think we
18 have a consensus today that we don't view this as a moral issue,
19 more as an issue of professional standards and practices, public
20 policy, and science funding policy. So these are issues on which
21 we can have policy disagreement.

22 Our sense is that however precisely we define it, the
23 increase is so striking and dramatic over recent years that it
24 increasingly merits serious consideration as a matter of public
25 policy and fiscal policy. But it certainly has not been our
26 desire to cast moral aspersions on anyone who is in the business
27 of funding science in any particular way.

28 I also want to say that both Mr. Murtha and Mr. Lewis
29 were substantially supportive of the significant increases in
30 peer reviewed science and basic science, and, at least in part,
31 that is the reason why the university association decided to give
32 them Friends of Science awards.

33 DR. VAITUKAITIS: Hi, I am Judy Vaitukaitis with the
34 National Institutes of Health. Sarah, I have a question. Is the
35 specific earmarking for facilities at universities a reflection
36 of programs addressing the needs?

37 MS. HERRIGAN: Well, that is certainly what we have
38 heard from people who want facilities. But I think several of

1 those people are under the mistaken impression that the federal
2 government should fully fund the cost of research at
3 universities. And we have spent a considerable amount of time
4 with the Office of Science and Technology Policy -- granted, this
5 was in the previous administration -- talking about the
6 government/university partnership. And we clearly believe that
7 the federal government does not have responsibility for the full
8 cost of research at universities, that it is a
9 government/university partnership. And we have made the decision
10 in several agencies, including the National Science Foundation,
11 that it is not the National Science Foundation's role to fund
12 facilities at universities.

13 We do clearly invest a considerable amount in
14 facilities at universities through indirect costs, or facilities
15 and administration costs, which we believe is part of the cost of
16 doing business at universities. But it is not clear, to me at
17 least, that it is a federal role to fund facilities at
18 universities.

19 DR. VAITUKAITIS: Isn't it true that costs earmarked
20 specifically to facilities overhead for the nature of the
21 research intended go to universities, but smaller schools and
22 minority-serving institutions are at a disadvantage?

23 MS. HERRIGAN: I don't have those figures right in front
24 of me. I sure you could make that argument either way.

25 MR. CASTEEN: I see a hand in the back. Could I ask
26 you to come to the microphone so we can hear you.

27 MS. WELLS: My name is Nan Wells, and I am with
28 Princeton University. Rob Ketchum and I wrote an article, I guess
29 it was in 1979, talking about what was going to happen with
30 earmarks if we didn't get some programs out there. And I think
31 Mr. Pearson has given us a good idea of the stick part of this
32 formula, but the lady from NIH was beginning to refer to the
33 carrot part of it, as well.

34 I think there are a number of programs that could draw
35 people, some people, away from earmarks and we proposed a revival
36 at one point of the POSIT program. The programs that revive as
37 development funds to smaller institutions, and allowed them to
38 compete against institutions of a similar size and type for funds

1 to develop, either the whole institution in its science areas,
2 the departments within those smaller institutions, or colleges.

3 I mean, it was a very nicely phased program. We also
4 recommended that facilities be supported through the NIH, and I
5 am sure Sarah is aware that the ones that come through the
6 indirect cost mechanism come after you have made the investments,
7 so they would be reverse, they are not forward coming, as a
8 competitive program would be.

9 But I think there are far more creative ways to look at
10 this. I will be honest. I am like Mr. Pearson, discouraged. I
11 think now it is so widespread, that it is very difficult to stop.

12 However, I think there are ways to limit, and I think
13 if we all got together and were a bit more creative, we might be
14 able to come forward.

15 Now there was one problem at the time that he is
16 talking about and the time that Rob Ketchum and I were looking
17 at. And that was that people who saw any appropriations for
18 research as offsetting, or any appropriations for facilities as
19 offsetting against the research grants, and there was
20 considerable opposition from the faculty at that time to getting
21 involved in funding large facilities programs.

22 There was also concern that if you included facilities
23 program at the NSF, it would then be subject to earmarking and
24 would introduce earmarking into the entire agency.

25 So I just add those to the discussion.

26 MS. HARRIGAN: Could I just say that we think \$95
27 billion a year in federal R&D is an appropriate carrot.

28 MR. PEARSON: Well, I actually meant -- I really
29 appreciate those comments. I had three different forty-five
30 minutes talks that I boiled down into one crisp 90-minute
31 version, but I actually agree that the stick isn't enough, and
32 those are the kinds of carrots that need to be offered.

33 I think there does need to be a more aggressive effort
34 by the government to set up facilities programs, not just at NSF,
35 but also NIH, DOE, wherever it seems appropriate.

36 My committee would be happy to authorize them. I would
37 hope the appropriators would be happy to fund them. And that
38 would begin to lure some people away from earmarking. I really

1 do believe that.

2 MR. CASTEEN: Anyone else?

3 MS. OLSEN: Kathie Olsen, from NASA. Just a follow-up
4 on the NSF. I had the opportunity of chairing the facility peer-
5 review grant committee for four years while acting at the
6 National Science Foundation.

7 And what was really neat about the program is the first
8 year a school competed against the first tier, the second tier,
9 third tier. So you really had a sense of competition. And I
10 believe that over the four years, every single stage did receive
11 a peer review grant facility. And so again that was positive.

12 But I agree with Sarah in terms of, what is the role of
13 federal government in terms of supporting R&D?

14 But what I wanted to say is that NASA, to cover the
15 earmarks that was given to the Office of Biological and Physical
16 Research, has, cut more than just the life sciences grants. And
17 that has been put in the Chronicle, the Post, et cetera.

18 We had to cut 5 percent of all of the grants, physical
19 sciences, commercial centers, our institutes. So basically 80
20 percent of our programs are given peer review grants, and we had
21 to cut 5 percent of the entire amount.

22 What's interesting about that is that the number one
23 complaint that I got was not from the Principal Investigators,
24 and actually my last job of doing it is if they feel the pain,
25 they will complain. If I spread it out, what happens is when you
26 say, "Well, I am going to limit the amount of grants I am going
27 to make in the next year, then by 10 percent, those people don't
28 understand the impact of these earmarks.

29 But my biggest complaint came from the universities
30 that got these earmarks because their PIs that were cut went to
31 their vice-president of research for their administration, and I
32 was called, and then Golden was called, because I was hurting
33 their PIS, and actually targeting their PIs. And that is just a
34 follow-up in terms of what you said, but thank you.

35 MR. GREENBERG: Dan Greenberg. Every five years of so
36 an incident of NIH and some other agencies go through an exercise
37 in which they review their peer review system and conclude that
38 in certain cases it is risk averse, in some cases sterile, and

1 decide they are going to make it over. NIH is currently going
2 through this sort of exercise.

3 Where is there evidence that peer-review produces
4 purely scientific outcomes relative to what happens under the
5 congressional pork system?

6 MS. HERRIGAN: That is certainly an interesting
7 question, and one that we are trying to get at through the
8 Government Performance and Results Act. And we would agree with
9 you that there are limitations of the peer review system. And I
10 think that is what I was referring to earlier, when we came up
11 with our five different categories and pointed out that there are
12 some cases where the peer review system is not an appropriate
13 mechanism.

14 In fact, if a program manager is appropriately managing
15 his or her portfolio, there should be some very high risk kinds
16 of projects funded that would never be able to pass peer review.

17 And, in fact, an agency like NSF has that option with
18 their Small Grants for Exploratory Research where program
19 managers have the option of allocating, I believe it is up to 5
20 percent of their program funds, for very high risk kinds of
21 research that would not survive a peer review system.

22 So I think we are sensitive to the portfolio and to the
23 limitations of the peer review system, but we would argue that
24 for the vast majority of funds, that peer review is an
25 appropriate mechanism.

26 MR. PEARSON: Can I add something, Dan? You and I have
27 a long history on this issue, and I know where you have stood
28 during George's fight, and you probably know where I stand.

29 I can tell you we did get a very useful document once
30 from the Department of Energy. It was always hard to get
31 agencies to tell us what they had to give up to fund their
32 earmarks. But in return for funding various medical facilities,
33 including building a telemedicine facility at OHSU out in Oregon,
34 DOE specified that they had to cut their biological research into
35 comparative DNA analysis by \$852,000. They cut their structural
36 biology program by \$489,000. I can go on and on. It goes on for
37 pages here. So it is not always even a question of which science
38 would be good science. It's, do you build bricks and mortar? It

1 does nothing for the agency. Or, do you actually help the agency
2 do the science we intend them to do?

3 This is why I think ignoring facilities costs is really
4 a non-starter. Facilities eat an enormous proportion of the
5 earmarked money, and that money does come from research accounts.

6 I think Kathie's story points that out as well. The
7 same thing happened, by the way, about a decade ago at Navy.
8 They tried to do exactly the same thing, and they got exactly the
9 same response.

10 MR. BRAINARD: I would just add that I think it is a
11 good point to point out that there is a relative absence of solid
12 evidence about the efficacy of the peer review system. It seems
13 to have evolved more as a culturally sort of acknowledged
14 mechanism for distributing funds.

15 But I mean, I guess I would just encourage all of us to
16 consider whether the alternative of congressionally selected
17 projects on the face of it, is better, given that the staff
18 members and members of Congress are getting proposals directly
19 from universities, do not necessarily have a whole lot of
20 technical expertise, and are not in a position to compare those
21 requests with a range of other possibly similar requests from
22 across the country.

23 MR. MALAKOFF: I am David Malakoff from Science
24 Magazine. I am curious if the panel had any comments on the
25 politics of this in an era of a contracting economy. There is
26 one analysis that says that earmarks was made possible by the
27 surpluses and the fact that you could have these earmarks
28 essentially without taking any political strikes. You could
29 essentially add, you could plus-up the budgets without taking
30 money away from any other important constituency.

31 And they are predicting that no matter this effort, or
32 any other effort, you are going to see a decline in earmarks
33 because you are no longer going to be able to plus-up the budget
34 without cutting somebody else's program.

35 MR. KOIZUMI: I think we may start to see that because
36 a lot of this change has actually taken place between July and
37 September. I mean, suddenly the surplus projections changed, and
38 looking at surpluses, looking at deficits, and also because of

1 the terrorist attacks. And most of the bills that we were
2 looking at were written before July, in June and July, when
3 surplus projections were still rather robust.

