

MEMORANDUM TO MEMBERS OF THE NATIONAL SCIENCE BOARD

SUBJECT: Summary Report of the August 15-16, 2013 Meeting

The major actions and approvals of the National Science Board (Board, NSB) and a preliminary summary of the proceedings at the Board's August 15-16, 2013 meeting are provided. This memorandum is also made available for public review. The minutes of the Plenary Open Session for the August 2013 meeting will be posted on the Board's public Web site (<http://www.nsf.gov/nsb/>) following Board approval. The archived webcast of the meeting is located at the following URL: <http://www.tvworldwide.com/events/nsf/130815/>.

1. Major Actions and Approvals at the 432nd NSB Meeting (not in priority order):

- a. The Board authorized the Acting Director, at her discretion, to approve renewal of funding for operations and maintenance of the Laser Interferometer Gravitational-Wave Observatory (LIGO). (NSB-13-41)
- b. The Board authorized the Acting Director, at her discretion, to approve the revised baseline for the construction of the Advanced Technology Solar Telescope (ATST). (NSB-13-42)
- c. The Board authorized the Acting Director, at her discretion, to increase the pass-through authority for construction of the Atacama Large Millimeter/submillimeter Array (ALMA). (NSB-13-43)
- d. The Board approved the proposed FY 2015 budget for the National Science Foundation (NSF), including the National Science Board and the Office of Inspector General (OIG), for transmittal to the Office of Management and Budget (OMB). (NSB-13-44)
- e. The Board approved the "Orange Book" draft for *Science and Engineering Indicators (Indicators) 2014*, subject to final edits approved by the Committee on Science and Engineering Indicators (SEI) chairman and the Board Chairman.
- f. The Board approved the following schedule of meetings for calendar year 2014: February 25-26, May 6-7, August 13-14, September 17-18, November 19-20. (NSB-13-40) (Attachment 1)
- g. The Board approved the revised Charge to the Committee on Audit and Oversight (A&O). (NSB-13-51) (Attachment 2)

- h. The Board Chairman established the *ad hoc* Committee on Honorary Awards (AWD) with Dr. Ruth David, chairman, and Drs. Stephen Mayo and Douglas Randall, members.
- i. The Board Chairman discharged the *ad hoc* Committee Regarding Recommendations for NSF Director (established February 2013), with thanks to Dr. Ray Bowen, chairman, and Drs. Kelvin Droegemeier, Alan Leshner, Anneila Sargent, and Maria Zuber.
- j. The Board approved the minutes of the Plenary Open Session (NSB-13-32) for the May 2013 meeting <http://www.nsf.gov/nsb/meetings/2013/0509/minutes.pdf>. Also approved were the minutes for the Plenary Executive Closed Session (NSB-13-30) and the Plenary Closed Session (NSB-13-31) held in May 2013.

[signed]

Michael L. Van Woert
Executive Officer

2. Board Chairman's Introduction and Report

Dr. Dan Arvizu, NSB Chairman, announced that the 2014 provisional calendar of Board meetings was approved (see 1.f). (Attachment 1)

Dr. Arvizu announced that the *ad hoc* Committee on Honorary Awards was established with Dr. David as chairman (see 1.h). He discharged the *ad hoc* Committee Regarding Recommendations for NSF Director (see 1.i).

On the subject of outreach, the Chairman stated that on June 26, 2013, Dr. Kelvin Droegemeier testified before the U.S. House of Representative's (House) Committee on Science, Space, and Technology, Subcommittee on Environment. The topic of the hearing was "Restoring U.S. Leadership in Weather Forecasting Part 2." He presented information on the state of weather forecasting capabilities, the importance of timely and accurate weather forecasts, and opportunities for weather research and technology development to improve forecasting of severe weather events. Dr. Droegemeier also emphasized the importance of social science research in understanding human behavior as it relates to high impact weather.

On July 11, 2013, Dr. Arvizu testified before the House Committee on Science, Space, and Technology, Subcommittee on Energy. The topic of the hearing was "Oversight and Management of Department of Energy National Laboratories and Science Activities." As the Director of the U.S. Department of Energy's National Renewable Energy Laboratory (NREL), Dr. Arvizu presented information on the value of our national labs, improving strategic planning and management systems, and sustained competency stewardship of the laboratories.

Lastly, the Chairman welcomed Mr. Keaven Stevenson, who returned to the Board Office after several years of active military duty. Most recently, as a Lieutenant Colonel in the U.S. Army, he served as the Deputy Director for Operations and Plans at Arlington National Cemetery. He is presently a Management Analyst and is responsible for the Board Office records.

