NSB-05-72
May 31, 2005

MEMORANDUM TO MEMBERS OF THE NATIONAL SCIENCE BOARD

SUBJECT: Major Actions and Approvals at the May 25-26, 2005 Meeting

This memorandum will be publicly available for any interested parties to review. A more detailed summary of the meeting will be posted on the National Science Board (NSB, the Board) public Web site within 10 business days. A comprehensive set of NSB-approved Open Session meeting minutes will be posted on the Board's public Web site following the August 2005 meeting.

Major actions and approvals at the 386th meeting of the Board included the following (not in priority order):

1. The Board approved the minutes of the Plenary Open Session (NSB-05-47) for the March 2005 meeting of the NSB (http://www.nsf.gov/nsb/meetings/2005/0305/open_min.pdf). Minutes for the Plenary Executive Closed and Closed Sessions for the March 2005 meeting of the NSB were also approved.

2. The Board approved a resolution to close portions of the upcoming August 10-11, 2005 NSB meeting on staff appointments, future budgets, pending proposals/awards for specific grants, contracts, or other arrangements, and those portions dealing with specific Office of the Inspector General investigations and enforcement actions, or agency audit guidelines (NSB-05-49) (Attachment 1).

3. The Board approved the annual report of the Executive Committee as present by the committee chairman, Dr. Arden L. Bement, Jr., NSF Director (NSB/EC-05-8) (Attachment 2).

4. The Board approved a schedule of meetings for calendar year 2006 (NSB-05-51) (Attachment 3) and asked Dr. Crosby to report at the August 2005 meeting on candidate locations for the February 2006 annual retreat and site visit.

5. Dr. Delores Etter and Dr. Barry Barish were re-elected to two-year terms as members of the Executive Committee.

6. The Board approved added language on the Directorate-level standardized memorandum transmitting Board Member proposals to the Board for review (Attachment 4).

7. The Board approved the transmittal letter and management response for the Office of Inspector General semiannual report.

8. The Board endorsed the NSB Chairman proceeding to plan, with the Office of Science and Technology Policy (OSTP), for a Joint NSB-PCAST Roundtable Discussion on Federal-State Policies for R&D.

9. The Board endorsed the establishment of a distinguished Commission on Pre-College Math and Science Education, in order for the Board to provide the President and Congress advice about the role of the National Science Foundation and the Federal government in this area. Drs. Natalicio and Hoffman will work with Dr. Crosby to develop a draft charge for this NSB Commission on Math and Science Education, and present the draft to the Board in August 2005.

10. The Board approved a letter in response to Congressman Vernon Ehlers on science, technology, engineering, and mathematics (STEM) education (Attachment 5).

11. The Board approved the recommendation of the Education and Human Resources Committee for the Board-sponsored "Workshop on Engineering Workforce Issues and Engineering Education: What are the Linkages," to be held at the Massachusetts Institute of Technology on October 20, 2005.

12. The Board approved the topic for the companion piece to *Science and Engineering Indicators 2006*, focusing on K-12 education.

13. The Board approved a resolution that supports the NSF Director taking all necessary steps to meet the requirements for polar icebreaking among available options to best meet the needs of the research community in the most cost effective manner. (NSB-05-68) (Attachment 6).

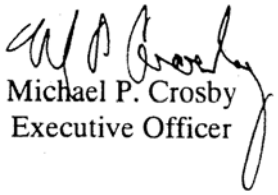
14. The Board approved a new priority order for new start Major Research Equipment and Facilities Construction (MREFC) projects, in the following order beginning with highest priority: Alaska Region Research Vessel, National Ecological Observatory Network, Ocean Observatories Initiative, and Advanced Laser Interferometer Gravitational-Wave Observatory (LIGO).

15. The Board approved *Setting Priorities for Large Research Facility Projects Supported by the National Science Foundation* (NSB-05-77); subject to final editorial changes approved by the NSB Chairman and Committee on Programs and Plans (CPP) chairman to be posted on the NSB Web site when final edits are completed.

16. The Board approved *Long-Lived Digital Data Collections: Enabling Research and Education in the 21st Century* (NSB-05-40); subject to final editorial changes approved by the NSB Chairman and CPP chairman to be posted on the NSB Web site when final edits are completed.

17. The Board approved the *National Science Foundation Facility Plan*, dated May 2005; subject to final edits identified by the Board. Final plan will be posted on the NSB Web site when final edits are completed and approved by the NSB Chairman and CPP chairman.

18. The NSB Chairman discharged the *ad hoc* Committee for the Vannevar Bush Award and the *ad hoc* Committee on Nominating for NSB Elections.



Michael P. Crosby
Executive Officer

Attachment 1: (NSB-05-49)
Attachment 2: (NSB/EC-05-8)
Attachment 3: (NSB-05-51)
Attachment 4: Board Member Proposal Transmittal Memorandum
Attachment 5: (NSB-05-70)
Attachment 6: (NSB-05-77)

NSB-05-49
April 29, 2005

MEMORANDUM TO MEMBERS OF THE NATIONAL SCIENCE BOARD

SUBJECT: Closed Session Agenda Items for August 10-11, 2005 Meeting

The Government in the Sunshine Act requires formal action on closing portions of each Board meeting. The following are the closed session agenda items anticipated for the August 10-11, 2005 meeting.

