

MPS Advisory Committee Meeting
April 4-5, 2013

The meeting began at 1 PM. NSF representatives, Chairman Jim Berger (Duke), and member Paul Butler (Carnegie Institution) were present in the room (1235 Stafford). Other members participated remotely. See Appendix 1 for details.

April 4

1:00 PM: Introductions, Roll Call, State of the Directorate (Fleming Crim) (see presentation)

- Dr. Crim addressed questions on education investment, average grant size, the move of the Office of Cyberinfrastructure to the Directorate for Computer and Information Science and Engineering, and the Public Access Initiative from the Office of Science and Technology Policy.

2:00 PM: Report from the Division of Mathematical Sciences Committee of Visitors (Mark Green, Chair) (see presentation and report)

- Dr. Green addressed questions on the role of science assistants, disciplinary representation and utilization of women and minorities, use of rotators in policy decisions, and needed workflow improvements to enable better use of program directors.
- **The report was accepted by the Committee and forwarded to the Assistant Director for response.**

2:45 PM: Report from the Division of Chemistry Committee of Visitors (Joe Francisco, Chair) (see presentation and report)

- Dr. Francisco addressed questions about the impact of a single submission window on young faculty, plans to evaluate the impact of the CHE division realignment, COV recommendations to identify members of NSF review panels and to engage industry, and the possibility of giving program officers more flexibility for triaging proposals.
- **The report was accepted by the Committee and forwarded to the Assistant Director for response.**

3:15 PM: Status/Planning Report from Synchrotron Science Subcommittee (Mary Galvin) (see subcommittee charge)

- Dr. Galvin addressed question on the interaction and cooperation between NSF and DOE with respect to facility operation and access. Dr. Crim indicated that DMR will study future investments in light sources.

3:30 PM: Status/Planning Report from Optics & Photonics Subcommittee (Tony Heinz, Chair) (see subcommittee charge)

- Dr. Heinz highlighted aspects of the relevant NAS report, and the subcommittee's charge to identify grand challenges in the field. Dr. Crim emphasized that the charge and challenges are distinct from those for the Synchrotron Science subcommittee.
- The inaugural meeting will occur in the next 2 weeks.

3:45 PM: Update from the StatsNSF Subcommittee (Iain Johnstone, co-Chair)

- Dr. Johnstone outlined the background, multi-Directorate composition (including NSF and non-NSF members), and charge of the subcommittee. A fundamental definition of "data science" has been derived and used to focus efforts: "science of planning, acquisition, management analyses and inference from data".

4:00 PM: Impact of New Travel Policies (Kelsey Cook) (see presentation)

- Dr. Cook addressed questions about the impacts of cuts and restrictions on PI grant travel, "green" aspects of virtual meetings, and the importance of rotator travel to their home institutions.

4:15 PM: Report on Merit Review Pilot (Jim Whitmore)

- Dr. Whitmore discussed a pilot using asynchronous panels for merit review. An 8-day SharePoint virtual discussion period was followed by a 1-day face-to-face panel. The mechanism provided more in-depth discussion, but more work for panelists.

4:30 PM: Status/Planning Report from Food Systems Subcommittee (Michelle Buchanan, Chair) (see subcommittee charge)

- Dr. Buchanan indicated that multiple Directorates will participate, but the subcommittee will focus on MPS's role, with foci on catalysis chemistry, scalable low energy water purification, and scalable separation science for recycle/reuse of chemicals and mitigation of nutrient pollution.

4:45 PM: Update on Open Access Policy (Fleming Crim) (see presentation)

- Dr. Crim outlined NSF's approach to responding to the OTSP directive, indicating that a multifaceted response is likely. He addressed questions about the response of industry, potential impacts on patents, and aspects relevant to data from various scientific cultures.

5:00 PM: Preparation for Meeting with NSF Acting Director Cora Marrett (Jim Berger)

- Dr. Berger led discussion of potential topics for which the Committee may provide advice to Dr. Marrett, including NSF's very low overhead costs and elements of the review process (including expanded pre-proposal utilization).
- Homework: Members were asked to consider and discuss other topics for advice to the Acting Director, and to bring suggestions for discussion in the morning.

April 5

8:30 AM: Continuation of Preparation for Meeting with NSF Acting Director Cora Marrett (Jim Berger)

- Dr. Jane Silverthorne (Division Director, BIO/Integrated Organismal Systems) made a short presentation on the IOS pilot pre-proposal program (see presentation).
- Other ideas discussed included use of standard overhead rates, the impact of travel restrictions on NSF staff and community interactions, and the overall impact of funding instability and employment uncertainties.

