

MEMORANDUM TO MEMBERS OF THE NATIONAL SCIENCE BOARD

SUBJECT: Summary Report of the May 9-10, 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 May 9-10, 2013 meeting are provided. This memorandum is also made available for public review. The minutes of the Plenary Open Session for the May 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/130509/>.

1. Major Actions and Approvals at the 431th NSB Meeting (not in priority order):

- a. The Board authorized the Acting Director, at her discretion, to make an award to the Incorporated Research Institutions for Seismology (IRIS) for operation and management of Seismological Facilities for the Advancement of Geoscience and EarthScope (SAGE) (NSB-13-26).
- b. The Board authorized the Acting Director, at her discretion, to make an award to UNAVCO, Inc. for support of the Geodesy Advancing Geosciences and EarthScope (GAGE) facilities and associated programs (NSB-13-27).
- c. The Board authorized the Acting Director, at her discretion, to make an award to the University Corporation for Atmospheric Research for the operation and management of the National Center for Atmospheric Research (NCAR) (NSB-13-24).
- d. The Board authorized the Acting Director, at her discretion, to make an award to the University of Arizona for "The iPlant Collaborative: Cyberinfrastructure for the Life Sciences" (NSB-13-25).
- e. Drs. Carl Lineberger and Anneila Sargent were elected to 2-year terms, May 2013–May 2015, as members of the Executive Committee.
- f. The Board approved a revised Charge to the Committee on Programs and Plans (CPP), to include the objectives of the CPP Subcommittee on Polar Issues that was discharged in December 2012.
- g. The Board approved the Committee on Science and Engineering Indicators (SEI) STEM Education Data and Trends on-line tool, subject to final edits approved by the SEI chairman and the Board Chairman.

- h. The Board approved the topic of the Companion Piece to *Science and Engineering Indicators 2014* on the science and engineering degree as it relates to the gateway to opportunity and U.S. economic competitiveness.
- i. The Board accepted the 2012 Annual Report of the Executive Committee as presented by the committee chairman, Dr. Cora Marrett, Acting NSF Director (NSB/EC-13-1).
- j. The Board Chairman discharged the *ad hoc* Committee on Honorary Awards with thanks to Dr. Alan Leshner, chairman, and Drs. Ray Bowen, Esin Gulari, and Anneila Sargent, members.
- k. The Board Chairman discharged the *ad hoc* Committee on Nominating for NSB Elections (Elections Committee) with thanks to Dr. Douglas Randall, chairman, and Drs. Gulari and Stancell, members.
- l. The Board Chairman established the *ad hoc* Committee on Nominations for the Class of 2014–2020 with Dr. Kelvin Droegemeier as chairman, and members TBD.
- m. The Board approved the minutes of the Plenary Open Session (NSB-13-15) for the February 2013 meeting <http://www.nsf.gov/nsb/meetings/2013/0220/minutes.pdf>. Also approved were the minutes for the Plenary Executive Closed Session (NSB-13-13) and the Plenary Closed Session (NSB-13-14) held in February 2013.

[signed]
Michael L. Van Woert
Executive Officer

2. Board Chairman's Introduction and Report

Dr. Dan Arvizu, NSB Chairman, reported on the annual Awards Ceremony and Dinner at the Department of State's Diplomatic Reception Rooms on May 9, 2013. The following honorary award recipients were recognized for their distinguished contributions:

- Dr. Neal Lane, Malcolm Gillis University Professor and Professor of Physics and Astronomy at Rice University, received the Vannevar Bush Award for outstanding contributions toward the welfare of mankind and the Nation through public service in science and technology.
- Dr. Mung Chiang, Professor of Electrical Engineering at Princeton University, received the Alan T. Waterman Award, which recognizes outstanding capability and exceptional promise for significant future achievements.
- Dr. Jo Anne Vasquez, Vice President and Program Director for Teacher and Curriculum Initiatives at the Helios Education Foundation, received the Public Service Award for contributions toward increasing public understanding of science and engineering.