1. Staff appointments
2. Future budgets
3. Grants and contracts
4. Specific Office of Inspector General investigations and enforcement actions

A proposed resolution and the General Counsel's certification for closing these portions of the meetings are attached for your consideration.

/signed/
Michael P. Crosby
Executive Officer

Attachments

PROPOSED
RESOLUTION
TO CLOSE PORTIONS OF
387th MEETING
NATIONAL SCIENCE BOARD

RESOLVED: That the following portions of the meeting of the National Science Board (NSB) scheduled for August 10-11, 2005 shall be closed to the public.

1. Those portions having to do with discussions regarding nominees for appointments as National Science Board members and National Science Foundation (NSF) staff appointments, or with specific staffing or personnel issues involving identifiable individuals. An open meeting on these subjects would be likely to constitute a clearly unwarranted invasion of personal privacy.

2. Those portions having to do with future budgets not yet submitted by the President to the Congress.

3. Those portions having to do with proposals and awards for specific grants, contracts, or other arrangements. An open meeting on those portions would be likely to disclose personal information and constitute a clearly unwarranted invasion of privacy. It would also be likely to disclose research plans and other related information that are trade secrets, and commercial or financial information obtained from a person that are privileged or confidential. An open meeting would also prematurely disclose the position of the NSF on the proposals in question before final negotiations and any determination by the Director to make the awards and so would be likely to frustrate significantly the implementation of the proposed Foundation action.

4. Those portions having to do with specific Office of the Inspector General investigations and enforcement actions, or agency audit guidelines.

The Board finds that any public interest in an open discussion of these items is outweighed by protection of the interests asserted for closing the items.

CERTIFICATE

It is my opinion that portions of the meeting of the National Science Board (NSB) or its subdivisions scheduled for August 10-11, 2005 having to do with nominees for appointments as NSB members and National Science Foundation (NSF) staff, or with specific staffing or personnel issues or actions, may properly be closed to the public under 5 U.S.C. § 552b(c) (2) and (6); those portions having to do with future budgets may properly be closed to the public under 5 U.S.C. § 552b(c) (3) and 42 U.S.C. 1863(k); those portions having to do with proposals and awards for specific grants, contracts, or other arrangements may properly be closed to the public under 5 U.S.C. § 552b(c) (4), (6), and (9) (B); those portions disclosure of which would risk the circumvention of a statute or agency regulation under 5 U.S.C. § 552b(c) (2); and those portions having to do with specific Office of the Inspector General investigations and enforcement actions may properly be closed to the public under 5 U.S.C. § 552b(c) (5), (7) and (10).

/signed/
Lawrence Rudolph
General Counsel
National Science Foundation

Attachment 2 to NSB-05-72
NSB/EC-05-8
May 6, 2005

2004 Annual Report of the Executive Committee
National Science Board

In accordance with the requirements of Section 7(d) of the National Science Board (NSB) Act of 1950, as amended, I hereby submit this annual report of the NSB Executive Committee, as approved at the Executive Committee meeting on May 25, 2005. This report covers the period from May 2004 through April 2005. I have served as Director of the National Science Foundation (NSF) and NSB Executive Committee chairman during the above time period.

The elected membership of the Executive Committee during the past year was Dr. Warren M. Washington, Dr. Diana S. Natalicio, and Dr. Delores M. Etter. Dr. Barry C. Barish replaced Dr. Robert C. Richardson during August 2004. Dr. Michael P. Crosby, NSB Executive Officer and NSB Office Director, served as Executive Secretary.

The Executive Committee met six times during this period: five meetings at NSF in Arlington, Virginia and one meeting on the campus of the University of Texas at El Paso. Oral reports of its activities were made at meetings of the full NSB and are reflected in the minutes of those meetings.

During this period, the Executive Committee took no actions on behalf of the NSB.

Arden L. Bement, Jr.
Chairman
Executive Committee

Attachment 3 to NSB-05-72
NSB-05-51

NSB Meeting Dates for Calendar Year 2006

February 9 – 10
(Thursday - Friday)
[Annual Retreat/Site Visit]

March 29 – 30
(Wednesday - Thursday)

May 9 – 10
(Tuesday - Wednesday)
[Annual Meeting and Awards Dinner]

August 9 – 10
(Wednesday - Thursday)

September 27 – 28
(Wednesday - Thursday)

November 29 – 30
(Wednesday - Thursday)

Attachment 4 to NSB-05-72

S A M P L E

[Month Day, Year]

MEMORANDUM

TO: Dr. Michael P. Crosby
NSB Executive Officer and NSB Office Director

FROM: xxxx
Assistant Director, [Name of Directorate]

SUBJECT: Proposed Award to NSB Member

The attached material provides information to the National Science Board (NSB, Board) that supports a recommended award to a principal investigator who is an NSB Member.