3. NSF Director's Report

Dr. Cora Marrett, Acting NSF Director, announced the following NSF staff changes:

- Dr. Jacquelyn Gervay-Hague joined NSF as Division Director, Division of Chemistry (CHE), Directorate for Mathematical and Physical Sciences (MPS) on July 1, 2013.
- Dr. Myron Gutmann, Assistant Director (AD), Directorate for Social, Behavioral, and Economic Sciences (SBE) completed his term at NSF on August 16, 2013.
- Dr. Joanne Tornow will be appointed Acting AD, SBE, while NSF completes the search for the next AD/SBE.
- Mr. Alan Blatecky, Division Director, Division of Advanced Cyberinfrastructure (ACI), Directorate for Computer and Information Science and Engineering (CISE), will complete his term at NSF in early September 2013.

Dr. Marrett addressed NSF's relocation to Alexandria, VA, and stated that on June 7, 2013, the Government Services Administration (GSA) executed a 15-year lease for NSF with the Hoffmann Company for a newly built headquarters. NSF will occupy space that is comparable

to the current space holdings in Stafford I and Stafford II combined. In addition, the building will include ground floor retail space and three levels of below grade parking. The “Future NSF Office,” in the Office of Information and Resource Management (OIRM), coordinated an extensive space programming effort that took into account the input from NSF management, staff, and the community. Dr. Marrett recently commissioned a relocation advisory mechanism to review issues and provide a framework for major decisions about the new headquarters that may impact budget and changes to operating policies.

On August 5, 2013, NSF participated in the Diversity and Inclusion (D&I) Feedback Assistance Roundtable (FAR) conducted by the Office of Personnel Management (OPM). The purpose was to discuss NSF’s strategy for implementing Executive Order 13583– Establishing a Coordinated Government-Wide Initiative to Promote Diversity and Inclusion in the Federal Workforce; obstacles to implementation of the NSF D&I Strategic Plan; and notable agency successful/promising practices that can be mirrored in other agencies.

In March 2012, OMB established PortfolioStat accountability sessions to assess the effectiveness of each agency’s information technology (IT) management. NSF’s IT team recently completed its 2013 Portfolio session. The Federal Chief Information Officer considers NSF IT management practices among the strongest in the executive branch.

Dr. Marrett reported that to address this summer's need for assistance to the community's families, NSF participated with other Federal agencies in the “Feds Feed Families” food drive in the Washington, DC metropolitan area. NSF was 12th among 59 participating agencies in overall donation totals for July 2013.

For the congressional update, Dr. Marrett reported that since the last meeting of the Board in May 2013, the House and Senate Appropriations Committees acted on the NSF FY 2014 request. On July 17, 2013, the House Committee on Appropriations passed the FY 2014 Commerce, Justice, Science, and Related Agencies (CJS) Appropriations Bill. On July 18, 2013, the U.S. Senate Appropriations Committee approved its version of the CJS FY 2014 Appropriations bill.

4. Board Committee Reports

[Note: The Executive Committee (EC) did not meet at the August 2013 Board meeting.]

a. Committee on Audit and Oversight (A&O)

In A&O Open Session, Ms. Allison Lerner, NSF Inspector General, briefed the committee. The OIG has approximately 20 external audits pending, focused mainly on projects funded with ARRA appropriations. Ms. Martha (“Marty”) Rubenstein, NSF Chief Financial Officer (CFO) provided an update as well on topics that included the new financial system and the tracking of ARRA funding. She noted that the conversation about government-wide travel restrictions is one that continues; travel is very important to a successful scientific enterprise. The committee, following up on discussions at previous meetings, approved a revised version of the committee’s charge (see 1.g). (Attachment 2)

In A&O Closed Session, the committee discussed the OIG FY 2015 budget (see 1.d).

b. Committee on Education and Human Resources (CEH)

The committee heard an update on the President's FY 2014 budget proposal for science, technology, engineering, and mathematics (STEM) education and an update on the National Science and Technology Council (NSTC) Committee on STEM Education's (CoSTEM's) "Federal STEM Education 5-year Strategic Plan."