Dr. Arvizu announced, that in the Plenary Executive Closed Session, the Board elected Drs. Lineberger and Sargent to the Executive Committee for 2-year terms from 2013 to 2015. (See 1.e.)

On the subject of outreach—Dr. Arvizu and Dr. Cora Marrett, Acting NSF Director, testified before the House Committee on Science, Space, and Technology, Subcommittee on Research on April 17, 2013. There, Dr. Arvizu presented concerns about the Nation's leadership in science and engineering and information on the FY 2014 Budget Request; science, technology, engineering, and mathematics (STEM) education; major multi-user facilities; and NSB priorities.

During March 2013, the Chairman accompanied Dr. Subra Suresh, then (now former) NSF Director, to Chile for ceremonies for the Atacama Large Millimeter Array (ALMA) project, and was pleased to witness the signing of the new research partnership between the NSF Graduate Research Opportunities Worldwide (GROW) and Chile's National Commission for Scientific and Technological Research.

On the topic of Antarctica—the publication, *More and Better Science in Antarctica Through Increased Logistical Effectiveness* (NSF-13-77), released in March 2013, includes the Board's letter to Dr. Suresh in support of NSF's approach to addressing the Blue Ribbon Panel's recommendations. The letter indicates that the Board, through its Committee on Programs and Plans, has carefully monitored the progress of both the review and NSF's response to the report.

The Chairman discharged two committees: the *ad hoc* Committee on Honorary Awards and the *ad hoc* Committee on Nominating for NSB Elections. He also established the *ad hoc* Committee on Nominations for the Class of 2014–2020. (See 1.j.–1.1.)

Dr. Arvizu also recognized Dr. Ray Bowen, who was acknowledged by Texas A&M University with the Distinguished Alumnus Award—the highest honor bestowed upon those former students of that university who have made significant contributions to society. He also recognized Dr. Vinton Cerf, who is among the five internet pioneers to share the first Queen

Elizabeth Prize for Engineering. Nicknamed the “Nobel Prize of Engineers,” the Queen Elizabeth Prize was established to celebrate engineering work of global benefit to humanity.

Dr. Kelvin Droegemeier, NSB Vice Chairman, recognized Dr. Arvizu for being selected as one of the recipients of the 2013 *U.S. News* STEM Leadership Hall of Fame Award. The five honorees were chosen from a group of outstanding nominees representing the fields of science, technology, engineering, and math.

Lastly, the Chairman welcomed Ms. DeMonica Parks to the Board Office staff. She is on assignment as a Management and Program Analyst as part of the Board Office administrative management team. Ms. Parks is a long-time NSF employee who has served many years with the Directorate for Education and Human Resources (EHR).

3. NSF Director’s Report

Dr. Cora Marrett provided an update on the future of NSF’s headquarters. The constrained budget environment has affected the ease of procuring a 15-year lease. The NSF prospectus has been approved by Congress, which was a necessary prerequisite before the General Services Administration (GSA) could sign a new lease. Because a new long-term lease was not awarded in time to take the place of NSF’s existing lease, which expires this year, GSA has executed a 4-year extension to provide time to either conduct renovations in the current building or complete the construction of the new NSF headquarters.

Dr. Marrett announced the following NSF staff changes:

- Dr. Roger M. Wakimoto was appointed Assistant Director, Directorate for Geosciences (GEO) effective February 25, 2013.
- Dr. C. Denise Caldwell was appointed Division Director, Division of Physics, Directorate for Mathematical and Physical Sciences (MPS) effective April 21, 2013.
- Dr. Peter Arzberger was appointed Senior Science Advisor, Office of the Director (OD) effective June 2013.

