

MEMORANDUM TO MEMBERS OF THE NATIONAL SCIENCE BOARD

SUBJECT: Summary Report of the August 13-14, 2003 Meeting

The major actions of the National Science Board (NSB) at its 375th meeting on August 13-14, 2003, are summarized for the information of those members absent and as a reminder to those present. In addition, a preliminary summary of the proceedings is provided.

This memorandum will be made publicly available for any other interested parties to review. A more comprehensive set of NSB meeting minutes will be posted on the Board's public Website following Board approval at its next meeting.

1. Major Actions of the Board (not in rank order of importance)

- a. The Chairman administered the Oath of Office to Drs. Steven C. Beering, Ray M. Bowen and Elizabeth Hoffman.
- b. The Board approved the minutes for the Open Plenary Session of the May 2003 meeting of the NSB (www.nsf.gov/nsb/meetings/mtg_list.htm#recent).
- c. The Board approved a resolution for closing portions of the upcoming October 15-16, 2003, NSB meeting dealing with 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 (OIG) investigations and enforcement actions, or agency audit guidelines (NSB-03-93, Attachment 1).
- d. The Board approved the National Science Foundation's (NSF) FY 2005 Budget Request for transmittal to the Office of Management and Budget (NSB-03-109, Attachment 2).
- e. The Board approved a separate FY 2005 National Science Board Budget Request for transmittal to the Office of Management and Budget (NSB-03-111, Attachment 3).
- f. The Board approved a resolution for including a funding request for the Alaska Region Research Vessel as part of the Major Research Equipment and Facilities Construction (MREFC) account in a FY2005 or future budget request by the National Science Foundation (NSB/PPP-03-16, Attachment 4).
- g. The Board approved the *NSF Strategic Plan, FY 2003-2008* (NSB-03-108, Attachment 5), subject to additional editorial changes recommended by the Director, and approved by the Committee on Strategy and Budget (CSB).

h. The Board approved the report *The Science and Engineering Workforce/Realizing America's Potential* (NSB-03-69) for publication, subject to minor editorial changes to be approved by the Task Force, the Board's Education and Human Resources Committee, and Board Chairs.

i. The Board approved the Science and Engineering Indicators 2004 (NSB-04-1) Orange Book for distribution to outside reviewers. Members were reminded that they may still send final comments to Dr. Rolf Lehming, Director of the Science and Engineering Indicators Program in NSF's Science Resources Statistics Division (SRS).

j. Members were asked to send any additional suggestions for the Board response to Section 22 of the NSF Authorization Act of 2002 to the appropriate NSB lead discussant within two weeks, with copies to Dr. Maxine Savitz, CSB Chair, and Mr. Paul Herer, CSB Executive Secretary.

2. NSB Chair's Report

Dr. Washington introduced Dr. Michael P. Crosby to the Board and meeting participants. Dr. Crosby serves as the Executive Officer of the National Science Board and the Director of the Board Office effective July 27, 2003.

The Chairman reported on his productive interaction with the National Academy of Public Administration (NAPA), which is reviewing the Foundation's organization and structure and the role of the Board. He further noted that several Board members have been interviewed by NAPA in this regard, and that the Board is awaiting the outcome of the NAPA review that should be made public in 2004.

Senator Lieberman recently sent a letter to Dr. Washington, with copies to all Board members, asking for the Board's evaluation of NSF's plans for managing the increased budget authorized in recent legislation. The Chairman noted that effective management of an increased NSF budget and expanded activities is a highly important matter that the CSB has been addressing as part of their efforts to develop a report to Congress required under Section 22 of the NSF Authorization Act of 2002. The Committee on Programs and Plans (CPP) is also dealing with a reporting requirement under the NSF Authorization Act of 2002. Section 14 requires that the Board report to Congress any delegations of authority related to the use of the MREFC account. Dr. Washington is preparing a response to Senator Lieberman on behalf of the Board and is receiving input from CSB, CPP and other members of the NSB.

The Chairman commended the leadership of CPP and the Infrastructure Task Force for their effort in developing the NSB report on *Science and Engineering Infrastructure for the 21st Century*. He thanked everyone who was involved in that process, including NSB members Drs. John White, Anita Jones, Jane Lubchenco, Robert Richardson, Michael Rossmann and Mark Wrighton, and NSF staff members Dr. Mary Clutter, Assistant Director for Biological Sciences, and Mr. Herer, Senior Staff Associate in the Office of Integrative Activities, who served as Executive Secretary. The Chairman discharged with thanks the CPP Task Force on Science and Engineering Infrastructure.

