

MEMORANDUM TO MEMBERS OF THE NATIONAL SCIENCE BOARD

SUBJECT: Summary Report of the September 27-28, 2006 Meeting

The major actions of the National Science Board (Board) at its 394th meeting on September 27-28, 2006 and a preliminary summary of the proceedings are provided. This memorandum will be publicly available for any interested parties to review. A more comprehensive set of Board meeting minutes will be posted on the Board's public Web site (<http://www.nsf.gov/nsb/>) following Board approval at the November 2006 meeting.

1. Major Actions of the Board (not in priority order):

- a. The Board approved the minutes of the Plenary Open Session (NSB-06-93) for the August 2006 meeting (<http://www.nsf.gov/nsb/meetings/2006/0809/minutes.pdf>). Minutes for the Plenary Executive Closed and Closed Sessions for the August 2006 meeting of the Board were also approved.
- b. The Board approved a resolution to close portions of the upcoming November 29-30, 2006 Board meeting dealing with staff appointments; future budgets; grants and contracts; specific Office of the Inspector General investigations and enforcement actions; and National Science Foundation participation in a civil or administrative action, proceeding, or arbitration (<http://www.nsf.gov/nsb/meetings/2006/1129/closing.pdf>).
- c. Dr. Steven Beering, Board Chairman, announced his intent to establish the *ad hoc* Vannevar Bush Award Committee for the 2007 Award. He invited Board Members, who are interested in appointment to the committee, to contact Dr. Michael Crosby, Board Executive Officer and Board Office Director.
- d. The Board approved the draft report *Hurricane Warning: The Critical Need for a National Hurricane Research Initiative* (NSB-06-104) (<http://www.nsf.gov/nsb/committees/hurricane/report.pdf>) that would be released for a 30-day public review and comment period beginning with a press conference on Capitol Hill, September 29, 2006.

At the Plenary Open Session, Dr. John Marburger, Senior Advisor to the President and Director of the White House Office of Science and Technology Policy, administered the Oath of Office to nine new Board Members: Drs. Mark Abbott, Camilla Benbow, John Bruer, Patricia Galloway, José-Marine Griffiths, Karl Hess, Thomas Taylor, Richard Thompson, and Mr. Arthur Reilly.

2. Board Chairman's Report

Dr. Beering reported to Congress on September 11, 2006 that there had been no delegation of authority related to Major Research Equipment and Facilities Construction (MREFC) account during the past year.

Dr. Beering announced that Dr. Elizabeth Hoffman was named Executive Vice President and Provost at Iowa State University. The President of Iowa State University, Dr. Gregory Geoffroy, selected Dr. Hoffman following a nationwide search.

The Chairman asked Dr. Crosby to report on the Board's 2007 annual retreat, visit, and meeting at Oregon State University, Corvallis, Oregon, on February 7-8, 2007. Dr. Crosby stated that he and Board Office staff were working on the logistics. Specifically, he had been in contact with Dr. Mark Abbott, a new Board Member who is Dean and Professor in the College of Oceanic and Atmospheric Sciences at Oregon State University (OSU), as well as Dr. Edward Ray, OSU President. Dr. Crosby will be visiting Corvallis during October 2006, and will provide the Board with a draft agenda that details the activities for February 2007 at the November 2006 Board meeting.

Dr. Beering announced the establishment of the *ad hoc* Committee for the Vannevar Bush Award, and invited Board Members interested in serving on the committee to contact Dr. Crosby. An updated list of Board committee membership was distributed to Board Members and included the assignments of the newest Board Members to Board committees, subcommittees, and task forces. Dr. Beering thanked Board Members for agreeing to accept the committee responsibilities.

The Commission on 21st Century Education in Science, Technology, Engineering, and Mathematics (STEM) continued to make progress. Dr. Beering called on Dr. Jo Anne Vasquez, a Board Member and a Commission Vice Chairman, for an update. She reported that the Commission met for the first time August 3-4, 2006 at the National Science Foundation, and will hold a second meeting November 20-21, 2006 in Chicago. The Commission was organized into a series of working groups to formulate recommendations for consideration by the full Commission at its November meeting. The chairman of each working group is a member of the Commission and recruited additional experts to work with them. Dr. Vasquez reported that she is chairing the working group focusing on STEM curriculum. The Commission expects to provide a draft report to the Board at the February 2007 meeting.

3. NSF Director's Report

Dr. Arden Bement, NSF Director, introduced the following new NSF staff:

- Dr. Edward Hackett, Director, Division of Social and Economic Sciences, Directorate for Social, Behavioral, and Economic Sciences (as of July 14, 2006)
- Dr. Peter March, Director, Division of Mathematical Sciences, Directorate for Mathematics and Physical Sciences (as of September 1, 2006)

Dr. Bement also announced the following new NSF Assistant Directors:

- Dr. Tony Chan, Assistant Director, Directorate for Mathematical and Physical Sciences (as of October 1, 2006)
- Dr. Cora Marrett, Assistant Director, Directorate for Education and Human Resources (presently as a consultant and joining NSF full time in February 2007)

For the congressional update, the NSF Director reported that it was anticipated that a continuing resolution would be enacted prior to Congress' recess, which would fund NSF through mid-November 2006.