4 And I guess what will be interesting to see is, as
5 these conference reports come out, and they have to be drafted in
6 a much changed budgetary outlook, and also with a budget ceiling
7 that the President and Congress just agreed to yesterday, which I
8 think they really intend to enforce this year, so it will be
9 interesting to see comparing the House bills and the Senate
10 bills, and then the conference reports, how that is going to play
11 out.

12 I suspect they will not be able to just fund all those
13 House earmarks and all of the Senate earmarks and just make
14 everyone happy. But they are going to have to make some choices.
15 Either that, or they are going to have to cut pretty deeply into
16 the core programs, which I don't think anyone really wants to do.

17 MR. LUBELL: I'm Mike Lubell with the American Physical
18 Society, and I am also the chairman of the physics department at
19 a university in New York, and I still do research. I have been a
20 recipient of many federal grants and a reviewer of many.

21 I would like to make a comment, Dan Greenberg brought
22 up the issue, of whether, in fact, peer review is a valid system.
23 And then the issue of much ado about risk averse management.

24 As a reviewer of proposals, I think virtually every
25 scientists takes a risk adverse approach. We don't cut people a
26 hell of a lot of slack. And it is easy to have administrators,
27 as indicated at NSF, be in a position to make a decision to fund
28 things that they consider to be high risk. The scientific
29 community, itself, can expect there to be a review of it. I
30 think part of it is that the feeling is that if money goes to
31 finance a high risk project, that is money that is taken from
32 somebody else who has some very worthy project.

33 And this is a serious issue. I would not suggest to
34 anybody that earmarking is a solution, but I do worry about
35 another part of the issue. And that is that today, of course I
36 think there is great recognition that science and technology, and
37 science education tend to be engines of that economic role. And
38 if you look at the demographics, you will find that students who

1 have training in the universities, people who go to the research
2 universities, have something to do with the economic development
3 of those areas.

4 And when you start looking you say, "We did everything
5 in peer review research, the haves become greater and the have-
6 nots lose out. I think that was perhaps in trying to get some
7 more program money into development.

8 There is another issue there that I think we have to
9 grapple with. I don't think it is an easy question and answer,
10 and I am wondering whether the issue, whether it would be a cap
11 that is agreed to, or earmarks, whether, in fact, you can somehow
12 make earmarks pass some kind of hurdle, is it good science?
13 Forget about whether it is the best, or you are going to
14 prioritize it, but does it qualify? And that is the issue. Do
15 you find that it is bricks and mortar without it?

16 That seems to me to be at least some of the issues we
17 are looking to consider. Perhaps we can come to some kind of
18 understanding here.

19 MS. HERRIGAN: If I could just reply to that. As I said
20 earlier, we have been very sensitive to the problem of risk
21 aversion. And one thing we have suggested to agencies -- they
22 haven't taken us up on it yet -- is to institutionalize that.
23 Most of the grants at NSF and NIH, I believe, are awarded on the
24 basis of the best score.

25 And we proposed that you have some money set aside for
26 the best scoring grant proposals, but you have another pot of
27 money that is set aside for the proposals that have the highest
28 standard deviation of scores, thinking that if a proposal gets a
29 couple of excellents and a couple of poors, it is probably very
30 interesting research. And if you institutionalize that into the
31 process, that may be one way of getting the scientific community
32 to want to take more risks.

33 MR. MOORE: I am J.B. Moore from Tulane University. And
34 Sarah, I just wanted to mention that much of the use of these
35 classifications was very helpful in terms of bringing forward the
36 discussion of earmarking and helping bring more clarification to
37 it, and more organization to it. I have two comments, or
38 questions I should say.

1 One is I would very much like to hear your thoughts on
2 the pros and cons of including what had been suggested earlier by
3 the panel in the definition of earmarking. That is, that if a
4 project is authorized by Congress, then it is not considered an
5 earmark, particularly given the fact that the opposition process
6 is somewhat similar in purpose to the congressional branch, to
7 what the budget process is in the executive branch.

8 The second question is, nineteen plus billion dollars
9 of the funding that we have through your survey basically is not
10 peer reviewed, it is not reviewed externally by the scientific
11 peers. I was just wondering if, after you gathered this, if
12 there any concern at all of the fact that as high a percentage is
13 awarded without peer review?

14 MS. HERRIGAN: Let me take on the second one first. We
15 are very early in this data collection, and we actually collected
16 data two years ago in three different categories which we did not
17 publish in the budget because it really takes awhile for a data
18 collection to settle down and for agencies to agree on what is
19 really being asked for, and to be able to come up with a
20 consistent data set.

21 This is very early in the process. We had one year of
22 data that we thought was good enough to publish, which we did
23 last year. And we will certainly continue to collect these data.
24 And we will be looking at these various categories. Our current
25 administration is very much encouraging us to do that.

26 As I did point out, though, we do think that there are
27 reasons for having programs in some of those other categories. I
28 mentioned DOD is very insistent that its programs with internal
29 review by its program managers are equivalent to the peer review
30 process that many of us are used to seeing at agencies like NIH
31 and NSF.

32 We have not particularly discussed the authorization
33 proposal, and quite frankly, it doesn't seem particularly
34 relevant to my branch. The agencies that we cover are NASA and
35 the National Science Foundation, both of which have very broad
36 authorizations, and specific projects are very seldom authorized
37 at NASA or NSF. So we really haven't thought about that, but I
38 have certainly heard that today and will take that back.

1 MR. PEARSON: I guess I should add something since I
2 raised the issue.

3 The reality is that we don't get a lot of
4 authorizations turned into law. The House moves all of their
5 authorizations, and the Senate sits on most of them. NASA has
6 one. NSF has one. Those are the two that we can get through.
7 The Department of Energy may end up with one yet. But we don't
8 do a lot of institution-specific style authorizations in the
9 House.

10 I don't think Mr. Brown, when he included that in his
11 definition, envisioned that he would simply make authorizing
12 chairs players in his process the way appropriations cardinals
13 work.

14 I think he thought that if someone were to come to us,
15 we would set up a general program that would authorize the
16 problem that you were trying to solve, rather than the
17 institution you wanted to assign the money to.

18 And I don't know if the current chairman will take a
19 different view or not. No one has come to him, to my knowledge,
20 and asked him to do anything differently.

21 The reality is, as someone else in the panel said,
22 there are not many authorized programs. Every year we would go
23 through this and we would find two out of hundreds that were
24 actually authorized.

25 And every year we had reminders, "Oh, yeah, that one is
26 authorized. Back it out of the totals."

27 A PARTICIPANT: Al Teich from AAAS. I was struck in
28 listening to Dan's talk with how much seems to have changed since
29 George Brown's campaign of 1992 or 1993, particularly the notion that
30 somehow these earmarks are, as he said, like mushrooms, and they
31 flourish in the dark, and when you expose them to the light, they are
32 going to die. The idea of shaming institutions and members into
33 submission by revealing their earmarks strikes me as somewhat out of
34 date perhaps.

35 I go to trustees' meetings on college campuses and I hear Members
36 of Congress brag about the earmarks they have brought to the campus
37 and get cheered by the trustees. I go to campuses and see laundry
38 lists of this year's earmarks, prepared by administrators, indicating

1 which earmarks we are going to pursue this year, and how we are going
2 to pursue them, etc.

3 What do you do in an atmosphere where there doesn't seem to be
4 any shame left in connection with earmarks?

5 MR. PEARSON: I agree with everything you said, Al, except
6 no one is trying to shame them now. That's the reality. I haven't seen
7 a, "Your Money" segment on ABC in years that profiled some wasteful
8 spending project.

9 I mean we, as staff, when we would go out and do field visits, I
10 will be candid with you, we would look for good camera angles that we
11 could sell to reporters. We would tell them what to look for. That was
12 part of our job. And I don't see anyone doing that.

13 John McCain does these sort of big pork buster approaches that
14 don't single things out at a very low level of detail.
15 If schools see themselves on television in an unflattering light,
16 trustees stop cheering. Not all schools, not all trustees, but it
17 changes the environment.

18 Whether anyone has the nerve to do that again. And I am not sure
19 George should have, frankly. I don't know.

20 MS. HERRIGAN: I would just like to commiserate with
21 you, Al. I recently interviewed for a position at a university
22 that will remain unnamed. And I asked them in the interview
23 process, "Have you solicited or accepted earmarks?"

24 And she said, "Oh, yes. Lots of them."

25 A PARTICIPANT: I am Bob from Georgia University. I
26 wanted to go back to the question that Dan Greenberg asked and
27 ask, what is the evidence? And I guess I was going to ask what
28 you have found yourself because you have been studying this for a
29 long time. But my sense is that we do have an extraordinary case
30 study that we are actually looking at where the appropriations
31 sub-committee has been able to hold the budget down to a finely
32 refined level for a very long time, and that was USDA, for a very
33 long time. And actually I think you could get an evaluation of
34 the quality of science if you do that for a two or three decade
35 period, then you carry that through two or three decades at NSF
36 and NIH. I think there is more of a historical case study that
37 you could do than has been done by the scholars in this area.
38 That it is about productivity. It is about the quality of

1 science.

2 So I would suggest that that is someplace to look that
3 has been pretty well documented.

4 The other point about peer review is that it is
5 compared to what? Because I think there would be a lot of people
6 who would say peer review is not always a testing of using this
7 money more efficiently at NIH or NSF. That's not necessarily
8 peer review. So I don't think you could link those two things
9 quite so quickly into one question. It is not earmarks versus
10 peer review. It is earmarks compared to what?

11 MR. PEARSON: I don't think the cases are very
12 comparable. The control of USDA's budget obviously went to land
13 grant colleges that historically had strength in agriculture. It
14 was a system of a kind, in fact, it is a system that Mr. Brown
15 didn't particularly object to.

16 I do agree that it is not peer review versus earmarks.
17 It is competent civil servants with a mission based in law, and
18 a budget answerable to the President and the Congress, making
19 determination over how best to spend taxpayer dollars, versus
20 staff like me who don't know much except zip codes making
21 determinations about where the money should go.

22 And I think that the premise of Dan's comment was --
23 and Mike Lubell sort of got at this -- the premise was, "Well,
24 earmarking is a counter balance to peer review in its
25 conservatism."

26 And I think Mike Lubell was right to say, "Well, I
27 wouldn't suggest that it actually is an answer to conservatism in
28 peer review."