Dr. Marrett acknowledged NSF staff who recently received awards:

- Drs. Margaret A. Cavanaugh, Deputy Assistant Director, GEO and Joann Roskoski, Deputy Assistant Director, Directorate for Biological Sciences (BIO) received the Presidential Rank Award. The Presidential Rank Awards Program recognizes career Senior Executive Service (SES) members who are strong leaders and who consistently demonstrate strength, integrity, industry and a relentless commitment to public service.
- Dr. Philip J. (Phil) Puxley will receive the Arthur S. Flemming Award in recognition of the outstanding and meritorious achievement in his work for the Federal government. The Flemming Awards, established in 1948, recognize outstanding public service employees. Dr. Puxley receives this honor in recognition of his leadership in the ALMA project.

Dr. Marrett provided a Congressional update:

NSF’s FY 2013 funding bill was passed by the Senate on March 20 and the House on March 21, and signed into law on March 26. The FY 2013 funding level is 2.1 percent below FY 2012 but 2.4 percent higher than the funding level specified under a proposed FY 2013 Continuing

Resolution. An amendment was successfully offered on the floor of the Senate that restricts all funding for the Political Science Program, except for any projects that the Director certifies as “promoting national security or the economic interests of the United States.” NSF continues to review all options regarding the implementation of this provision.

On April 25, 2013, Dr. Farnam Jahanian, Assistant Director, Directorate for Computer and Information Science and Engineering (CISE) testified at a joint hearing before the Research and Technology Subcommittees of the House Committee on Science, Space, and Technology on “Next Generation Computing and Big Data Analytics.”

On May 9, 2013, Dr. Jim Ulvestad, Division Director for Astronomy, MPS testified before a joint Research and Space Subcommittee hearing before the House Committee on Science, Space, and Technology on exoplanet research.

Dr. Marrett received a letter from Chairman Lamar Smith, House Committee on Science, Space, and Technology requesting information for five specific NSF awards. At the request of the Board Chairman, Dr. Marrett informed Chairman Smith on May 9 that her response will be delivered the week of May 13, after the Board has had the opportunity to discuss this topic.

The 2012 Annual Report of the Executive Committee was approved by email on April 24, 2013 and was accepted by the full Board. (See 1.i.)

4. Board Committee Reports

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

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

In A&O Open Session, Ms. Allison Lerner, NSF Inspector General, gave an update on Office of Inspector General (OIG) actions. She introduced Mr. Sal Ercolano, Clifton Larson Allen Partner-in-Charge of the NSF financial statement audit. Mr. Ercolano provided an update on the FY 2013 audit. Ms. Martha “Marty” Rubenstein, Chief Financial Officer, reported that all of NSF’s requests to waive American Recovery and Reinvestment Act (ARRA) acceleration requirements were approved by the Office of Management and Budget (OMB). Ms. Rubenstein and Ms. Lerner also noted that NSF is working with the newly appointed leadership at the University of Puerto Rico to address ongoing oversight issues.

Dr. Wanda Ward, Head of the Office of Integrative Activities (OIA), provided a summary and context for NSF’s Annual Report on the Merit Review Process for FY 2012. Dr. Ward and Ms. Judy Gan, Head of the Office of Legislative and Public Affairs (OLPA), reported on a recent review of NSF’s use of the Committee of Visitors (COV) mechanism.

b. Committee on Science and Engineering Indicators (SEI)

The committee voted to recommend that the Board approve the updated 2012 “STEM Education Data and Trends” online tool subject to final edits (See 1.g.). The tool provides an interactive

online platform to acquaint teachers, counselors, parents, students and other STEM education stakeholders with the information in *Science and Engineering Indicators (Indicators)*. The committee also voted to recommend that the Board approve *A Science and Engineering Degree: Gateway to Opportunity and U.S. Economic Competitiveness* as the topic for the companion report to *Indicators 2014* (See 1.h.). The 2012 *Indicators* mobile application will be submitted shortly to the Apple Store; it is expected that the approval process will take about a month. Additional platforms—for example, Android—will be added after the app has been released for iOS. Work has begun on the National Center for Science and Engineering Statistics (NCSES) project to redesign *Indicators* as a primarily digital document.