Dr. Bement reported on the following congressional hearings held since the August 2006 Board meeting. On September 20, 2006, he testified before the Research Subcommittee of the House Science Committee on the International Polar Year. On September 21, 2006, he testified before the House Science Committee on Nanotechnology Research - Environmental, Health and Safety Impacts. On September 26, 2006, Dr. Bement testified before three congressional committees: the House Transportation and Infrastructure Committee on the National Academies report on icebreaking; a joint hearing of the Senate Commerce, Science and Transportation Committee; and the Senate Foreign Relations Committee on the International Polar Year.

Finally, Dr. Bement reported on the following legislation introduced or subject to congressional action since the August 2006 Board meeting: Senator Hillary Rodham Clinton (D-NY) introduced S. 3790, the National Mathematics and Science Consistency Act on August 3, 2006, which was referred to the Committee on Health, Education, Labor and Pensions. It authorizes the Secretary of Education to convene a panel to produce voluntary national expectations for mathematics and science education, accompanied by a sample curriculum for grades K-12. The second bill, S. 2802, introduced by Senator John Ensign (R-NV), was for the National Competitiveness Investment Act. This bill was being revised, but the discussion draft being circulated would authorize a 5-year doubling of the NSF budget.

4. NSB Committee Reports

a. Executive Committee (EC)

EC Open Session

Dr. Beering stated that the Board reported to Congress on September 11, 2006 that there had been no delegation of authority related to MREFC during the past year. Dr. Crosby updated EC on the subject of substitute negotiators for Board Member proposals and presented information on the process and regulations relating to this area. Dr. Bement reported on NSF personnel updates and the status of an executive staff search.

EC Closed Session

Dr. Bement reported on the potential future budget impacts to NSF as a result of the Federal Funding Accountability and Transparency Act of 1996, which was signed by the President on September 26, 2006.

b. Audit and Oversight (A&O) Committee

A&O Open Session

Ms. Jill Schamberger, Audit Manager, Office of Inspector General (OIG), presented the results of the audit on the level of interest among NSF stakeholders in providing more research results directly to the public. The report cites Government surveys and audit interviews with NSF constituent organizations and indicates a broad interest in having more research results available, mainly in the form of brief summaries and publication citations. It recommends that NSF: (1) consider posting final project reports, conference proceedings, and/or journal article abstracts; and (2) advocate in its role as a participant on Government-wide committees for including brief summaries as part of a standardized format.

Dr. George Strawn, NSF Chief Information Officer, gave a brief history of NSF's ongoing efforts in making research information accessible and plans to enhance the award search function for publication references to the results of NSF funded projects.

Mr. William Harrison, Deputy Associate for the Inspector General for Audit, presented the FY 2007 Annual Audit Plan. Mr. Harrison explained the risk analysis that serves as the basis for the audits that are selected by OIG. Included among the OIG initiated audits for this coming year will be a study of time and effort reporting; and audits related to the merit review process, audit resolution, and emergency preparedness. In follow up discussion, the committee focused on one aspect of the audit plan, the planned audit that will look at the NSF's oversight of Science and Technology Centers.

Mr. Thomas Cooley, NSF Chief Financial Officer, reported on the status of the agency's efforts to address the FY 2005 financial statement audit reportable conditions. Although the plans have been implemented, final information will be available late in the cycle, but too late for the auditors to close on the reportable conditions for FY 2006. Specific to post-award monitoring, NSF has demonstrated ongoing progress over the past 5 years, implementing an extensive, risk-based grants post-award business monitoring program that includes risk assessments, structured site visits, voucher reviews, and contractor supported desk reviews.

Mr. Salvadore Ercolano, with the accounting firm Clifton Gunderson LLP (NSF's financial auditors) indicated that Mr. Cooley's presentation accurately represented the current status of the financial statement audit. His full report will be provided at the November 2006 A&O meeting.

Mr. Cooley also provided an update on NSF's progress in implementing new Government-wide internal control requirements. He also provided the committee with a synopsis of the rules governing agency audit cognizance, in response to a discussion at the May 2006 Board meeting.

A&O Closed Session

The committee was presented information about several ongoing investigations.

c. Education and Human Resources (EHR) Committee

The Education and Human Resources committee heard from two guest speakers. Dr. William S. Rees, Jr., Deputy Under Secretary of Defense (Laboratories and Basic Sciences). Dr. Rees provided the committee with a comprehensive overview of the Department of Defense (DoD) civilian and Science and engineering workforce and the DoD science, technology, engineering, and mathematics (STEM) workforce education efforts and the need for cutting-edge talent in science and engineering across the disciplines. Dr. Rees reviewed the DoD program intended to improve STEM education: the Science, Mathematics and Research for Transformation (SMART) Education Scholarship/Fellowships. The committee also heard from Dr. Daniel Denecke, Director of Best Practice Initiatives at the Council of Graduate Schools (CGS). Dr. Denecke presented several preliminary reports for the Ph.D. Completion Project, a 3-year grant-funded project designed to address issues surrounding Ph.D. completion and attrition.