CEH then held a panel discussion on the topic of institutional and cultural barriers to STEM education innovation in support of their interest in ways to improve retention of undergraduate STEM majors. As part of this discussion, the committee heard from four scholars involved in several major, successful STEM innovations: Dr. Judy Miner, President of Foothill College in Los Altos Hills, CA; Dr. Silvia Ronco, Program Director at the Research Corporation for Science Advancement; Dr. Philip Kutzko, Professor of Mathematics at the University of Iowa and the Director of the National Alliance for Doctoral Studies in the Mathematical Sciences; and Dr. Peter Lepage, Professor of Physics from Cornell University and current Board Member. The discussion concluded with an invitation to the Board from Drs. Claude Steele and Bonnie Bassler, chairman and vice chairman of CEH, respectively, to provide feedback on the focus CEH is taking as the committee shapes future activities related to STEM retention.

c. Committee on Science and Engineering Indicators (SEI)

The committee voted to recommend that the full Board approve the "Orange Book" draft for *Indicators 2014*, subject to final edits approved by the Board Chairman and the SEI chairman (see 1.e). The *Indicators 2012* mobile application has been finalized and Apple is expected to decide within 7-10 days after submission whether to accept it. The 2012 *STEM Education Data and Trends* online tool is expected to be finalized by mid-September 2013, and Board Office and Office of Legislative and Public Affairs (OLPA) staff are working together on an outreach plan. The committee was presented with an update on the project to develop *Indicators* as a primarily digital document. Staff provided the committee with demonstrations of possible innovations in layout, search capability, and data visualization techniques; a prototype is expected to be completed by February 2014. The *ad hoc* working group on the 2014 companion report provided an update on the proposed topic for the report, "Towards a stronger S&E workforce – Improving policies through better information and information flows." The fallback topic will be "U.S. competitiveness in KTI [knowledge- and technology-intensive] industries through a high-skill workforce."

d. Committee on Programs and Plans (CPP)

During CPP Open Session, the committee engaged in a Program Portfolio Planning session, using the example of the Ice Cube Neutrino Observatory as a framework for discussing higher level strategic issues, including: portfolio balance; appropriate shared costs for large projects; criteria for scaling back projects; pathways for NSF to engage NSB on strategic issues in the future; and financing and governing large interdisciplinary and interagency projects.

CPP heard three information items: an update on the status of the International Ocean Drilling Program (IODP); an update on the process for assessing the balance of the Division of Materials Research's (DMR) facilities and instrumentation portfolio; and an update on the review of the renewal proposal for Cornell High Energy Synchrotron Sources (CHESS).

During the CPP Closed Session, the committee considered three action items and heard two information items:

- Action item (NSB/CPP-13-24): Support for the Renewal of Funding for Operations and Maintenance of LIGO for FY 2014-2018 (see 1.a).
- Action item (NSB/CPP-13-25): Approval of the Revised Baseline for the Construction of the ATST for FY 2010-2019 (see 1.b).
- Action item (NSB/CPP-13-26): Increase in Pass-Through Authority for Construction of ALMA (see 1.c).
- Information items: (1) update on MPS planning and prioritizing process for infrastructure investments, and (2) update on the MPS/Division of Astronomy Portfolio Review.

e. Committee on Strategy and Budget (CSB)

During the CSB Open Session, the committee received an update on FY 2014 appropriations activities from Dr. Cora Marrett. She reported that both House and Senate appropriations committees have “marked up” (or taken action on) NSF’s FY 2014 budget request and that both “marks” provide increases over current year funding. Dr. Marrett provided an overview of House and Senate report language common to both bills and stand-alone language included in one or the other. She closed by stating that a Continuing Resolution (CR) is very likely to start the fiscal year and noted a significant discrepancy between the discretionary funding caps of the House and the Senate, which could delay final resolution of FY 2014 appropriations.

The committee also received an update to the ongoing study on “Trends in Science Budgets.” CSB heard from Dr. Asha Balakrishnan of the Science and Technology Policy Institute (STPI) on 10-year trend data on NSF authorizations and major legislative and executive events, funding levels within NSF and among various Federal agencies, NSF award data, and information on NSF principal investigators. The presentation generated a lively discussion among Board Members and led to a series of questions from Members and requests for additional data. The Board Office and STPI planned to work together to generate the additional data.

During CSB Closed Session, the committee considered NSF’s FY 2015 budget (see 1.d).