Finally, the committee reviewed and discussed the *Indicators 2014* draft chapters. Due to time constraints, the committee was unable to discuss chapter 7 (Science and Technology: Public Attitudes and Understanding) and plans to examine the proposed staff responses to the reviews to determine if they raise significant issues that warrant committee discussion in a teleconference.

c. Committee on Programs and Plans (CPP)

During CPP Open Session, the committee discussed and approved the final draft of their revised committee charge and forwarded it to the full Board for approval (See 1.f.). CPP also heard an update on the White House Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative. Dr. John Wingfield, Assistant Director, BIO has been asked by Dr. Cora Marrett to serve as liaison to the White House for the Initiative. The committee also heard the end of season report from the Antarctic, as part of the new CPP role in overseeing polar programs and Antarctic programs and facilities. The committee engaged in a discussion regarding the ongoing Program Portfolio Planning process, including reviewing the current framework, refining the summary outcomes, and fine tuning the process for the next round of discussions.

CPP heard two information items: an update on the renewal proposal for the Laser Interferometer Gravitational Wave Observatory (LIGO) and an update on the Advanced Technology Solar Telescope (ATST).

During the Closed Session of the CPP meeting, the committee considered four action items and heard two information items:

- Action item: Seismological Facilities for the Advancement of Geoscience and EarthScope (SAGE) (See 1.a.)
- Action item: Geodesy Advancing Geosciences and EarthScope (GAGE) (See 1.b.)
- Action item: Renewal of Award for Management of the National Center for Atmospheric Research (See 1.c.)
- Action item: iPlant (See 1.d.)
- Information items: (1) implementation of recommendations on Antarctic facilities: FY 2014 and 2015 budgets and (2) planning and prioritizing infrastructure investments in GEO.

d. Committee on Strategy and Budget (CSB)

During the CSB Open Session, Dr. Marrett provided an overview of NSF's development of the FY 2013 Current Plan. Dr. Marrett reaffirmed that NSF was striving to protect both its own internal workforce as well as investments in the future STEM workforce, and to maintain its commitments to continuing awards and ongoing construction projects. Dr. Marrett estimated that NSF would make approximately 600 fewer research awards compared to FY 2012 at the final FY 2013 funding level.

Dr. Marrett provided the committee with an overview of FY 2014 budget activities and discussed some key topics such as NSF's role in advanced manufacturing and clean energy compared with other agencies, the balance between core programs and other priorities, and the proposed reorganization of STEM education activities. She also updated the committee on the status of the FY 2014 congressional budget resolutions and the prospect of "sequestration" remaining in place for FY 2014.

Mr. Alan Blatecky, who is leading NSF's strategic planning activities, provided the committee with an update. CSB is supportive of the Foundation's submission of the "Strategic Goals and Objectives" portion of the plan to OMB in mid-June.

Finally, Dr. Cordova reported on the ongoing study in science budget trends. The small, informal working group guiding this project expects to meet and review some sample products in the near future and will share these with the committee as soon as they are ready.

During CSB Closed Session, Dr. Marrett provided the committee with an update of the FY 2013 budget. Mr. Michael Sieverts, Director of NSF's Budget Division, provided the committee with an update on the development of NSF's FY 2015 budget.

CSB Subcommittee on Facilities (SCF)

The subcommittee discussed potential changes to the SCF charge, horizon planning for MREFC projects, and the Annual Portfolio Review. During the Open Session of the CSB meeting, Dr. Carl Lineberger, chairman of SCF, briefed CSB on the SCF meeting.

e. Task Force on Administrative Burdens (AB)

Dr. Arthur Bienenstock, AB chairman, introduced invited speakers to discuss the administrative burdens associated with Institutional Animal Care and Use Committees (IACUC) and Institutional Review Boards (IRB).