29 I think that if you look at who gets the money, it is
30 an answer to political power. The people who distribute the
31 money distribute it because of where they are, and they
32 distribute it to their districts or their states.

33 And I understand that. I am a political creature, too.

34 But is that an efficient way to fund research? It is an
35 efficient way to spread money, but is it an efficient way to fund
36 research? And I don't believe it is.

37 But this is a fascinating issue, and I would love to go
38 on at some length if someone would pay me to actually do this

1 work. Which George used to do, but no one does today.

2

3 MR. CASTEEN: Maybe this would be the time to take our
4 break. And we will convene, let's say at 3:30 for the second
5 panel.

6 Let me thank you all that have served on this panel
7 very much.

8 (A short break was taken.)

9 MR. CASTEEN: I should tell you before we start the
10 second session that I overheard in the men's room while washing
11 my hands one person say to another that he thought that in
12 another hour we should have this thing settled, so this is our
13 chance.

14 The first panel was asked to address questions of
15 definition and to try to explore the range of differences in the
16 use of definitions of earmarking in this context.

17 This panel has been asked to look at policy questions,
18 which are obviously embedded in all of the discussions today.

19 But in any event, the title of the panel is
20 Interpretations and Implications of Earmarking. Three panelists,
21 former U.S. Senator J. Bennett Johnston, a Democrat from
22 Louisiana. Judith Vaitukaitis; Dr. Vaitukaitis is the Director
23 of the National Center for Research Resources at NIH. And
24 Raymond E. Bye, Jr., the Vice President for Research with Florida
25 State University.

26 I am going to ask Senator Johnston to begin.

27 MR. JOHNSTON: Thank you very much, John.

28 One of the most important and pleasurable jobs I had in
29 the United States Senate was my chairmanship of the Energy and
30 Water Appropriations subcommittee.

31 We had the largest science jurisdiction of any
32 committee in Congress. We had jurisdiction over the national
33 labs, fusion, atomics physics, high-energy physics, all the DOE
34 programs and renewables, large discretionary programs, everything
35 from education in science to some medical applications at
36 universities. And over the years I really had more contact with
37 scientists in the scientific method and that sort of thing than I
38 guess most any member of Congress. I have spoken to more

1 scientific forums than most scientists have. And I must say it
2 has really been the capstone of my career. I loved it. I loved
3 the scientists with whom I dealt, many Nobel laureates. And I
4 love scientific methods.

5 As a matter of fact, I sponsored in the United States
6 Senate, legislation to require the government agencies in
7 rulemaking to use the scientific method, particularly in risk
8 analysis. I passed it twice in the Senate, but couldn't get it
9 through the House for various reasons. But it is still alive and
10 well.

11 In that very first Congress, back in 1977, when I first
12 got the chairmanship of Energy and Water -- by the way, for 20
13 years, I held the chairmanship or the ranking minority position
14 on that committee -- I had occasion that very first year to speak
15 to a Nobel laureate whose name will be nameless in this speech,
16 but whom you would know very well if I mentioned it. And I was
17 greatly impressed with the responsibility with which I was
18 endowed in that committee.

19 And I said, "You know, I wonder if I ought to appoint a
20 scientist to help me screen these various priorities in nuclear
21 fusion and high-energy physics and all of these things. Without
22 a great scientific background, should I have a scientific
23 screening committee?"

24 And he smiled and said, "No, Senator. That would be
25 the worst mistake you could make."

26 I said, "Why is that?"

27 He said, "Because when you get scientists, if they are
28 high-energy physicists, they believe in high-energy physics,
29 generally to the exclusion of other things. The same thing is
30 true of fusion. The same thing is true of medicine, and right
31 through the various disciplines."

32 It's not always true, of course. But I found, in my 20
33 years on that committee, that that is very, very true.

34 I also found that the judgments that I had to make on
35 that committee in choosing among the various programs, were
36 mainly not scientific judgments. They were more a question of
37 determining the value of a technology, rather than an
38 appreciation of exactly how that technology works.

1 I will give you a little example. A scientist came to
2 us with a technology called Ocean Environmental Conversion, which
3 was to get, simply put, a pipe deep in the sea water in places
4 like Hawaii and Puerto Rico. And the differential would allow you
5 to generate electricity through the conversion of that
6 differential.

7 There were some problems with that, but we were asked
8 to do that. And we had all of the deep scientific discussions
9 about whether it would work and that sort of thing and then I
10 said, "Well, first if this works, how many places can you deploy
11 it?"

12 He said, "Well, Puerto Rico, Hawaii, and we might have
13 ships that we can use."

14 And the point is, they really hadn't thought about the
15 fact that if we developed the technology at great cost, it's
16 application could not be that wide.

17 Those were the kinds of judgments that we constantly
18 had to make. The value of the technology if it works, and to
19 determine its economic feasibility.

20 I mean, this machine you've got -- and by the way, I am
21 still involved with a lot of the technology start-ups. And the
22 scientists come in to my office now. We are able, in the office,
23 to frequently help guide people who are a lot smarter than we are
24 in technology.

25 But the impressions that they have about cost and
26 feasibility and risk and interest and competition and all of
27 those kinds of things. And also we had to determine budget
28 allocations. You know, how much budget allocation do you have in
29 your subcommittee, and how many other priorities do you have? So
30 those are the kinds of things that we had to determine.

31 Let me say that those who oppose peer review, as well
32 as those who oppose non-peer review are going on false premise.
33 That unspoken premise that if you do away with non-peer review
34 projects, that that money would come over to peer reviewed
35 projects.

36 In the case of members of AAU, which has most of the
37 top peer-review money, that money would, the assumption is, come
38 back to you.

1 That, I can tell you, is a false premise. I remember
2 when I was promoting the Superconducting Super Collider, and that
3 is a very interesting story unto itself, and we should have,
4 believe me, should have finished that.

5 Nevertheless, there were some material scientists and
6 material physicists who came up and testified against it. They
7 were just salivating, knowing that if we stopped the
8 Superconducting Super Collider they were going to get all of that
9 money for their area of expertise.

10 And guess what, they were successful. I don't know how
11 much impact they had; they had some. Mainly it was a question of
12 -- that's when everybody was talking balanced budget and they
13 didn't want to cut anything else like Social Security or Medicare
14 or the things that really had the money in them that it was so
15 easy to cut Superconducting Super Collider. Nobody understood
16 what forced electrons were, or positrons, so cut that; it's easy.

17 Anyway they succeeded, and you probably know the story.
18 Not only did they take that money, not only did it not go to any
19 other party at the time, but the whole scientific budget in the
20 ensuing years came down. Because of what we did, we cannibalized
21 and decimated the scientific community, of which the high-energy
22 physicists were very great in numbers.

23 So I can tell you that that would happen here if you
24 did away with these projects. I am a great lover of science,
25 scientists, and the scientific method. But I can tell you this,
26 scientists can be very political and I think in many instances
27 more narrowly political than politicians.

28 Let me give you an example on that. If you know about
29 low-level radiation and the so-called straight line theory, I
30 have studied that a lot. And you have all of these scientists
31 who come in and say, "There is no threshold level of radiation
32 that does harm." And it is just not true. I mean, I am willing
33 to debate that as a non-scientists with anybody who will try to
34 defend it because I have read all of the studies on it.

35 But it is political what they say about it. I had one
36 thing on Yucca Mountain where they were proposing one level of
37 limitation on Carbon 14 which would eliminate one millionth of
38 background at a cost of \$1.5 billion. I mean, there is just no

1 common sense, no scientific method, all politics.

2 They can also be, impractical, spending huge amounts of
3 money. I could give you other examples of this out the kazoo.

4 So while I love them, and I love the scientific method,
5 you know, there is something to be said for politicians who have
6 a constituency out there and a very active, over active press,
7 who look out after them.

8 I can also tell you that peer review can be very
9 personalized. Just because people are in science does not mean
10 you have repealed their quotient of human nature. And it is
11 human nature to go with people you know and people you have done
12 business with.

13 But I do lobbying now. And one reason I am able to be
14 fairly successful is that now I know people and I have
15 relationships with them, and so do the peers. Don't ever think
16 they don't.

17 I can also tell you that there were more Proxmire
18 Golden Fleece Awards for peer reviewed science than there were
19 for congressional earmarks. I have got a list of those, too, if
20 you are interested in those.

21 So I would submit to you that a vigilant press
22 overlooking earmarks is just as solid an indication of the fact
23 that you are going to get a good result as not.

24 And by the way, what's the scope of this problem? OMB
25 did a study that is printed in the budget of the United States
26 for 2002, where they studied this problem. They said that there
27 were some \$44 billion in grants. Of those, \$24 billion were peer
28 reviewed, \$17 billion were generated by the government, itself.
29 You know, like DOE will have a grant, which is not peer reviewed,
30 but is analyzed by the agency. By the way, OMB asked the
31 agencies if that was a problem, not being peer reviewed. They
32 said, "Oh, no. We've got plenty of expertise in-house."

33 But of the \$44 billion only \$2 billion was earmarked by
34 the Congress.

35 Finally, let me say, you all know the figures about,
36 what is it, 50 percent of R&D goes to only five or six states,
37 and a majority of that, only to 20 or 30 institutions, all AAU
38 institutions. And I am sure that they are worthy. But, my

1 friends, let me tell you, it is a political matter where you
2 distribute the largesse that is generated by the tax dollars of
3 the United States. It is a political matter.

4 And it matters a lot where you spend this money in
5 terms of not only jobs, or in the scientific base, but also the
6 economic base of a community. And the Congress has a very
7 legitimate right, and duty, I believe, to say that at least part
8 of that money for science ought to recognize a little
9 distribution. Maybe \$2 billion out of \$44 billion, for God's
10 sake. It ought to be a lot more than that in my judgment. And
11 in my judgment, that \$2 billion is as well spent and as well
12 allocated as the peer-reviewed money.

13 Let me just tell you, it is an old, old battle about
14 earmarks, and you ain't gonna win. And I would say that now that
15 I am not the one doing the earmarking. But if you did win, it
16 would be like the SSC. You would just be taking money away from
17 science and you wouldn't be putting it in your peer-reviewed
18 projects. You would just be taking it away from science. But in
19 the process, you would be stifling the enthusiasm of a lot of
20 Members of Congress who would now think about the scientific
21 capability of their university, and about how it would be nice to
22 put such and such a project at that university, and increases the
23 whole pot of scientific expenditure.