CSB Subcommittee on Facilities (SCF)

SCF discussed the Board’s recent history with facilities, and what its role should be in evaluating facilities against other research opportunities. The subcommittee discussed Board prioritization and how SCF can help the Board safeguard the long-term well-being of the NSF. Finally, SCF discussed some specific data products for the annual portfolio review (APR) and the need to conclude the 2013 APR shortly.

f. Task Force on Administrative Burdens (AB)

Dr. Arthur Bienenstock, AB chairman, noted that the analysis of the task force's Request for Information (RFI) has been completed. Dr. Jason Gallo, a research staff member with STPI, provided an overview of the findings. Board Members welcomed the findings and asked questions about issues raised and recommendations offered by RFI respondents, including discussion on National Institutes of Health (NIH) modular budgets and institutional burden. Members discussed the RFI response rate, the use of cloud computing to alleviate burden, and the task force's intended impact. Dr. Bienenstock noted that the RFI report is expected to be finalized by the end of August 2013 and that the task force will be sharing the findings with pertinent agencies and organizations.

Dr. Jane Silverthorne, Director of the NSF Division of Integrative Organismal Systems, presented interim results of a 3-year pilot of preliminary proposals that require only a 1-page project summary, a 5-page project description, and biosketches. Dr. Silverthorne presented data suggesting that the pilot is reducing workload for program officers and the scientific community, while not harming the quality of reviews. Task force members acknowledged the need for this and other pilots to explore ways to reduce administrative work associated with proposals, and noted that the community outreach efforts continue to be essential.

[signed]

Michael L. Van Woert
Executive Officer

Attachments: (1) National Science Board Calendar of Meetings, 2014 (NSB-13-40)
(2) Charge to the Committee on Audit and Oversight (NSB-13-51)

NATIONAL SCIENCE BOARD

CALENDAR OF MEETINGS

2014

February 25 - 26
(Tuesday - Wednesday)

May 6 - 7
(Tuesday - Wednesday)
[Annual Meeting and Awards Dinner]

August 13 - 14
(Wednesday - Thursday)

September 17 - 18
(Wednesday - Thursday)
[Annual Retreat and Visit]

November 19 - 20
(Wednesday - Thursday)

Charge to the Committee on Audit and Oversight

The purpose of the Committee on Audit and Oversight (A&O) is to help ensure that NSF is properly evaluating and managing its operational risks. In achieving this purpose, A&O generally supervises the NSF Inspector General (IG), as delegated by the Board. A&O oversees major agency administrative processes and principal administrative systems, including NSF's stewardship and performance measurement activities. In addition, A&O recognizes and promotes NSF efforts to educate grantees about the responsibilities they accept upon receiving an NSF grant, and supports a positive environment that reflects good business practices. As appropriate, A&O makes recommendations to the Board for its full consideration and action.

I. Pursuant to the Inspector General Act of 1978, as amended, and National Science Board (NSB) delegation, A&O has general supervision over the NSF IG. A&O leads the selection process for employment of the IG.

The Office of Inspector General (OIG) serves as an independent and objective unit responsible under the Act for:

- conducting and supervising audits relating to NSF's programs and operations;
- providing leadership and coordination and recommending policies for activities designed to promote economy, efficiency and effectiveness and prevent and detect fraud and abuse in the administration of NSF programs and operations; and investigating cases involving misconduct in science; and
- preparing and transmitting to the NSB, for forwarding to the Congress, semiannual reports summarizing the activities of the OIG during the immediately preceding 6-month periods ending March 31 and September 30.

The OIG will provide information to and solicit input from A&O regarding the annual audit plan. OIG will keep A&O apprised of the progress of the financial statement audit and of any significant audit findings, and inform A&O of any significant investigative issues that arise. A&O members will review the OIG semiannual report and NSF management response, and it may request further information before recommending to the Board that the OIG semiannual report be transmitted to Congress.

II. A&O oversees the implementation by NSF management of the agency's principal administrative systems and internal controls. To keep itself informed, A&O will periodically receive information from senior NSF officials as appropriate including the Chief Operating Officer, Chief Financial Officer, the Chief Human Capital Officer, and the Chief Information Officer on areas including the following:

- the proposal and award system, including a statistical report on proposal disposition for each fiscal year, and the Director's annual report on merit review;

- the status of the agency's internal accounting and administrative controls systems, as required by applicable legislation;
- NSF's management information systems, consistent with applicable legislation; and the NSF personnel system, including its functioning and effectiveness.

III. A&O provides the primary means for keeping the NSB fully and currently informed of problems and deficiencies relating to the administration of NSF programs and operations and the necessity for and progress of corrective action. A&O will report to NSB, as necessary, on issues presented to it, as well as on any matters into which it has requested further research. A&O may report to NSB, as necessary, on recommendations of all U.S. Government Accountability Office (GAO) reports involving NSF, including follow-up on subsequent performance.