

**MINUTES¹
OPEN SESSION
384TH MEETING
NATIONAL SCIENCE BOARD**

University of Texas at El Paso
El Paso, Texas
February 7-8, 2005

Members Present:

Diana S. Natalicio, Vice Chair
Dan E. Arvizu
Ray M. Bowen
Steven C. Beering
Kelvin K. Droegemeier
Kenneth M. Ford
Louis J. Lanzerotti
Alan I. Leshner
Douglas D. Randall
Michael G. Rossmann
Jon C. Strauss
Jo Anne Vasquez

Arden L. Bement, Jr., *ex officio*

Members Absent:

Warren M. Washington, Chair
Barry C. Barish
G. Wayne Clough
Delores M. Etter
Nina V. Fedoroff
Daniel Hastings
Elizabeth Hoffman
Jane Lubchenco
Daniel Simberloff
Kathryn D. Sullivan
John A. White
Mark S. Wrighton

¹ The minutes of the 384th meeting were approved by the Board at the March 2005 meeting.

The National Science Board (NSB, the Board) convened in the Open Session at 1:52 p.m. on Tuesday, February 8, 2005 with Dr. Diana Natalicio, Vice Chair, presiding (Agenda NSB-05-3). In accordance with the Government in the Sunshine Act, this portion of the meeting was open to the public.

Dr. Natalicio thanked all of the staff from the University of Texas at El Paso (UTEP) and the Board Office staff for their efforts to arrange for the site visits, retreat, and Board meeting. As President of UTEP, Dr. Natalicio was pleased to have her university serve as the host for the off-site meeting.

Dr. Natalicio reported that on February 7, Board Members had the honor of having Congressman Silvestre Reyes serve as tour guide to the Bridge of the Americas. Afterwards the Board had the opportunity to visit the El Paso Intelligence Center at Fort Bliss. During both of these visits, the Board learned about security measures for foot and vehicular traffic that enters comes into the United States, and how Federal, state, and Canadian law enforcement agencies provide real-time information on drug and alien traffic from the U.S. and Western Hemisphere by using state of the art technology. Early on February 8, Board Members met and talked with UTEP students who presented their NSF-sponsored research in a poster session for the Board.

AGENDA ITEM 4: Approval of Open Session Minutes, December 2004

The Board unanimously APPROVED the minutes of the Open Session of the December 2004 Board Meeting as amended (NSB-04-195), Board Book Tab 7 C.

AGENDA ITEM 5: Closed Session Items for March 2005

The Board unanimously APPROVED the Closed Session items for the March 29-30, 2005 meeting (NSB-05-9), Board Book Tab 7 D.

AGENDA ITEM 6: Chairman's Report

On behalf of Dr. Warren Washington, Chairman, Dr. Natalicio reported the following:

a. Vannevar Bush 2005 Award Committee

Dr. Washington established the Vannevar Bush 2005 Award Committee to review the nominations received for this prestigious award and recommend a recipient to the full Board at the March meeting. Dr. Kenneth Ford agreed to serve as chairman of the committee and Dr. Washington has asked Drs. Beering, Bowen, Clough, Hastings, and Sullivan to serve as members.

b. NSB Public Service Award Committee

Dr. Washington appointed two persons to the NSB Public Service Award Committee to select individual and group awardees. Drs. Shirley Malcom and Maxine Savitz, who are both former Members of the Board, will serve in that capacity.

c. NSB Committees, Subcommittees, and Task Force

A provisional list of committee, subcommittee, and task force appointments was provided to Board Members (Board Book, back pocket). Board Members wanting to change his or her assignments should contact Dr. Michael Crosby, Executive Officer.

d. NSB Election Committee

Dr. Washington will also establish the NSB Election Committee at the March meeting. Two vacancies will occur on the Executive Committee in May of this year as the terms for Drs. Barry Barish and Delores Etter end. The committee will prepare a slate of candidates for consideration and election at the May 2005 meeting. Board Members interested in being on this committee should contact Dr. Crosby.

e. New NSB Report

Lastly, Dr. Natalicio announced that the Board would release its report, *Broadening Participation in Science and Engineering Faculty* (NSB-04-41), at the American Association for the Advancement of Science meeting in Washington, DC on February 19.

AGENDA ITEM 7: Director's Report

a. Congressional Update

Dr. Arden Bement, NSF Director, reported on the following:

Appropriations

On January 24, NSF delivered a current plan letter to the appropriators and subsequently both House and Senate Appropriations staff were briefed on the plan.

The House Appropriations Committee is undergoing a reorganization of its subcommittee structure that would eliminate the VA, HUD, and Independent Agencies Appropriations Subcommittee. Dr. Bement responded that under this plan NSF and the National Aeronautics and Space Administration (NASA) would be moved to the Energy and Commerce Appropriations Subcommittee. Various Senators have objected to this proposal and it is still under discussion on both sides of the Capitol.