Dr. Christian Newcomer, Executive Director of the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC), discussed the role of his organization as an accrediting body that promotes the humane treatment of animals in science. Dr. Marjorie Speers, President and Chief Executive Officer of the Association for the Accreditation of Human Research Protection Programs, Inc. (AAHRPP), discussed her organization's role in accrediting organizations' human research protection programs.

Discussion focused on identifying how the accrediting bodies assess their own success, the need for harmonizing regulations and policies across Federal agencies, and how the task force should respond to the many requests from the community to address the high burden associated with IRBs and IACUCs. The presentations and resulting discussions on IACUC and IRB regulations and practices will inform the task force as it moves forward with the charge of making policy recommendations to the full Board.

Dr. Bienenstock provided a summary of the comments received to date from the Request for Information (RFI) that was released on March 25, 2013, and which closes for response on June 7, 2013. Dr. Bienenstock also summarized common themes that emerged from the roundtable discussions that were recently conducted by the task force.

Finally, Dr. Bienenstock informed the task force that there would be further discussion at upcoming teleconferences on the *Proposed OMB Uniform Guidance: Cost Principles, Audit, and Administrative Requirements for Federal Awards*.

[signed]
Michael L. Van Woert
Executive Officer

Attachment: Revised Charge to the Committee on Programs and Plans ([NSB-13-22](#))

CHARGE

Committee on Programs and Plans (Approved May 10, 2013)

The standing Committee on Programs and Plans (CPP) is established to provide guidance and advice on major policy issues related to the research and related activities portfolio, to deliberate and make recommendations on the formulation of programs, and to make recommendations to the Board on approval of grants, contracts, and other arrangements and on the delegation of award authority to the Director.

Consequently, CPP is charged with providing oversight, guidance, and advice on major policy, process, and operational issues related to projects and programs. The Committee's deliberations are expected to provide a forum in which the Director fulfills his or her statutory obligation^[1] to consult with the Board on the formulation of programs. CPP also has primary responsibility for Board's statutory obligations to approve the Major Research Equipment and Facilities (MREFC) projects and their priority^[2].

In addition, NSF has a unique federal role in the Polar Regions^[3]. This is especially true in the Antarctic, where the Foundation is required, by Presidential directive, to budget for and manage the entire United States national program^[4]. In recognition of the significance of these activities within the overall NSF portfolio, this Committee is specifically charged with overseeing and providing recommendations to the Board on these large scale investments.

- I. The Committee engages in strategic planning for NSF research and related activities, monitoring and providing guidance on the creation, development, implementation, and termination of initiatives in collaboration with NSF management and other NSB committees, particularly the Committee on Strategy and Budget. This is reflected in the Committee's deliberations on:
 - o planning, management, and oversight of large projects;
 - o candidates for large agency investments;
 - o opportunities created by new discoveries; joint ventures across Federal agencies, U.S. economic sectors, or national boundaries; and Administration or Congressional priorities;
 - o initiatives that may impact the research portfolio broadly, including those which involve multiple disciplines, industry or centers and those which are directed

^[1] 42 USC § 1864(d)

^[2] 42 USC § 1862(n-4(d))

^[3] 15 USC § 4101

^[4] [Presidential Memorandum 6646, February 5, 1982](#)

toward increasing the participation of traditionally underrepresented groups and organizations as well as early career researchers; and

- Major policy issues related to the research portfolio, including agency award processes; solicited and unsolicited proposals; institutional contributions; reporting; renewals and supplementary awards; re-competition; sun setting or phase-out; and the criteria for merit review.
- Other activities as deemed appropriate for Committee planning and deliberation.

II. Following comprehensive review and discussion, the Committee may submit recommendations for consideration by the full Board and action on:

- proposed awards for NSB approval as required by law and as set forth in the NSB delegation of authority;
- new programs, major projects/facilities and their prioritization;
- Polar programs, MREFC projects, and other long-term investments, including management and operational issues;
- programs, initiatives, or policies that may significantly impact the research portfolio or the balance of activities across the Foundation; and
- The results of task forces assigned to its purview.