24 We don't spend enough on science in this country. We
25 don't invest enough in our scientific infrastructure as it is.
26 So let's not do anything that tends to hurt that process.

27 My advice is we all ought to promote scientific
28 spending, the best science we can get, because there is not
29 enough of it right now.

30 Thank you.

31 MR. CASTEEN: Dr. Vaitukaitis.

32 DR. VAITUKAITIS: I didn't take any chances. I have
33 overheads as backup. Actually, Senator Johnston set up my
34 presentation quite nicely because my presentation is going to
35 focus on the have-not states and a congressional initiative or
36 earmark however you choose to label it.

37 The EPSCoR program at NIH is referred to as the
38 Institutional Development Award program. The program was

1 authorized by Congress in 1993. It is comparable to the NSF
2 EPSCoR program, which stands for Experimental Programs to
3 Stimulate Competitiveness in Research. I have asked them whether
4 they were going to change the "E" because it has been in place
5 for over 20 years. But they are still refining it, as we are
6 with our program.

7 There are seven participating federal agencies that
8 have comparable programs. And this effort was in response to
9 Congress' intent to enhance geographical distribution of federal
10 research funds.

11 This slide shows the budgets of the seven participating
12 agencies. The blue bar is for last year, and the purple bar for
13 the President's budget request for fiscal year '02. One can
14 readily see that NSF to the far left, and NIH to the far right,
15 have the largest contributions to this kind of program.

16 NSF has had a longer experience with it than NIH has.

17 Picking up on Senator Johnston's comment, Congress was
18 concerned because this is an example of the distribution of funds
19 from NIH awards, which the line represents the cumulative awards
20 to the 50 states and Puerto Rico.

21 The vertical red line is a line drawn at the 50 percent
22 point, show that five states, California, Massachusetts, New
23 York, Pennsylvania, Maryland, account for a 50 percent of all of
24 the awards in dollars from the National Institutes of Health.
25 And that's predominately based on their population. The more
26 densely populated the state is, usually the more universities
27 there are. So there is a relationship.

28 But these states, the IDeA states are those that are
29 indicated in red. I doubt you can read them, but just to show
30 where it is. Those states collectively only receive about 5 to 7
31 percent of the NIH funding annually. And the same holds for the
32 other federal agencies.

33 This shows the number of grant awards to institutions
34 within the IDeA eligible states through regular competition, so
35 that in the fiscal year 2000, they received \$869 million, and
36 that independent of these other programs.

37 How is eligibility determined? Well, by two criteria,
38 basically. The success rate for obtaining the NIH grant awards,

1 having a success rate of at least 20 percent, combined with
2 receiving on average \$14 million a year over five years. So if
3 you meet one or both of those criteria, you are included. And so
4 out of the 23 states listed, and Puerto Rico is also eligible,
5 based on those two criteria.

6 Why did these states receive so few dollars
7 proportionately? Well, basically it is like the lotto. Unless
8 you play, you don't win. Not to say that the peer review process
9 is a lotto game. The application rate for the 23 IDeA states and
10 Puerto Rico in 1998, if I understand it, for 2001, it would
11 essentially show the same thing; that those investigators from
12 the 23 IDeA states and Puerto Rico submitted only 2,367 grants
13 out of about a total of about 28,000 or 29,000. So that's about
14 8.5 percent of the pool. And for that year, they received about
15 5 to 6 percent of the whole NIH budget.

16 But look at their success rate. It is 24 percent with
17 a range of 0 to 47 percent. The zero is for one state that
18 submitted no grants to NIH in that particular year. But the 47
19 percent is higher than the highest state among the non-IdeA, or
20 the have states, at 38 percent.

21 There is tremendous overlap between the two. But the
22 major difference is that there just aren't applications submitted
23 from these states through NIH, and to NSF and the other agencies.

24 The problem basically is there are not enough trained
25 investigators in health-related research, and that's why they
26 don't submit applications to NIH.

27 In response to that recognition, and discussions with
28 representatives from those states, including presidents of
29 universities and investigators, they, to a person, pointed out
30 that they didn't want any earmarks. They wanted to get grants on
31 their own. They want to be trained in terms of how to get
32 grants, how to do research, and be competitive. But just doing
33 the research, itself, is only one part. But you need the tools,
34 you need the laboratories and the instrumentation, and the
35 coaching through established investigators. So those are really
36 the nuts and bolts of the IDeA program. Competitiveness is key.

37 And in initially discussing the problems of
38 universities in the have-not states, the high level

1 administrators recurrently pointed out, when one of my
2 investigators gets an RO-1 -- that's the right of passage to
3 another state, and another university -- where I can work with a
4 critical mass, they could not build a critical mass of
5 investigators. They kept losing the good young people and the
6 older established ones who would get peer-reviewed funding.

7 So they said, "What we need is a multiple disciplinary
8 center so that if we lose one person, the center still survives
9 and we can replace that cog in the wheel.

10 And basically that's the approach that we took after we
11 had enough money in the system.

12 And I say that because the budget through NIH for the
13 institutions developing an award program, was abysmal between
14 1993 when the program started through essentially the late
15 1990's. And only in the year 2000, were we able to start a
16 significant program to start addressing these problems.

17 In the beginning there were just a couple of awards per
18 year, not enough to make a difference. And we knew that, but we
19 had to do something.

20 But probably the most important thing that we attained
21 in the first couple of years in this program was to help them
22 learn how to write grant applications, how to think, how to put
23 their applications together in a hypothesis testing mode, and
24 other apparent modes.

25 The COBRA program was the first major program that
26 addressed the needs that the high level administrators and
27 investigators identified. And again, the investigators wanted to
28 have peer reviewed support.

29 The COBRA program, or Centers of Biomedical Research
30 Excellence, was an extension of other programs that we had
31 developed over many years to try to jump start some of the
32 minority-serving institutions. We learned that we were giving
33 them enough money, we thought. But in retrospect, it was just
34 enough money to fail so that once we withdrew our support, they
35 had no way to keep going on because we had not built adequate
36 infrastructure. And we didn't want to make that mistake here.

37 And so we put together a program to build their
38 research infrastructure facilities, provide them the training,

1 equip their laboratories with first-rate instrumentation, build
2 core research facilities that they identified, and help them
3 develop a critical mass of investigators with complementary
4 expertise in a comprehensive center that they decided what the
5 research focus was to be. And we provided them \$1.5 million per
6 year in direct costs for this program with a lot of flexibility.

7 And we have to provide even more flexibility.

8 No matching funds were required, and there had to be
9 evidence of institution commitment. We didn't require any
10 institution-matching because many of the states in this cohort
11 have legislatures that meet every other year, so it put these
12 states at a marked disadvantage in terms of coming up with
13 matching funds. And some of the states just don't have the
14 wherewithal to come up with a few million dollars to match any
15 award that NIH or NSF would give them.

16 The other EPSCOR-like programs generally require a
17 match, but we wanted to create a level playing field.

18 So the first COBRA was awarded about a little bit over
19 a year ago so we are still in the formative stage of using that
20 mechanism.

21 But in fiscal year 2000, we received 45 applications
22 from the 23 states and Puerto Rico, we initially made 19 awards,
23 and then funded two additional applications the following year
24 out of 2001 money. So at the overall success rate in that first
25 effort was 47 percent.

26 This past fiscal year we again allowed a cohort of
27 states to apply, and there were 26 applications and 9 awards, for
28 a 35 percent award rate. This is peer-reviewed funding.

29 Well, this isn't really why I was invited to present.
30 It was because of this article of September 21st science magazine
31 referring to a controversial idea to shrink the biomedical gap
32 written by Jeffrey Mervis. I think he did a superb job in
33 presenting a balanced description.

34 After we made the COBRA awards, we realized that there
35 are institutions in the states that were not developed very far
36 along. Moreover in some of these states, there are serious
37 problems with the quality of science taught at undergraduate
38 universities, including community colleges. And there were

1 special problems with tribal community colleges, as well, that we
2 wanted to help address.

3 So we started another program. This is a separate
4 program which is part of IDeA, COBRA is actually for more
5 advanced research, and is research intensive. The biomedical
6 research infrastructure network, or BRIN, is a program that
7 actually reaches down to the socks, if you will, of the state,
8 and allows them to build a cohort of institutions that includes
9 undergraduate schools, as well as graduate schools. And most of
10 the applications really have networked with multiple institutions
11 within the state to try to enhance the quality of science taught,
12 and to create a pipeline for that state.

13 We provide a lot of flexibility because no two states
14 and no two networks are the same.

15 In doing this, we realized that some of these states
16 need a lot more help, and we made a conscious decision to fund
17 all the 23 states and Puerto Rico to give them the funds through
18 BRIN. It was peer reviewed, even though we funded everyone.
19 There were about five or six applications that were a little bit
20 off the mark that we had them go back to their drawing board
21 before we funded them to fix the problems administratively to
22 give them the jumpstart to start building their infrastructure.
23 They don't have the flexible funds that many other institutions
24 have for fixing up their research facilities. They don't have
25 much in the way of investigators. So we have to work with them
26 in carrying this out.

27 So basically this is a program that if the
28 investigators wish to be funded by peer review, but the BRIN that
29 we funded, we funded all of them because we want to jumpstart the
30 states in this since we had the wherewithal to help jumpstart
31 them.

32 This approach was presented at an advisory committee to
33 the director of NIH and some members of the panel were dismayed.
34 In fairness to them, they didn't have the entire background of
35 the IDeA program, and made a statement to the effect, "Well, if
36 you are not funding through a peer-reviewed mechanism, then you
37 can't be funding good science."

38 Well, we can't even get to the science in some of these

1 institutions yet. We have to build the infrastructure, get the
2 right faculty imported, recruited, and in place to help jumpstart
3 it.

4 So that's my saga for Louisiana, which is one of our
5 IDeA states. And for us, it has been an interesting exercise,
6 because the have states are have states because there are one to
7 three universities in that state that bring up the collective
8 average of NIH grants or NSF grants in those states. So they are
9 not a have-not state.

10 The interesting thing was there were a couple of states
11 on the borderline. They kept checking with us. They didn't want
12 to become an IDeA state or an EPSCOR state. And so I don't know
13 what they could do about it. It is something we are trying to do
14 to help them, not to hamper them.