Dr. Wanda Ward, Acting Assistant Director of the EHR Directorate, provided the committee with a presentation on the role of NSF in STEM education relative to the Academic Competitiveness Initiative. Dr. Ward described the current status of NSF STEM education programs, noting that NSF received the highest rating possible for 27 STEM education programs assessed under the Office of Management and Budget (OMB) Program Assessment Rating Tool (PART).

The committee discussed the recent request from Congressman Rush Holt to Dr. Beerling for the Board to provide a summary of its review of the NSF EHR Directorate program with respect to evaluation procedures and results. The committee recommended, and the full Board subsequently concurred, that the committee would draft the summary report requested by Congressman Holt. NSF was also requested by the committee to provide related information to the Board Office to help in the development of the Board report to Congressman Holt.

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

The subcommittee discussed eight narrative chapter outlines that were provided to subcommittee members and the full Board a few weeks ago. Dr. David Lightfoot, Assistant Director, Directorate for Social, Behavioral, and Economic Sciences, gave a presentation on the Science of Science and Innovation Policy.

e. Committee on Programs and Plans (CPP)

The committee discussed the timing for the annual Board re-examination of the priority order of MREFC candidates for new start projects and approved a revision for the timing to take place in August of each year to coincide with the Board's annual approval of the NSF budget. A Board review of the full NSF Facility Plan will take place every third year, with annual updates. In addition, the release of the NSF Facility Plan will be delayed until the release of the President's Budget in February each year.

The committee also reviewed a summary of the process for developing the annual schedule for action and information items from the NSF Director's Review Board to be brought before the Board, with an overview of the past year. NSF is in the process of developing a tentative calendar for 2007. As per the Board's guidelines, Dr. Kathie Olsen, NSF Deputy Director, will be meeting with Dr. Crosby in November 2006 to discuss the proposed 2007 calendar. The new annual schedule will be presented for Board review at the November 2006 Board meeting.

f. CPP Subcommittee on Polar Issues (SOPI)

The subcommittee heard updates on activities related to the International Polar Year, including the education and outreach activities and international coordination. The subcommittee also heard reports on several icebreaking issues, including a report on investments in *Polar Sea*, which is now ready for service, and the Swedish *Odin*.

g. CPP Task Force on Transformative Research (TR)

The task force reviewed and discussed a draft report stemming from the Board-sponsored workshops on transformative research. A draft report, including recommendations, is expected to be submitted to CPP at the November 2006 meeting for approval to release for public review and comment.

h. CPP Task Force on International Science (INT)

The task force discussed the productive Roundtable Discussion on International Science Partnerships, which was held in Singapore on September 25, 2006. INT discussed future international meetings and sites.

i. CPP Task Force on Hurricane Science (HSE)

The task force submitted a draft report to CPP on a critical need for a national hurricane research initiative. CPP recommended forwarding the draft report to the full Board for approval to be released for public comment. A final report is expected to be submitted to the full Board at the November 2006 meeting. *[The full Board subsequently approved the draft report "Hurricane Warning: The Critical Need for a National Hurricane Research Initiative" (NSB-06-104) and released the draft report for a 30-day public review and comment period.]*

j. Committee on Strategy and Budget (CSB)

CSB Open Session

The committee summarized the background of the Board's recent interest in award size and duration, and success rate. Dr. Joanne Tornow, Senior Advisor, Office of the Deputy Director, presented information on the activities of the NSF Impact of Proposal and Award Management Mechanisms (IPAMM) Working Group, which was formed in response to NSB's interest to identify best practices to achieve an appropriate balance between proposal success rates, award size and duration, with an emphasis on individual investigator-initiated grants.

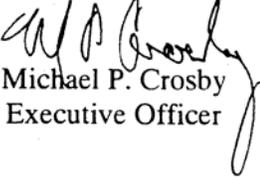
Dr. Bement reported on the status of the FY 2007 Budget request. Dr. Olsen distributed the *NSF Strategic Plan*, which would be delivered to Capitol Hill on September 29, 2006.

CPP Closed Session

Dr. Bement reported on the status of the FY 2008 Budget request. It was delivered to OMB, on schedule, on September 11, 2006.

k. *ad hoc* Engineering Education Group

The group will hold a second NSB-supported Engineering Education Workshop, "Moving Forward to Improve Engineering Education," on November 7, 2006 at Georgia Institute of Technology. At this workshop, engineering deans will discuss how NSF programs and activities could contribute to the efforts of the National Academy of Engineering.


Michael P. Crosby
Executive Officer