Chairman Washington reminded the Board that at the May 2003 NSB meeting the Board briefly touched on the question of having its own legal counsel or advisor. He noted that Senator Bond suggested at the April 3 appropriations hearing that the NSB hire its own legal counsel, and that there are several options for dealing with the Senator's suggestions. After some discussion by the Board, Dr. Washington recommended that he work with Board members and Board staff to draft a response to Senator Bond. The response letter would relay the Board's general belief that a separate legal counsel is not needed. However, if a need were to be determined to seek additional legal advice, the Board would use the existing mechanisms for hiring that expert advice. The Board agreed to this recommendation.

The Chairman then brought before the Board the issue of NSB election voting rules and procedures. At the NSB May 2003 meeting, the Board agreed to reexamine NSB voting rules and procedures, related to the election of Board officers and members of the Executive Committee. Dr. Washington noted that the Board is fortunate to have a knowledgeable source among its members, Dr. Hoffman, and that the Board should use her expertise to help develop the best possible election procedure for the Board. He further requested that any Board members who have interest or expertise in this area contact Dr. Hoffman directly. The Board Office staff circulated copies of the existing election procedures, as reference material. Dr. Hoffman stated for the record that there is no universal best practice voting rule. She went on to state that by the October meeting she hoped to be able to give a report on the analysis she has been doing of the current voting rules.

3. NSF Director's Report

Dr. Rita Colwell introduced Dr. Bianca Bernstein to the Board and meeting participants. Dr. Bernstein serves as Director of the Division of Graduate Education effective July 1, 2003.

The Director provided a congressional update to the Board noting that since the last Board meeting two authorization bills that directly affect NSF have seen congressional action. The first is Senate bill 196, the Digital and Wireless Network Technology Program Act of 2003. This bill would authorize NSF to spend \$250 million annually for five years to improve education instruction in digital and wireless technologies and to improve the telecommunications and technology infrastructure at eligible institutions. On July 9, the House Science Committee's Basic Research Subcommittee held a hearing on the House counterpart of the bill. Dr. Colwell testified at the hearing to indicate that although NSF supported the overall goals of the legislation, it could not support the bill as it was then written. Chairman Nick Smith and other members of the subcommittee were very supportive of the NSF position. On July 22, the House Science Committee reported out H.R. 2801, a substitute for the original bill. This version moves the program from NSF to the Department of Commerce. The full House is expected to take up the bill in September.

The second authorization bill of interest to NSF is Senate bill 189, the Nanotechnology Research and Development Act of 2003. The bill authorizes funding of nanotechnology research programs at the NSF, Department of Energy, National Aeronautics and Space Administration, and the National Institute for Standards and Technology, as well as the Environmental Protection Agency, with NSF as the lead agency. On June 19, the Senate Committee on Commerce, Science and Transportation reported this bill out of committee. Companion legislation has already passed the House.

On June 12, the House Science Committee held a hearing on Plant Biotechnology Research in Africa. The committee is examining plant biotechnology research activities relevant to African food crops and the challenges and opportunities involved in these activities. The Director provided testimony indicating that NSF was supportive of the objectives of the bill.

On July 16, the House Science Committee held a hearing on high-end computing, at which Dr. Peter Freeman, Assistant Director of Computer and Information Science and Engineering, provided testimony for NSF. The committee was interested in the witnesses' assessment of the appropriate direction for U.S. investments in high-end computing. Dr. Freeman affirmed NSF's full commitment to high-end computing.

With respect to the budget, Dr. Colwell noted that on July 25, the House passed the VA, HUD and Independent Agencies Appropriations bill for FY2004 by a vote of 316 to 109. The bill would provide NSF with \$5.63 billion, the highest budget for NSF ever, which is a 6.2 percent increase over FY03. At the subcommittee markup, members noted the difficulty they had in meeting the needs of the various agencies, given the small allocation they had to work with. Chairman Walsh noted that NSF's increase, though larger than other agencies, was smaller than he had hoped for. The Senate has not yet had any action on its VA/HUD Appropriations bill, but Senate staff indicated they expect to begin deliberations early in September.

The Director provided an update on the revised NSF Strategic Plan. At the May Board meeting, the Strategic Plan was discussed in detail and placed on the NSF Website, with a solicitation for comments from the public. Views were solicited from NSF staff. A total of 30 responses were received and responded to in the revised plan. Comments were received from academia, professional societies and associations, former Board members, NSF advisory committees, other Federal agencies and congressional staff. NSF is required to submit its Strategic Plan to the Congress by September 30, 2003. Dr. Colwell stated the plan is about 95 completed. NSF welcomes any final Board comments on the plan.