9:00 AM: Meeting with OD (Cora Marrett)

- **Proposal review process:** NSF workload, revamping the evaluation process, use of more efficient tools for proposal ingestion and also for interfaces to the community. Dr. Marrett emphasized the limited resources that NSF has, and suggested that the AC might think about these issues in the light of our ability to deliver the best science outcomes.
- **NSF travel limitations:** Travel restrictions, and consequences for science agencies. Discussion focussed on impacts on the science delivery, requirements of oversight, etc.
- **Grant overhead:** Consideration of fixed overhead rate in order to deliver more money to research. Rates are set elsewhere, so NSF does not have significant control over the issue. The pending revision of OMB grant policy circulars (currently out for public comment) was briefly discussed.
- **Increase in funding requests:** Fundamental instability in training more graduate students, who aspire to faculty jobs and federal funding, causing large increases in numbers of proposals (from people who need grants to get tenure). A relevant 1992 article from *Physics Today* (John Rowell, Vol. 45, No. 5, page 40) was described.

10:00 AM: Report from the December Meeting of the Advisory Committee for Cyberinfrastructure (ACCI; Alan Blatecky) (see presentation)

- Dr. Blatecky described the reorganization of the Office of Cyberinfrastructure (now the Division of Advanced Cyberinfrastructure), and addressed questions including the breadth of its focus.

10:10 AM: Conflicts-of-Interest Briefing (Kelsey Cook)

10:15 AM: Report from the March Meeting of the Advisory Committee for Environmental Research and Education (AC-ERE; Elsa Reichmanis)

- Dr. Reichmanis discussed a draft strategic plan and ideas for identifying new programs. It was noted that research in energy (and clean energy in particular) is distributed widely throughout NSF.
- Additional discussion of proposal management, including going to one window, restricting number of proposals, and the use of pre-proposals.

10:30 AM: Report from the February Meeting of the Advisory Committee on Equal Opportunity in Science and Engineering (CEOSE; Keivan Stassun) (see presentation)

- Dr. Stassun addressed the roles of standardized test scores (and test-taking ability) and research experience on graduate admissions, and their relative impact on broadening participation.
- The Fisk-Vanderbilt Bridge program was discussed, along with a "Grit" measure of prospective students being used at Vanderbilt.

10:45 AM: Report from the February Meeting of the Advisory Committee for International Science and Engineering (AC-ISE; David Stonner) (see presentation)

- Dr. Stonner described and addressed questions about international initiatives and the restructuring of OISE.

11:00 AM: Plans and Upcoming Challenges for the MPS-AC (Fleming Crim)

- Dr. Crim described a general desire to have more discussion with MPSAC members going forward. Potential topics include:
 - Merit review/workload issues (additional pilots, such as greater use of pre-proposals)
 - Hank Warchall represents MPS on the NSF Merit Review Working Group
 - Software and IT infrastructure - how IT can support our community and NSF:
 - Investigating options that involve interagency cooperation (e.g., NIH "QVR")
 - Concern that ACI (OCI) continue to broadly support science now that it is part of CISE:
 - Possibility of a future joint AC meeting with CISE
 - Philosophical question of numbers of students educated vs. job opportunities in academia, industry, etc.
 - Public access
- Member input to the MPSAC subcommittees is welcome:
 - Question on the scope of the Synchrotron Science subcommittee and the need for training of accelerator scientists (the subcommittee will look at DMR investments)
 - Clark Cooper is the liaison to the Optics and Photonics subcommittee
- Comments on training needs of graduate students in different disciplines for academia vs. industry.

11:45 AM: Wrap-up

- Upcoming Meetings July 17-18, 2013 (Virtual); November 7-8, 2013 (Live)
- Next meeting – budget presentation, discussion meeting.

12:00 Noon: Adjourn

Attendees of April 4 2013 MPS Advisory Committee meeting:

Juan de Pablo
Keivan Stassun
Eugenia Paulus
Michael Norman
Dennis Matthews
Elizabeth Lada
James Berger
Bruce Elmegreen
Elsa Reichmanis
Emily Carter
Francis DiSalvo
Barbara Finlayson-Pitts
Irene Fonseca
Paul Butler
Juan Meza
Daniela Bortoletto
Emery Brown
Keith Bennett
Eric Cornell