Hearings

On February 2, Dr. Bement testified before the Senate Commerce, Science and Transportation Committee at a hearing on the Tsunami Preparedness Act of 2005. Other government agencies testifying at the hearing were the Office of Science and Technology Policy (OSTP), National Oceanographic and Atmospheric Administration, and the U.S. Geological Service.

Upcoming Hearings

The House Science Committee has scheduled a hearing on the President's FY 2006 budget request for agencies under its jurisdiction for Wednesday, February 16. In addition to NSF, witnesses from OSTP, NASA, and the Department of Energy have been invited to testify.

The NSF would continue planning for a hearing scheduled for Thursday, February 17, before the Senate VA, HUD and Independent Agencies Appropriations Subcommittee on the NSF 2006 Budget request, pending further notification on the reorganization of the appropriations committees.

Congressional Briefings

Dr. Michael Turner, Assistant Director for Mathematical and Physical Sciences, briefed staff from appropriations and authorizing committees on the status of the Rare Symmetry Violating Processes project. Staff appreciated notification of the potential changes in the project and NSF's willingness to keep them informed as additional information becomes available.

Science and Engineering Legislation

Several bills have been introduced in the 109th Congress that mention NSF. A listing of these bills was provided to Board Members (Board Book, Tab 7 E). NSF will monitor the progress of the bills, but none appear to be candidates for floor action in the near future.

AGENDA ITEM 8: Committee Reports

a. Executive Committee (EC)

Dr. Arden Bement, chairman, reported that at the December meeting Dr. Washington asked NSF to report on current policies on sexual harassment. Dr. Bement reported that a new Director for the Office of Equal Opportunity Programs, Dr. Ronald Branch, had been hired. Dr. Bement also reported that NSF recently reissued existing policies on harassment to all staff. Further, Dr. Bement reported that during the past 10 years, three complaints alleging sexual harassment were filed at NSF: two were dismissed and one

was settled. There has not been a single finding of sexual harassment against NSF in the last 10 years. He provided members of the Executive Committee with materials on NSF's policies on the prevention of sexual harassment and equal employment opportunity.

Dr. Bement stated that Dr. Washington reported on the request from the President of the National Academies for a Board spokesperson to answer questions regarding research instrumentation. Dr. Washington suggested Dr. John White, chairman of the former Task Force on Science and Engineering Infrastructure. Another Board Member who served on that panel might also be invited in Dr. White's place, should he be unavailable to attend the hearing. The committee concurred.

b. Education and Human Resources (EHR)

Dr. Jo Anne Vasquez reported on behalf of Dr. Elizabeth Hoffman, chair of the EHR Committee. Dr. Vasquez stated that the committee had an open discussion on plans for the next year and a half.

Dr. Hoffman mentioned the importance of highlighting the role of NSF in education in view of budget cuts and constraints affecting NSF Education and Human Resources. The committee noted an NSF report, *NSF Staff Report on Education Portfolio* (Board Book, Tab 3 C) showing NSF response to Board recommendations. Dr. Hoffman asked members to direct their attention to the areas identified by staff as "Gaps."

Dr. Hoffman invited Dr. Daniel Hastings to lead a discussion of a possible activity for the committee in engineering education, following on the recent release by the 2004 National Academy of Science report, *The Engineer of 2020: Visions of Engineering in the New Century*. Committee members commented on the problem of high rates of switching major among engineering students, as high as 50 percent of those who start in engineering. They noted that important causes of these high rates are uninteresting coursework and a sense that their education would not prepare them for a long-term career, encouraged by press reports of outsourcing of engineering jobs to other countries.

Dr. Kathryn Sullivan suggested that it would be appropriate for the NSB to address the long-range topic of what the Nation should aspire to over the long-term in science and engineering. Several members offered to work with her on this topic, including Dr. Vasquez, who noted the issue of literacy, the need to have a continuum in the pipeline for scientists and engineers, and the difficulty in finding and retaining high school teachers in science and technology engineering and mathematics as part of the complex problem of achieving national aspirations to leadership in science and technology. Dr. Dan Arvizu stated the importance of hearing the diverse perspective of private sector employees to make progress on these issues. He noted the need to avoid taking a perspective that is too broad, given the difficulties of predicting the future.

Committee members agreed that the two topics share a cross section of issues but are distinct. Dr. Hastings agreed to chair a group with Drs. Louis Lanzerotti and G. Wayne Clough to address the engineering education issue. Dr. Sullivan agreed to chair a group with Drs. Vasquez and Arvizu to address the larger topic of national aspirations. The two groups will report come back at the March on ways to discuss how to work together on these overlapping issues.