4. NSB Committees

(Committee summaries are provided by executive secretaries.)

a. Audit & Oversight (A&O)

The committee heard reports on the status of the NSF financial audit, the upcoming anniversary celebrations of the Inspector General Act, and the General Accounting Office's review of NSF's Business Analysis Plan Contract. They also heard an update on cost sharing policy, and updates

from the Chief Financial Officer and the Chief Information Officer. In closed session they discussed the OIG's FY 2005 budget and proposed newsletter, and heard a briefing about active investigations.

b. Programs and Plans (CPP)

During closed session, CPP received an update on the status of MREFC projects.

In open session, CPP heard reports and had discussions on several topics. The Director provided a report on high-risk research. An update on planning for cyberinfrastructure was provided by Dr. Freeman. The status of the *ad hoc* task group on long-lived data collections was reviewed and plans for organizing a workshop discussed.

Minutes were approved from the May meeting. A letter to Congress in response to Section 14 of the NSF Authorization Act for FY 2002 regarding delegation of authority has been prepared. The committee received a copy of *Science and Engineering Infrastructure for the 21st Century* from the Task Force on Science and Engineering Infrastructure and recommended that the task force be discharged.

c. Education and Human Resources (EHR)

Dr. Diana Natalicio reported for the Task Force on National Workforce Policies for Science and Engineering (NWP). The task force presented a distribution plan for the final report. Reports were received from working groups on NSF K-12, undergraduate, and graduate programs.

Dr. Luis Sequeira reported for the graduate education working group. He identified the impact of increases in stipends for NSF fellowships as an important area for study. He asked Dr. Bernstein to report on a planned interagency workshop this fall focused on support to graduate education. The workshop will bring together a large group of stakeholders to review what is known and to identify what is needed to develop policy.

Dr. Pamela Ferguson reported on data gathering by the undergraduate working group and made the following points: there are many programs within the Foundation, but there is also severe lack of funds in this area; committees of visitors are effective in providing constructive review of programs, especially in addressing balance, funding, and coordination of activities across the Foundation.

Dr. Jo Anne Vasquez reported for the K-12 working group on assessment of programs. Dr. Judith Ramaley, Assistant Director for NSF's Education and Human Resources, and Dr. Janice Earle, Senior Program Director for the Instructional Materials Development Program, Education and Human Resources Division, suggested inviting a prominent expert in assessment to speak to the committee about assessment issues.

Prof. Ronald Breslow of Columbia University made a presentation on the National Research Council Committee report on *Undergraduate Biology Education to Prepare Research Scientists*

for the 21st Century, BIO 2010. The study concerns preparation of future biomedical researchers. An area of concentration is at the interface between biology and other STEM (science, technology, engineering, and mathematics) fields. A workshop is planned.

There was discussion of the successful August 12th Workshop on Broadening Participation. A report is being prepared, and recommendations for follow-up will be brought to the committee. Dr. Ramaley reported on EHR activities. The next NSB/EHR Committee meeting will focus on the workforce.

d. EHR Subcommittee on Science and Engineering Indicators (SEI)

The subcommittee discussed comments received on the draft Overview chapter, including those received from members outside the subcommittee. Dr. Richardson encouraged the members to read the Overview and send comments to Dr. Lehming. The subcommittee voted to recommend the Orange Book to the full Board for the next stage of review, as well as the Office of Science and Technology Policy (OSTP) and other Federal agencies, asking agencies for comment by September 7.

The subcommittee discussed plans for a Board companion piece based on the NWP report. SRS is developing cover options and will send them for subcommittee approval early enough to circulate to the full Board ahead of the October meeting.

SRS discussed tracking research and development versus science and technology in the *Indicators* report. The 2004 volume will include a time series of comparisons since 2000.

e. EHR Task Force on National Workforce Policies for S&E (NWP)

The task force discussed final revisions to its draft report on National Workforce Policies for Science and Engineering, approved by the NSB for public comment at its May 2003 meeting. Dr. Joseph Miller noted that no comments had been received on the draft revised to reflect public comments submitted to the full Board for review and comment on August 4. Members offered several editorial changes to be addressed during the final edit process, and reviewed proposed appendices. Members agreed to recommend as the title for the report: *The Science and Engineering Workforce/Realizing America's Potential*. The Task Force accepted the cover design prepared by NSF design and publishing staff, with minor revisions. Members discussed a distribution plan for the final report, both on the Web and in printed form. Members agreed it would be important for a task force member to meet with National Science and Technology Council (NSTC) and OSTP staff to discuss the Board's report. NSB staff was asked to look into possibilities for printing individual copies of NSB reports on demand.

f. Committee on Strategy and Budget (CSB)

In the closed session, Dr. Colwell briefed the committee on the Foundation's proposed FY 2005 budget request to OMB. Dr. Crosby, the Board's Executive Officer, discussed the proposed FY 2005 budget request for the NSB. CSB passed resolutions recommending approval of the two budget requests for transmittal to OMB.