15 Thank you.

16 I actually have some questions that I could put up
17 there. Is the IDeA program an earmark, a bad idea, or is it a
18 congressional initiative? I think it's a congressional
19 initiative and it's a good idea. But if Congress mandated that a
20 quarter of all the awards went to the IDeA program, of all of the
21 NIH awards, I would consider that undue advantage and an earmark.

22 The next question that is a general one, is mandating
23 geographical distribution of federal awards earmarking?

24 Well, I consider it would be if one disregards merit,
25 and I am a strong advocate of peer review. You may not agree
26 with me, but that's where I stand. And is a set-aside of a major
27 competitive program for IDEA an earmark? I think that it would
28 be viewed as an earmark.

29 I put in an innocent here to show, is providing a
30 student from a needy family a college scholarship an earmark? It
31 probably is, but it is a good earmark. Not all earmarks are bad
32 things.

33 Thank you.

34 MR. CASTEEN: Now Raymond Bye.

35 MR. BYE: It's a pleasure to have an opportunity to
36 discuss this topic with an audience like this today and with the
37 distinguished group of panelists as we have had on both panels
38 today.

1 I have probably been asked to share some thoughts with
2 you today because I have spent much of my professional career at
3 the National Science Foundation working with the Congress on the
4 NSF budget. Part of that time was devoted to defending that
5 budget from earmarks and set-asides.

6 For several years after leaving NSF, I brought that
7 culture with me to the position of the Vice President for
8 Research at a major state university that is located in the state
9 of the Chairman of the House Appropriations Committee. Having
10 come from the Garden of Eden, NSF, I now find myself periodically
11 tempted to sin and take a bite out of the apple of earmarking.
12 But more on that later.

13 Working with the Congress on the NSF budget for those
14 many years, I now conclude that Member requests, as they called
15 on Capitol Hill, or earmarks, as we are discussing today, is the
16 grease that keeps the process moving forward.

17 Whether contained in Member requests loose-leafs or in
18 computer databases, clerks on appropriations subcommittees know
19 which members have asked for what, when, and how the Chair
20 responded to that request.

21 A favorable response to a Member's request for a
22 project is often considered one vote when the bill reaches the
23 floor of the House or the Senate. And in an environment,
24 particularly like in the House where majorities are very narrow,
25 and where budgets are tight and allocations are constrained, it
26 is a very important legislative tool.

27 Appropriation bills contain funds for multiple agencies
28 and diverse departmental programs; each has its advocates as well
29 as competitors, for limited resources. There is also a growing
30 proliferation of interest groups, ranging from "Blue Dog
31 Democrats" to House GOP conservatives. In this environment, a
32 majority vote is often assured only by commitments garnered by
33 providing the funds for a Member's request. And these earmarks
34 go far beyond science.

35 In addition to earmarks, the earmarks also provide the
36 grease for securing campaign funding, as well. Thus, Members and
37 Chairs see earmarks as a very practical outcome done for very
38 practical reasons.

1 Is there a single view on the subject of earmarks?
2 Historically, a single position has been lacking. In light of
3 this divergence of views, meetings like this which are focused on
4 this topic often resemble the two cultures described by C.P. Snow
5 in his 1950's work that highlighted the communications breakdown
6 between the sciences and the humanities as a major hindrance to
7 solving problems. While participants may have differing views on
8 this subject today, I hope we can begin to bridge that gap in
9 that communications divide.

10 Within my university, we agree that earmarking is
11 definitely and clearly a two-edged sword. For an institution
12 that is concerned about its national reputation relative to high
13 quality faculty and growing competition among academic
14 institutions for funding, earmarking may be viewed by some as not
15 particularly desirable. Yet a blanket disavowal did not seem
16 appropriate for us at Florida State University either.

17 I would like to share with you some criteria that we
18 employ prior to making decisions on what we call targeted
19 projects that we discuss with our congressional delegation.

20 The first one: avoid earmarking in agencies that have
21 strong and established peer- or merit-reviewed programs or
22 activities. NSF and NIH are clearly the most obvious examples.
23 I would call your attention to a 1999 GAO report requested by
24 then House Science Chairman Sensenbrenner, which looked at peer
25 review activities in twelve federal agencies; and in all but two,
26 the report found the process and the quality of peer review
27 widely divergent.

28 Secondly, avoid focusing on basic research projects.
29 This may be redundant with criteria A to some extent as NSF and
30 NIH both focus heavily on basic research. Most of our projects
31 are applied research, or even get into some development
32 activities.

33 Thirdly, focus on a university strength or priority.
34 Here the focus is on an area that already has strength in its
35 faculty, within teams of faculty, or with strong infrastructure
36 or instrumentation availability. These can even be multi-
37 institutional in nature. New or inexperienced faculty members
38 are not normally involved in these projects. Our intention is to

1 expand and build upon existing and possibly unique strengths we
2 have in both human and technical areas.

3 And I should say that to date we had not received any
4 of this funding of this sort for buildings or that type of
5 infrastructure.

6 Fourthly, projects that may be branching into new
7 funding areas. Maybe an example or two here would be
8 appropriate.

9 Agencies, like other bureaucracies, are not completely
10 open to change. Let's say we have faculty who have expertise in
11 developing climate models, successfully funded for years by the
12 science agencies, but we have recognized the need to make these
13 results coming out of these models available, let's say, to
14 farmers to prevent major losses or enhance crop yields.

15 Have you recently tried to get these new approaches in
16 climate models utilized by and funded through the USDA? Many at
17 USDA don't understand the idea of climate models.

18 So what we have tried to do is go take some of this
19 aversion to change in these out-dated, and yet traditional ways
20 of doing businesses -- and I think in many of our organizations
21 we call this looking at a problem in a stovepipe fashion - and we
22 try to use this process to help break that down.

23 A second example: in a university, for instance, with a
24 national reputation for leadership in developing education at a
25 distance and related strengths in developing educational systems,
26 and then assume that this university wants to transport this
27 expertise into a foreign country to change education. Have you
28 tried USAID's merit review program lately as a vehicle to get
29 funding for an activity like this?

30 I could go on and give you several other examples, but
31 I think a congressional earmark often focuses enough attention on
32 a capacity, that the agency will consider the new capacity as
33 part of their portfolio.

34 Fifth, a concept paper or a proposal has been developed
35 and has already been shared with the agency during congressional
36 discussions. This requires faculty to review the program
37 requirements and interest of that agency, often discussing a
38 particular activity with agency program staff. This step usually

1 eliminates frivolous or impetuous efforts.

2 And finally, what I say basically is, two years to
3 mature. Faculty involved in these kinds of activities know that
4 it is their responsibility to develop strong working
5 relationships with the outcome that both parties involved at the
6 university and within that agency get the benefits from the
7 activity within a short time line.

8 The agency must feel that the work is worthy of
9 continuation without continuous, long-term plus-ups. Only a
10 limited number of such efforts can be undertaken each year, so as
11 other priorities come forward, maturing projects must continue on
12 their own momentum.

13 The criteria and the comments about each have hopefully
14 suggested a somewhat balanced approach to looking at earmarking.

15 I would hope to be considered a responsible user in the context
16 of this congressional process. I do feel that Member requests,
17 or earmarking, is a process that, if used thoughtfully,
18 carefully, and selectively, can be a valuable device to broaden
19 the utilization of differing approaches to problem solving among
20 different agencies and it may provide useful applications to
21 different agencies from talented faculty and graduate students.

22 In conclusion, the funding of specific projects for
23 Members in a wide array of federal programs in appropriations
24 bills or reports, are a necessary arrow in the legislative
25 quiver.

26 Earmarks are often critical for coalescing Member
27 support for multi-agency and multi-faceted appropriations bills.

28 If public funds are wasted on poor or inferior
29 activities, then earmarking is less than optimum. However, I do
30 not concur with the blanket statement that all such activities
31 are wasteful, unproductive and unduly constrain budgets.

32 The challenge to the executive branch and to those of
33 us in universities is not to advocate eliminating a necessary
34 tool for legislative action, but to develop some agreement on
35 what is a reasonable, responsible, and balanced approach to this
36 complex and controversial issue.

37 Thank you.

38 MR. CASTEEN: I was struck myself by the shift in

1 emphasis between the first and second panel. I realize that the
2 final speech did not do this, but the shift from institutional
3 science to science considered geographically as to states. I
4 realize that's really part of what's going on, but is there any
5 kind of ultimate truth on either side of that discussion, or is
6 it really a matter of how one cuts the cake?

7 DR. VAITUKAITIS: I think it is just something that
8 happened because of the geography in this country and the have-
9 not states for the most part, but not all of them. You probably
10 shouldn't use the "have-not" states -- those with small
11 portfolios of research come from states that have very few
12 people. There are some states out in the Midwest that have fewer
13 individuals in their population collectively than Washington,
14 D.C. And I think it is a reflection of that.

15 And some other states, there are states that the state
16 legislatures have never chosen, and maybe could not have invested
17 in higher education in that state.

18 After World War II, several states invested pretty
19 heavily -- Michigan, North Carolina. But a lot of the topnotch
20 state universities, the California system, are a reflection of
21 very heavy input by the state and private sectors.

22 And the IDEa and the EPSCOR states, for the most part,
23 were not advantaged by that type of approach.

24 MR. JOHNSTON: Well, if you are looking for ultimate
25 truth, it is in the eye of the beholder. What you really have to
26 decide is what is it that you want to accomplish? I mean, there
27 are various things you could want to accomplish.

28 First, you could be outraged at earmarking. I suggest
29 that if you really look at the earmarks, you would not be so
30 outraged because there is some pretty good science. And a lot of
31 those earmarks are things that are going to be done anyway, they
32 just happened to put it in that state. I mean, LBJ put the space
33 program in Texas. It was going to be put somewhere; that's
34 politics. You are not going to get away from that kind of
35 politics.

36 But are you really concerned about the outrage of it?
37 I don't think so.

38 Secondly, you could be concerned about the balanced

1 budget. You know the \$2 billion you spend on earmarks is too
2 much, and you want to get the budget more in balance. I don't
3 believe that's what this is all about. I really don't.

4 I mean, I heard those arguments with the SSC and it
5 was, I forget the figure, it was 1/150 of 1 percent of the
6 budget, and all of that with all the budget heat it generated.