Dr. Barish suggested that the committee receive briefings from NSF directorates on the concept of integrating research and education, with the idea to evaluate what is working and perhaps to provide some guidance to NSF. Members agreed that the committee should hear from the NSF directorates and then determine whether Board guidance is needed.

Dr. Rossmann stated that the Board had heard from the Department of State and the Department of Homeland Security on visa issues for foreign science and engineering students and professionals a few years ago. (See: Minutes of the October 2003 Plenary Open Session NSB-03-138, Agenda Item 11). Committee members agreed that it would be timely to receive an update from both the State Department and Homeland Security staff on progress toward eliminating problems identified earlier and asked the Board Office to arrange for a briefing from the appropriate spokespersons.

a. Committee on Programs and Plans (CPP)

Dr. Kenneth Ford reported on behalf of Dr. Simberloff, CPP chairman. He stated that there were two substantive issues before the committee.

The first topic before the committee was a discussion of the draft report, *Long-Lived Data Collections: Enabling Digital Research and Education in the 21st Century* (NSB/CPP-04-21) from the Long-Lived Data Collections (LLDC) working group (Board Book, Tab 4 C).

- Comments from the NSF were delivered to the committee on Friday, February 4, allowing insufficient time for review by Board Members. From a cursory review, it appears that the Foundation staff liked the report and stressed the importance of the topic. (Board Book, Tab 4 D) Because the Board received NSF comments only a few days before the meeting, Board Members will have more time to comment on the revisions to the document before the March meeting.
- Dr. Ford reported that there appeared to be only two issues raised by NSF. First, the need to consider collections of physical specimens as LLDC. NSF suggested the principles developed in this report could guide discussions of such collection. With respect to cost management, NSF commented that peer review remains the optimum process to determine the appropriate balance between investments in long-lived data and other support critical to forefront research. The comments on the second issue were consistent with the report; however, the report takes the

issue a step further to suggest that NSF-level strategy and policies need to be developed for effective cost management and resource distribution.

- The committee discussed the implications of a memo from the Office of General Counsel on the Data Quality Act. The memo seemed to stress that the Data Quality Act does not apply to the community data collections supported by the Foundation that are the primary focus for the report.
- The committee also discussed the title of the report and noted that it may be misleading, as the word “digital” should modify the word “data.” The title will be changed to *Long-Lived Digital Data Collections: Enabling Research and Education in the 21st Century*.

The second issue discussed by CPP was the draft *National Science Foundation Facility Plan* (Board Book, Tab 4 E). It was the consensus of CPP that the report needs significant revision and should include an executive summary to be responsive and easily readable. Dr. Crosby stated that the report had been sent to over 300 individuals for public comment and that comments were expected soon. The committee requested that a new draft be provided to the Board Office at least 2 weeks prior to the NSB meeting in March.

b. Committee on Strategy and Budget (CSB)

Dr. Ray Bowen, CSB chairman, reported that the committee asked Dr. Bement for an update on the 2006 NSF budget request to Congress released by the President on February 7, 2005. Dr. Bement reported that NSF requested \$5.605 billion, which represents a 2.4 percent increase over the FY 2005 plan. Dr. Bement focused on NSF’s four funding priorities that address current national challenges as well as strengthening the core portfolios of NSF’s research and education investments.

- Strengthening the core disciplinary research. Total funding for the Research and Related Activities account increased by approximately \$113 million, a 3 percent increase.
- Providing broadly accessible cyberinfrastructure and world-class research facilities. NSF investments in cyberinfrastructure increased by \$36 million to \$509 million, a 7.6 percent increase.
- Broadening participation in the science and engineering workforce. NSF has maintained a total investment of nearly \$400 million in programs with a proven record of tapping the potential of those underrepresented in the science and engineering workforce.

- Sustaining the organizational excellence in NSF managing practices. NSF funding increased \$46 million over 2005 levels for a total of \$336 million. Dr. Bement noted that NSF earned three “green lights” on the President’s Management Agenda scorecard; retaining the two previously reported for financial management and e-government activities, and adding one more this year for integrating budget with performance. Dr. Bement also reported on the Program Assessment Rating Tool (PART). In recent years, only 15 percent of over 600 evaluated Federal programs under this program were given the highest rating. All eight of NSF’s evaluated programs under PART were given the highest rating.

At the end of the meeting, Dr. Natalicio invited the Board to attend a ceremony later that afternoon in honor of the new Internet2 fiber between the U.S. and Mexico. On behalf of the Board, Dr. Bowen thanked Dr. Natalicio and the UTEP and NSB Office staffs for all their support.

Dr. Natalicio adjourned the Open Session at 2:20 p.m.



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