In the open session, NSF's proposed strategic plan for FY 2003-2008 was discussed. Mr. Herer summarized input NSF received from the public and those changes made to the draft document in response to the comments. CSB approved a resolution recommending approval of the strategic plan, subject to additional editorial changes.

Dr. Savitz then initiated a two-hour session with the full NSB to discuss the development of the report mandated by Section 22 of the NSF Authorization Act. Enacted in mid December 2002, this legislation calls for the Board to "prepare a report to address and examine the Foundation's budgetary and programmatic growth provided for by the Act." The Board discussed five issues Congress identified for special attention in the report: (1) the Nation's science and technology workforce, (2) the science and engineering research infrastructure, (3) the average size and duration of research grants, (4) how to expand institutional participation in NSF-funded activities, and (5) how future NSF budget increases should be utilized. There was substantive input provided by all of the NSB members. With input from the full Board, the CSB will prepare a draft of the report for discussion at the October CSB meeting.

Michael P. Crosby
Executive Officer

- Attachment 1: Closed items for October (NSB-03-93)
- Attachment 2: NSF FY 2005 Budget Resolution (NSB-03-109)
- Attachment 3: NSB FY 2005 Budget Resolution (NSB-03-111)
- Attachment 4: Alaska Region Research Vessel (NSB/CPP-03-16)
- Attachment 5: NSF FY 2003-2008 Strategic Plan Resolution (NSB-03-108)

PROPOSED
RESOLUTION
TO CLOSE PORTIONS OF
376th MEETING
NATIONAL SCIENCE BOARD

RESOLVED: That the following portions of the meeting of the National Science Board (NSB) scheduled for October 15, 16, 2003 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 pending proposals and proposed 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.

RESOLUTION

NATIONAL SCIENCE BOARD

NATIONAL SCIENCE FOUNDATION
FISCAL YEAR 2005 BUDGET SUBMISSION

The Committee on Strategy and Budget recommends that the National Science Board approve NSF's Fiscal Year 2005 budget request in accordance with the following resolution:

RESOLVED, that the National Science Board approves the proposed National Science Foundation Fiscal Year 2005 budget request for transmittal to the Office of Management and Budget as recommended by the Director and the Committee on Strategy and Budget. Further, the Board authorizes the Director to submit such a request in accord with the proposed Budget by Account and Budget by Strategic Goals tables.

Maxine Savitz
Chair, Committee on Strategy and Budget

RESOLUTION

NATIONAL SCIENCE BOARD

NATIONAL SCIENCE BOARD
FISCAL YEAR 2005 BUDGET

The Committee on Strategy and Budget recommends that the National Science Board approve the FY 2005 budget request for the National Science Board (NSB-03-106) in accordance with the following resolution:

RESOLVED, that the National Science Board approves the proposed National Science Board Fiscal Year 2005 budget request for transmittal to the Office of Management and Budget, as recommended by the Committee on Strategy and Budget.

Maxine Savitz
Chair, Committee on Strategy and Budget

RESOLUTION

COMMITTEE ON PROGRAMS AND PLANS
NATIONAL SCIENCE BOARD

RESOLVED, that the National Science Board concurs that planning for the Alaska Region Research Vessel is sufficiently advanced, and the intellectual value of the project sufficiently well demonstrated, to justify consideration for funding in the FY 2005 or a future NSF budget request.

Rita R. Colwell
Director

RESOLUTION

NATIONAL SCIENCE BOARD

NATIONAL SCIENCE FOUNDATION
NSF STRATEGIC PLAN, FY 2003-2008

The Committee on Strategy and Budget recommends that the National Science Board approve NSF's Strategic Plan, FY 2003-2008 (NSB-03-70), in accordance with the following resolution:

RESOLVED, that the National Science Board approves the proposed NSF Strategic Plan, 2003-2008, for transmittal to the Office of Management and Budget and the Congress, subject to additional editorial changes recommended by the Director and approved by the Committee on Strategy and Budget.

Maxine Savitz
Chair, Committee on Strategy and Budget