7 I suggest that what this is really about is you want to
8 move those earmarks to AAU states, AAU institutions. Isn't that
9 what this is about?

10 If that's what it is about, then you are not going to
11 be successful. The exact opposite is going to occur, because all
12 of these Senators from these states that may not have a lot of
13 people, you've got two votes per state no matter what the size
14 is. And to the extent you can get people to be interested in
15 science, they are going to be supporters of science. You know,
16 they've got a little program there, and they get interested in
17 cancer or whatever, they are probably going to support the NIH
18 program more enthusiastically as they learn something about it
19 and get a stake in it.

20 So I say the ultimate truth depends on what you are
21 trying to accomplish. And believe me, if it is to move the money
22 from non-peer review to peer review, it is not going to work. It
23 never has worked. I can demonstrate time and time again that it
24 doesn't work. It is just the opposite.

25 MR. CASTEEN: All right, thank you. George, and then
26 let's move to a general discussion. We have about 30 minutes for
27 this part of the program.

28 MR. LEVENTHAL: An observation -- and again, I am
29 George Leventhal from AAU, the Association of American
30 Universities.

31 Senator Johnston, it is so helpful to have you here,
32 and I guess what -- the juxtaposition between your remarks and
33 Dr. Vaitukaitis' remarks made me wonder about those institutions
34 that have benefited over time from earmarks.

35 And then what happens to an institution like that when
36 an influential Senator or Congressman who has been a patron for
37 that institution moves on in life, or party control of the
38 chamber changes, or you know, time marches on?

1 In part, to answer your question, Senator, I do believe
2 that our intent, at least from AAU, is to spark conversation
3 within the academic and scientific communities -- and I am
4 repeating myself now -- in terms of professional standards and
5 practices. What is the mechanism by which research funds are
6 allocated? What are trends and changes in the funding of
7 research, and are those in the best interest of public policy and
8 science policy?

9 And I know from the standpoint of my boss, he believes
10 strongly that the universities that I work for, the "haves", the
11 successful universities, ought to assist in capacity-building
12 among other institutions.

13 But as I listen to Judy Vaitukaitis about these
14 institutions that don't even play in the lottery, those
15 institutions that aren't even part of the peer review culture,
16 the question that comes to my mind is, what is it about the
17 academic and scientific culture in those institutions that have
18 benefited from earmarks? Will they be able, over the long term,
19 to be competitive?

20 It seems to me that what the institutions ought to be
21 looking for in terms of being able to succeed in a peer review
22 system is permanence, being permanently successful. Because if
23 Senator Johnston moves on in life, or if Chairman Livingston, you
24 know, moves on and isn't chairman anymore, then if there are
25 institutions in a state like Louisiana who have benefited from
26 the good efforts of those Louisiana politicians, but then things
27 change, are those institutions still able to win support? What
28 happens, just to close, to an institution like -- and I don't
29 mean to pick on these good institutions -- but Loma Linda
30 University in Jerry Lewis' district, or Wheeling Jesuit
31 University in West Virginia. If they are in the top five in the
32 Chronicle's list, over the long term, are those institutions
33 going to continue to benefit from research success when, you
34 know, time waits for no man, when their patrons are no longer in
35 the positions that they are?

36 MR. JOHNSTON: Well, the answer is some will and some
37 won't. Those "have" institutions, I mean how did they get to be
38 "have" institutions? To a very large extent, with federal money.

1 I mean, how did, you know, Stanford? I used to work with SLAC,
2 Stanford Linear Accelerator. I mean, that wasn't built with
3 California money. That was built with federal money. And they
4 are good. I continued, when I was chairman, to support them.

5 And some will survive and some won't. I can think of
6 two right now. The University of Alabama wasn't much until it
7 started its medical program, and they have done great work. And
8 by the way, I got a letter from one of the people there who said
9 they are having trouble -- they've got some of the best people in
10 the world -- they are having trouble with the competition to keep
11 their people.

12 So some will survive and some won't. But \$ billion out
13 of \$44 billion is just not an awful lot, and not too much, in my
14 judgment. Sure, you've got Jerry Lewis, who is a great guy, and
15 he is going to put a few dollars for awhile in his area. My
16 guess is most of them are going to be very useful to the
17 taxpayer. Don't ever think it's that easy to get an earmark. I
18 mean, a lot of people think you just go in and, there is all of
19 this federal largesse.

20 We used to have about two or three earmarks a year on
21 energy and water. That's all. And you had about 45 requests.
22 And you had a press looking down at you. Now you think it's easy
23 to get those earmarks and that you need no justification? You
24 just go in and say, "We want to have a study on" -- well, let me
25 give you one here that was peer-reviewed. A study of why people
26 fall in love. That was from the National Science Foundation.
27 Peer-reviewed.

28 You know these kind of examples. Everybody says, "Oh,
29 there they go again." Those are the great exceptions. When you
30 have a government as big as this one, you are going to have those
31 kind of wasteful things. There is no way you can eliminate it.
32 From peer-reviewed, or non-peer-reviewed, or government-
33 instituted. But I think we ought to keep our eye on the ball.
34 And the ball, in my judgement, as a strong supporter of science,
35 is more money for science, because if you look at the trends in
36 this country on what we spend in science and research, and
37 applied science, it's not nearly enough. It's not nearly enough
38 as the competition ought to do. And a lot of these areas, the

1 government is the only one who is going to do these kind of
2 things.

3 So I say, let's get in there and promote as much good
4 science as we can.

5 MR. CASTEEN: Okay. Just in case you have something
6 you would like to raise in this session and you weren't here
7 before, I am going to ask you to use this microphone, unless your
8 voice is extraordinarily loud. And will you begin with your name
9 and your organizational affiliation.

10 Anyone who would like to take part?

11 MR. CASEY: I'm Kevin Casey from Harvard University.
12 And Senator Johnston, there was a moment a week or so ago where I
13 thought earmarking was very easy because Senator McCain had done
14 a press conference and released the list that had -- his pork
15 best hits list. And Harvard University had a \$3 million grant at
16 the Institute of Politics, and we didn't even ask for it. So I
17 thought that was pretty easy. That's the easiest work I had done
18 all year so far. But it turns out it was not at Harvard
19 University, it was at St. Anselm's in New Hampshire.

20 But I just had an observation that I think part of the
21 growth of earmarking may be an outgrowth of the success of some
22 of the arguments that many of us have been making to members of
23 Congress urging them to support research. And that is that we
24 have been talking about how we are economic engines, and in
25 places like Massachusetts, and California, and Texas, and New
26 York, that we have spurred the economy, we are the cutting edge
27 of the international economy. So we have to keep investing in
28 this innovation system.

29 Well, members are saying, what about my economic
30 engine? And this must be a great thing for my state if it is
31 Montana or elsewhere. So in listening to Ray, it made me think
32 that this criteria might be something that goes a long way to
33 establishing some credibility in terms of the way some
34 institutions are going about seeking or helping Senators
35 determine where the money should go in their districts. I was
36 kind of interested in the level of thought that you put into the
37 various five or six points that you talked about in Florida.

38 MR. BYE: Well, I talked to Rich Harpel of NASULGC,

1 about talking to this panel last Thursday, so I put four or five
2 days worth of thought into it, Kevin.

3 But seriously, those are basically the criteria that I
4 have tried to use basically since I have been at Florida State.

5 I mentioned in my talk that I came to FSU from the
6 National Science Foundation, and I think I brought a large
7 segment of what 23 years of being inculcated there with me to
8 Florida State. I have not, and would not, ever do anything that
9 would affect a well-established, well-running peer review
10 process.

11 And again, as I said in my paper, I think that the
12 process works best at the National Science Foundation, and the
13 National Institutes of Health. There may be pockets of other
14 kinds of quality review processes elsewhere in other agencies,
15 but those are two that, at least from my standpoint and in my
16 discussions with my faculty, I don't think there is never any
17 question about that we won't earmark in those agencies.

18 I think, that the point that somebody made about a
19 particular university -- I am certainly not going to pick on Mr.
20 Lewis or a particular Member -- which may have influential members
21 expands dramatically during a certain period of time, I think
22 that what I tried to suggest is that, I think we all have to go
23 at this in a responsible fashion. It is awfully easy to just
24 think that you've got four years with this subcommittee chairman.

25 And with the term limits for chairmen being what they are, there
26 is a process that comes to bear on people in universities that
27 see this as their window of opportunity.

28 And I think that's a terrible way to do it, because
29 what happens when you really go overboard in a situation like
30 that is that you fail to build the long-term capacity to be able
31 to continue to utilize, whether it's instrumentation, whether
32 it's facilities, or whether it's a particular kind of research
33 capacity that you are trying to build up in your faculty. You
34 lose the capacity to continue that without that kind of crutch.

35 And so for that reason, I have tried to put in this
36 roughly two-year rule; if faculty can't get it done, if they
37 can't develop relationships in that period of time, to continue
38 to attract funding without that kind of help, then probably we

1 made a mistake in trying to say to that agency that they were
2 missing the boat in not funding that work in the first place.

3 So we do try to operate on those criteria. I mentioned
4 to you that we have not received funding for infrastructure --
5 buildings -- as part of this process. That doesn't mean that we
6 don't need them. But we just feel like that there are other ways
7 of going about that. And so I shared some of the feelings of the
8 first panel that people were concerned about a lack of a federal
9 program in that area. That may very well be needed, but we
10 haven't used the process in that fashion.

11 MR. CASTEEN: Yes, sir.

12 MR. FARNHAM: Thank you. I'm Peter Farnham, and I work
13 at the American Society of Biochemistry. I was very struck,
14 Senator Johnston, by the numbers that you mentioned of the number
15 of earmarks, the requests that you have received, as well as the
16 number that you funded.

17 And the reason I say that is that things have
18 apparently dramatically changed since you left the Senate. I was
19 talking to a member of the House Appropriations Committee staff
20 who told me that the subcommittee for which he works received
21 more than 4,000 requests for earmarks, an average of 20 to 30 per
22 member making requests. So that's a huge number. And I have
23 difficulty considering this to be reasonable. I think that if we
24 were talking about numbers now that you were dealing with, I
25 don't think we would even be having this meeting, quite frankly.