The proposal [#] was submitted by and is under the direction of [Board Member name and institution]. In correspondence dated [date], [university] designated [name] as substitute negotiator with authority to negotiate with the National Science Foundation on behalf of Dr. [Board Member name] in matters related to this proposal/grant while Dr. [Board Member name] is a Member of NSB. The Division of [name] has recommended a [duration] award in the amount of $[dollar amount].

On behalf of the program officer and division director, I verify that our review and decision-making processes for making this recommendation were not influenced by the fact that this proposal involves a Board Member.

Attachments

May 26, 2005

The Honorable Vernon J. Ehlers
House of Representatives
Washington, DC 20515-0001

Dear Mr. Ehlers:

Thank you for your letter of March 29, 2005 in which you requested that the National Science Board (NSB, the Board) delineate the priority of programs within the Education and Human Resources portion of the National Science Foundation (NSF) Budget, to help Congress to focus any additional funds for NSF back to education, should they become available. The Board appreciates your continuing strong support for the NSF's role in Science, Technology, Engineering and Mathematics (STEM) education. The Board is, like you, concerned by the decline in funding for education in the NSF budget. We agree with you that such cuts would undermine the NSF's role in education in STEM fields at a time when STEM skills are becoming increasingly vital to the continued security and prosperity of our Nation.

NSF is unique as the only Federal agency with both science research and science education in its charter. The programs in the NSF Education and Human Resources directorate are designed to support and improve U.S. STEM education at all levels and in all settings (both formal and informal). These programs are unique in their capacity to identify and study the most promising ideas for math and science education, to develop new and improve materials and assessments, to explore new uses of technology to enhance K-12 instruction, and to create better teacher training techniques. The results of NSF supported research can then be transferred into practice. NSF's highly-regarded peer review system that enlists leading scientists, mathematicians, engineers, and academicians to improve K-12 STEM education programs is at the center of this education improvement infrastructure.

The proposed NSF FY 2006 budget begins an end to the commitment for large experimental programs in the Math and Science Partnership (MSP) program, which builds on NSF experience in large-scale precollege and preservice experiments. The proposed budget also reduces critical areas of education research and undergraduate education. You have asked for the Board's priorities for education, should funding become available to restore some of the cut programs. Of the three major areas, all of which contain experimental programs to advance STEM learning, clearly, retaining the MSP program in NSF is the highest priority. Large scale, sustained experiments like the MSPs are crucial for developing models of excellence in STEM education, linking precollege and college, and providing other links to the community and the workforce.

NSF has the mandate, depth of experience under its Systemic Initiatives and other large-scale multifaceted education activities, and well-established relationships to build such partnerships for excellence in K-12 STEM education.

In 1983, the NSB Commission on Precollege Education in Science, Mathematics and Technology published its recommendations for U.S. students to become first in the world in science, mathematics and technology. Most of the recommendations of this report are still relevant today. Some progress has been made in precollege STEM education through research and implementation of model programs, but much more is needed. As a workforce with basic STEM skill has become ever more essential to American economic prosperity and national security, it is now critical to our future that our precollege education system is prepared to perform its essential role in U.S. STEM education. Today it clearly is not.

Certainly, world class STEM education is a moving target, as science and technology advances and as other nations raise the bar for STEM education in their own precollege systems. The Board therefore has determined, in response to requests from the Congress and other stakeholders, to undertake an update of the 1983 Commission report.

The Board is hopeful that our Nation is ready to implement an aggressive, research-based program in precollege STEM education. Within the framework of No Child Left Behind legislation, it is critical that U.S. education systems implement research-based strategies to improve STEM learning, with the goal of international leadership in precollege STEM education. It is also critical that we build on and continue the long-term research in K-12 education sponsored by NSF.

We thank you for your efforts on behalf of NSF, and we offer our further assistance in any way that would be helpful.

Sincerely,

Warren M. Washington
Chairman, National Science Board

Elizabeth Hoffman
Chair, EHR Committee, NSB

Attachment 6 to NSB-05-72
NSB-05-68
March 26, 2005

RESOLUTION

NATIONAL SCIENCE BOARD

SUPPORT TO NSF DIRECTOR FOR
POLAR ICEBREAKING ISSUES

WHEREAS the research supported by NSF in polar regions depends heavily on polar icebreakers, both as research platforms and to enable transportation of cargo and fuel to the U.S. research stations at McMurdo Sound and at the South Pole in Antarctica; and

WHEREAS that research is critical for understanding phenomena of global importance, including climate change, and polar regions offer unique opportunities for forefront research in a broad range of disciplines; and

WHEREAS the two Coast Guard polar class icebreakers that support McMurdo and South Pole supply are nearing the end of their design lifetimes and would require substantial costly upgrades within the next few years to keep them operational; and

WHEREAS the Administration has proposed that NSF assume responsibility for polar icebreaking operations in FY 2006 and beyond; and

WHEREAS the Administration and Congress have encouraged consideration of alternatives to the status quo;

Therefore, be it RESOLVED, that the National Science Board supports the NSF Director taking all necessary steps to meet the requirements for polar icebreaking among available options to best meet the needs of the research community in the most cost effective manner.

Warren M. Washington
Chairman