26 MR. JOHNSTON: Well, really, when I said 13 or 14, what
27 I was thinking about is 13 or 14 Senators, which is about the
28 entire membership of the committee. And each Senator, indeed, had
29 multiple requests.

30 But a lot of those requests are to increase or decrease
31 an allocation for a particular function, not a line item. I
32 mean, they might want to increase the amount of money for
33 renewable energy, for example, or for another function. I don't
34 think you would have thousands of requests for line items in the
35 sense of, put this at my university.

36 But if they are, I can tell you they are exceedingly --
37 those that get granted are exceedingly small. I mean, we have
38 talked about health. Of Health and Human Services, according to

1 this OMB study, total funded grants were \$20.5 billion and
2 research performed at congressional direction was \$159 million,
3 which is -- somebody do the percentage on that. It is less than
4 1/10 of 1 percent, I think, in the area of at least health.

5 So I don't know how many requests there are now, but
6 most of those are not for a traditional line item earmark.

7 MR. CASTEEN: Yes.

8 MR. SAM: Good afternoon. My name is Lee Sam from
9 Tuskegee University. In the first panel, the question was asked
10 to the panelists, are smaller schools and minority-serving
11 institutions at a disadvantage in the earmarking process? And
12 the OMB person answered, "Well, no. I couldn't make that
13 argument."

14 So I am going to pose that same question to either of
15 the three of you. Are smaller institutions or minority-serving
16 institutions at a disadvantage? I mean, I just want an honest
17 answer. It can be whether the school has a champion in Congress,
18 or whether they don't, what you think on that.

19 MR. JOHNSTON: I hate to monopolize this with the
20 answers. If you look at the record, the answer is a very clear
21 yes. I mean, very little for traditional minority schools.

22 And for that reason, we did a lot in my state. I mean,
23 sometimes you would have to generate the programs, and we did
24 that at Southern. Xavier has a program with Tulane, and they
25 have done terrific work.

26 So the answer is, yeah, and part of the way to solve
27 that problem is through the political process with earmarks. And
28 you go back and you look, in my state, at least, and look at the
29 other minority things that we funded, I think they measure up
30 pretty well.

31 You've got to have a capability to do it. It's got to
32 pass the test of showing to your colleagues that it is good, and
33 a very skeptical press. But, you know, that's a political
34 question to some extent. Scientific question, but it's a
35 political question. And it is a legitimate political question.

36 You know, in my state years ago when we had not one
37 minority member of the state police, I thought it was very
38 legitimate to say, let's figure out this allocation process so we

1 end up with a different result. And that's what we need to do,
2 and that's part of the purpose of a lot of this earmarking, to
3 end up with a different result, build the expertise. I mean, I
4 think it's very important to have centers of expertise in every
5 university, and every kind of university.

6 DR. VAITUKAITIS: At the National Institutes of Health
7 we are the part that helps support infrastructure in
8 institutional building, and Tuskegee is part of our Research
9 Centers and Minority Institutions Program and has done very well
10 within that.

11 But separately, we also have the only NIH- authorized
12 construction facilities program. And we advise reviewers up
13 front to review the applications such that need is a key element,
14 in addition to the kind of research to be carried out, the
15 quality of that research. Small institutions and minority
16 institutions do very well within that system.

17 The problem is, the NSF 1998 report on facilities cited
18 a need of \$5.8 billion in unmet funding for upgrading facilities
19 for biomedical research; that does not include other kinds of
20 research. So there is a huge backlog in that more than half of
21 the laboratories in this country cannot carry out sophisticated
22 research. So through a variety of mechanisms, we have to try to
23 fix that problem. Separately, Congress has as a set-aside
24 for centers of excellence within the construction program, which
25 includes many of the minority-serving institutions, but several
26 majority institutions, as well. And minority-serving
27 institutions do well through that mechanism.

28 MS. SCHEMAN: Carol Scheman, University of Pennsylvania.
29 I probably shouldn't bring this up, Senator, but I can't help
30 myself. I was at the AAU before, many, many years ago, about
31 when this debate began, and I need to remind all of us that two
32 institutions who started this debate were Columbia University and
33 the University of Pennsylvania, my university, and we are hardly
34 "have-nots", and went after some major earmarking.

35 And I think that -- the reason I bring it up is the
36 importance of the debate is, I think, not because there is a
37 great need for the "haves" to hold onto it, although we certainly
38 do want to hold onto it and have more. But I think the debate

1 was caused by, as Kevin Casey, my colleague from Harvard, brought
2 out, which is he made the argument of more key economic
3 development. And that led reasonably and, I think directly, to
4 members of Congress saying, "We need economic development, too."

5 And that caused that to happen.

6 But something is lost, I think, in all of this; it is
7 how fragile merit-based allocation really is. To the largest
8 extent, I think most people have no idea what it's about.

9 I remember a debate in the Senate in which I was having
10 -- there was a conversation that was followed by another
11 conversation in which a colleague of yours thought when we were
12 talking about peer-review, we were talking about the House of
13 Lords. It struck a lot of people as very funny, but there is
14 simply no reason why people don't know what peer-review is.

15 So that what's at risk here is this very, very narrow
16 way of allocating what you rightly point out are public funds.
17 We have no right, our faculty has no right, to tax dollars.
18 Members of Congress have in their wisdom, over a course of many
19 years, delegated and allowed these peers, these people who nobody
20 really knows who they are, to make decisions on allocating vast
21 amounts of wealth, vast amounts of public money. And we should
22 be very grateful for that. And I would say that we are.

23 The thing I think I am worried about is that it has
24 worked very well as science policy. And what is at risk is
25 confounding the argument so that it gets lost, and we lose that
26 ability, that route of good science policy.

27 With that, Ray, I have to tell you that I had tears in
28 my eyes when you were talking because I remember standing side by
29 side with you for many years on this. And I have struggled with
30 the same thing since I went to Penn and I know how hard the
31 struggle is. I can tell you that my problem with the principles
32 you set out, which I thought were really very interesting, are
33 that absent the debate that I just tried to outline, that that's
34 what merit-based allocation is, I think it is a slippery slope.
35 Thank you.

36 MR. JOHNSTON: May I just say something that is implicit
37 in your question, there is some trend to non-peer-reviewed
38 science. I don't see that trend. I mean, I don't see that \$2

1 billion congressionally mandated out of \$44 billion is a trend.
2 And particularly when I look at health, which is what everybody's
3 concerned about, I don't see that \$159 million out of \$20.5
4 billion is a trend, unless it is a trend away from congressional
5 allocation.

6 MS. SCHEMAN: I don't necessarily think it's a trend,
7 although I worry about where it's clumping up into rich areas. I
8 know that I argued with faculty at the University of Pennsylvania
9 all the time, they can't have it both ways. You know, you can't
10 benefit so extraordinarily -- and we were number one or number
11 two in the highest funding last year and the year before -- and
12 also go after earmarks. You have to pick a system in which you
13 are going to live with.

14 MR. JOHNSTON: So who says you have to pick a system? A
15 lot of universities don't.

16 MS. SCHEMAN: No, I just meant within the institution.
17 I worry less about trends than I worry about the fact that we
18 have an agreement with science policy in which Members of
19 Congress, and I am talking about your peers during that period of
20 time, understood what we were doing and understood doing it the
21 other way. I think there are a whole bunch of newer members of
22 Congress, younger Members of Congress, who haven't a clue what we
23 are talking about. And that's what really worries me.

24 I know you clearly do. And I know you clearly
25 understand doing it differently. But I think that there are
26 many, many members who don't.

27 MR. JOHNSTON: Well, first of all, an awful lot of
28 universities, I won't name them all, I was meeting with one this
29 morning who runs with the rabbits and barks with the dogs -- and
30 don't think there are not a lot of them -- and so you don't have
31 to pick, and they don't pick.

32 But believe me, there is no trend. You say all of
33 these new ones are coming in; they don't understand. Look at the
34 figures. This is from OMB. It's from the budget, pages 136 and
35 137, when I tell you in Health and Human Services, \$20.5 billion
36 total, only \$159 million congressionally-directed. Now come on.
37 I mean is that too much? You've got to be serious, really.

38 A PARTICIPANT: What are the figures for NASA?

1 MR. JOHNSTON: Well, that's \$20 million out of \$44
2 million, that's almost half.

3 A PARTICIPANT: If you looked at Energy or NASA or some
4 of the other science agencies --

5 MR. JOHNSTON: Energy is \$139 million congressionally
6 directed out of \$4.6 billion. What's that percentage? Is that 1
7 percent? It's not much.

8 MR. CASTEEN: Yes.

9 A PARTICIPANT: This is a very gooey problem and I
10 suspect it's actually just a small piece. I mean, we talked
11 about earmarks. But the fact of the matter is Congress reshapes
12 the federal budget that is submitted by agencies. The agencies
13 very often have peer-review panels that go with the advisory
14 committee that can deal with peer-reviews, make recommendations,
15 and the agencies bring forth new programs. And Congress,
16 rightfully so, Constitutionally so, reshapes it.

17 And I am wondering, as I have been listening to this
18 discussion and listening to Senator Johnston's percentage of 2
19 percent, the reaction is to the whole federal budget, the R&D
20 budget. If you look to see what the advisory committees are
21 saying and then match that up to what actually comes out of
22 Congress, are these numbers so terribly different? I don't know,
23 but I suspect it isn't.

24 I would also make one other observation and that is
25 that we stop. We need to go back to the era of late 1940s and
26 early 1950s, when a lot of this process was put into place, and
27 it was an era in which eminent members of the science community
28 had a working relationship with people in government. That has
29 largely disappeared. We relied on those relationships, and we
30 didn't argue those points back in the '50s. A little bit before
31 my time, but not much.

32 And certainly I think that has changed, and I would say
33 tremendously, over the years. What we are questioning is that we
34 have of Members of Congress who will listen to a certain person
35 who may not have the scientific credentials that we necessarily
36 acknowledge today, and we might have 40 years ago. I think
37 that's another piece to it.

38 But I don't know if there is a solution to this

1 problem. And I guess I'll go along with what Senator Johnston
2 just said. This is something that is needed, that works to a
3 large extent. But it gets very much out of control and perhaps
4 we need to really speak up about it. And I guess I am not sure
5 we are at that point yet.

6 MR. JOHNSTON: Well, let me say one other point. So
7 much of the competition for money is not between, for example,
8 institutions that are both after the same grant in health. Let
9 me just give you an example of something that I am trying to get
10 earmarked right now in the Congress.

11 We've got a company that's got a technology to put
12 carbon fibers around steel structures to strengthen them against
13 terrorists and explosions. We had the request in before the
14 events of September the 11th.

15 This is competing not with health, but it is competing
16 with some defense project out there. That's the kind of judgment
17 they need to make. The Congress ought to look at this and say,
18 "Well, these people who want to do it, are they the best? Are
19 they good, and can we afford that? Do we need it?" That's the
20 kind of competition for earmarks that more than likely is to be
21 determined by earmarks. Another example, is the competition
22 between fusion and high-energy physics.

23 It's not between two groups who both want to study
24 throat cultures, or something. As these figures indicate for the
25 National Institutes of Health, almost all of it is peer-reviewed.
26 Maybe 1/100 of 1 percent is not. That's about all in health. So
27 we are not talking about health, we are talking about these other
28 fields.

29 MR. CASTEEN: Yes, sir.

30 MR. HARPEL: Rich Harpel from the National Association
31 of State Universities and Land Grant Colleges. This is just an
32 observation here, and sort of a follow-up on the previous
33 comment.

34 Is the effect intended or unintended perhaps of where
35 the debate and dialogue occurs with respect to whatever the
36 project or program might be? The fact that there was a time in
37 our history where a lot of that discussion occurred within a
38 structure that involved and engaged scientists with politicians,

1 I think, is a very important thing. The loss of an office like
2 OTA within Congress is just another example of the fact that the
3 gulf gets widened. And so institutions thrash about trying to
4 find out what's the best tap to gain an audience, whether that is
5 with an agency or with a member of Congress.

6 The sad consequence is -- and having spent most of my
7 career at an academic institution -- is the amount of money that
8 gets expended by an institution in chasing earmarks. That's
9 where I think people ought to start thinking as to how
10 investments pay off, or do not pay off, because that has been a
11 real increase, I think. As institutions look around and see the
12 success of one or another of their fellow institutions in the
13 state or across the country, they realize that they have to start
14 making different kinds of investments in gaining a hearing
15 because there are no typical or normal mechanisms to engage in
16 that dialogue anymore.

17 MR. JOHNSTON: Well, you could say that. You could
18 also say that the money spent within the institution to get good
19 people to come up with ideas does just that -- generates great
20 ideas in science, and a good way to package, and put it together,
21 and make it work, and pass the muster of the Congress and a
22 critical press.

23 MR. HARPEL: I didn't mean the quality of science, I
24 meant the hiring the consultants that gain access and open doors.
25 There is a lot of money going to that.

26 MR. JOHNSTON: Do you know how much?

27 MR. HARPEL: I don't know how much.

28 MR. JOHNSTON: Well, see, that's the thing. So much is
29 anecdotal. You read somebody is making a lot of money on this,
30 and it's peanuts. I mean it's, in the first place, \$2 billion
31 out of \$44 billion for all earmarks. And how much do they spend
32 on -- I mean, it's just not a problem.

33 You try to go after those problems and again, what are
34 you trying to accomplish? Let's keep your eye on the ball, is
35 what I say.

36 MR. TURMAN: I'm Richard Turman. I am currently at the
37 AAU. I was going to provide some observations, both because I
38 think it is helpful to use the data that is in front of us, and

1 because the issue on the table is like the one that we had when I
2 worked at OMB actually. The \$150 million detailed is actually not
3 within NIH, but within the Department of Health and Human
4 Services. But almost all of the cash is in the Health and Human
5 Resources Administration, which is, itself following the criteria
6 that Ray Bye laid out in the table. Congress avoids earmarks in
7 NIH and NSF. So it's helpful for me to look at the table. It's
8 just that HHS includes other agencies that Congress does earmark
9 totally -- a set of facilities cash that goes to a person. So in
10 this case, for NIH, earmarks are actually zero.

11 I'm going to draw a larger point; it's that this table
12 also shows us some history in a way because the Department of
13 Agriculture would not have been one of the agencies that people
14 would have said, "We don't do it here." So that's been reflected
15 in the cash totals in the table, that's tradition. But I think
16 10 years ago other agencies might have been on that list. Right
17 now it is NIH and NSF. The question is that 10 years ago, NASA
18 was on that list and NASA -- to take a snapshot of this year --
19 is now at \$200 million. And as George was alluding to earlier,
20 it is a question of how much cash increase NASA had, and how much
21 portion that \$219 million was. The question is, 10 years ago
22 NASA would have been on that list, too. And it's off and is no
23 longer on that list. What does this portend in the future? What
24 do we do now?

25 The other observation I was going to make is that I
26 believe the Chronicle data indicated a portion of this is just a
27 snapshot because OMB is not -- they collected this actually from
28 two years. This is the first year it was clean enough to
29 present. But the data the Chronicle has indicated has gone
30 something like, you know, whether it's \$250-\$500 million to \$1
31 billion, whatever the number reaches, it has gone up quite
32 dramatically over a period of years.

33 MR. BYE: Let me make a comment or so there. In
34 looking over a fairly narrow range of projects that was on the
35 Chronicle list, it is clear to me that those are not science
36 projects in every instance. I mean, putting windows in sea walls
37 is not a scientific project.

38 It just strikes me as that list, quite honestly, and

1 maybe the \$1.68 billion is more expansive and probably overstates
2 what the real problem is.

3 The second point I would make is that it is a little to
4 me like maybe is the glass half full or half empty? You know, if
5 NASA would have been fenced off 10 years ago, maybe what the
6 approach here ought to be is to challenge agencies and
7 departments to strengthen their peer review programs in such a
8 way that the GAO reviews them and determines that they are merit
9 review agencies, and then move them into that same category with
10 NSF and NIH.

11 Right now I don't think that, in all due respect to
12 Kathy and the folks at NASA, I am not sure NASA is as strong a
13 peer review agency as maybe it was 10 years ago. Or secondly, it
14 certainly is not as strong as the National Science Foundation and
15 NIH's peer review.

16 And so I think if you really want to try to protect the
17 system, you start with what is really at the core of the concern
18 here. And that is, the merit review process. If you want to
19 protect merit review, you have got to start somewhere. And where
20 I have started is with NIH and NSF.

21 But it strikes me as there is a way to encourage
22 agencies to try to strengthen the programs in ways that will get
23 them classified, if you will, through a GAO review, or whatever,
24 as a program or an agency that utilizes peer review. And then
25 move them into that fenced off category.

26 And my guess is that the Congress would probably
27 consider that as significant, as they have respected NSF and
28 NIH's processes. But I think right now, when you start throwing
29 programs from the Department of Justice, USAID, Transportation,
30 and HUD, into the peer -review mechanism and say that the
31 Congress is earmarking programs in those areas, I am like Senator
32 Johnston, why not? There doesn't seem to be a better way of
33 doing review within those agencies.

34 So I guess my concern is, I would try to provide some
35 carrots as incentives to the agencies to strengthen their peer
36 review activities, and to try to get them in a position that they
37 could be recognized as agencies that effectively utilize merit
38 review processes.

1 MR. CASTEEN: Okay, one last question or comment.

2 MR. MALAKOFF: David Malakoff with Science magazine.
3 This is a question I guess for the ex-Senator. From a political
4 perspective, the administration has appeared to decide to pick
5 this fight. They have called the community in and have rallied
6 the community on this issue. There were even suggestions at one
7 time that the community might send the White House a letter
8 expressing their views strongly about this issue.

9 From a political point of view, is this a good, smart
10 thing for the administration to be doing?

11 MR. JOHNSTON: Well, the administration really wants to
12 run with the rabbits and bark with the dogs. I mean, they are on
13 the one hand saying, "Go get 'em. Give us a letter," and
14 everything. You watch the President. He's going to sign all
15 these bills. And he is not going to -- you know, he's got the
16 veto. That's the atom bomb.

17 He can tell Energy and Water, for example, that I am
18 going to veto your bill if you don't take out these earmarks.
19 You know, an earmark where you designate flood control for
20 Southeast Louisiana, which might have had twelve inches of rain
21 in one hour, and 10,000 people flooded out in their homes. And
22 he is going to tell them to veto the money for that? No, he's
23 not going to do that. I mean, that's not serious, and it's not
24 going to happen.

25 I tell you, I believe with a lot of experience, that it
26 is not a problem. It is simply not a problem. I mean it is a
27 problem that we don't have enough money for science. I mean, I
28 met with university people and top scientists who support high-
29 energy physics and nuclear physics -- and we looked at the trends
30 in the last few years, how money has gone down. And how money
31 has gone down in other areas, except for health. I mean, NIH,
32 you know, continues to go up. It is very sexy, and very popular.

33 But other areas of science are not so popular and we
34 need more money. We need more support. We need more people
35 involved in science. And yes, it is a problem that not enough
36 Members of Congress know about science.

37 But the way you get them involved in science is not to
38 say, "You can't have anything to do with making a decision; leave

1 it all to the peers." That's not the way you do it.

2 I submit to you, this group ought to pull together
3 behind the best science we can get. I mean, promote good
4 science. Don't just try to throw cold water on something where
5 you are not going to be successful, and it is not going to
6 achieve your purpose.

7 MR. CASTEEN: I would like to thank both the panels,
8 but particularly this one for your work on our behalf today.

9 I think one of the realities of this is that Congress
10 will decide what it's going to do. And that for all of the
11 discussion that may take place within the academic community or
12 the association community, in the end, most of the cards in the
13 game are on the other side of the table.

14 So one of the issues that we may be trying to
15 understand is how best to understand the issues in the Congress.
16 And having understood the issues, how best to work with the
17 Congress going forward.

18 I am struck by the fact that a good bit of the analysis
19 that we have heard from the Senator is not commonplace analysis
20 that we hear at AAU meetings, or elsewhere, for example, the
21 ratios and the numbers. And I am sort of convinced after
22 listening that as we look for common ground that most of us can
23 occupy, we may well need to work to understand all of the numbers
24 a lot better than -- I will call myself a lay person in this --
25 than we lay people can understand at this point.

26 I am grateful to the sponsoring organizations, and
27 also, obviously, to the Carnegie Institution for bringing us
28 together today, and I want to thank all of you for coming.

29 Thank you very much.

30 (Whereupon, at 5:03 p.m., the workshop was concluded.)

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