

MPS Advisory Committee Meeting

April 7, 2016

The meeting began at 9:00 AM. MPS AC Committee members and NSF representatives were present in the room (1235 Stafford I). Some presenters participated remotely. See appendix for details. All presentations are available at

http://www.nsf.gov/events/event_summ.jsp?cntn_id=135978&org=MPS

9:00 AM: Welcome and Approval of Minutes –Juan de Pablo, Eduardo Misawa

Dr. Juan de Pablo served as chair of the meeting. Dr. Misawa welcomed all to the MPS Advisory Committee Meeting with around-the-room introductions and introduction of the support team. Dr. Misawa provided a briefing explaining that the MPSAC meeting follows the FACA policy. Dr. Misawa also noted that federal employee government rules and ethics apply to committee members during their time serving the MPSAC.

The February 2016 MPSAC minutes will be approved tomorrow to allow time for committee members to review.

9:15 AM: State of the Directorate – Fleming Crim

Dr. Crim presented the state of the MPS Directorate, including new personnel, MPS Leadership Retreat Activities, a detailed review of the FY 2017 budget, update on AST facilities under construction, program updates, and agenda. Discussion centered on fostering connections within NSF and between NSF and other agencies.

10:30 AM: Innovation and industry-university partnership program – Pramod Khargonekar and Barry Johnson, Directorate for Engineering

Drs. Khargonekar and Johnson gave an overview of the Directorate for Engineering's activities in innovative programs and partnerships and how to manage opportunities for innovation and commercialization and the role of small businesses. Discussion included intellectual property concerns, fostering competition, and how to measure impact.

11:30 AM: Impact of Investments in Fundamental Science and American Competitiveness – Fleming Crim

Dr. Crim gave a presentation focused on investment in science in the United States and across the globe and why and how fundamental science is a beneficial investment. Discussion focused on the difficulty of communicating the urgency of investment due to payoffs that take a decade or more and how to compare inspirational science with what is perceived as more urgent budgetary needs.

12:15 PM: Working Lunch: Preparation for the meeting with NSF Director

The Committee members created a list of topics for discussion with the NSF Director.

1:45 PM: Briefing on LIGO and measurement of Gravitational Wave – Pedro Marronetti and Mark Coles

Dr. Pedro Marronetti gave a presentation focused on what is a gravitational wave, specifically the one detected in September 2015. He focused on the role of the NSF-funded LIGO (Laser Interferometer Gravitational-Wave Observatory) project and the future of such observatories, including the approval of LIGO India, upgrades to the current LIGO system, and the new ideas in the community for future installations. Discussion centered on how the astronomy community works together and shares observations.

2:30 PM: Meeting with the NSF Director

Dr. Córdoba, the Director of NSF, answered a number of questions from the Advisory Committee. Questions included how NSF will identify the next grand challenge for long-term investment analogous to LIGO, the nature of NSF's international collaborations, how to invoke real change through the INCLUDES program, the NSF's plans for cyberinfrastructure and data science, and what to fund and not fund in an era of flat budgets.

3:45 PM: Support for young investigators – Fleming Crim

Dr. Crim lead discussion on what challenges face new faculty, how NSF impacts research evaluation, how tenure decisions are made across disciplines and universities, and how NSF can help young investigators improve their grant writing skills and encourage mentorship.

4:30 PM: Updates from the Advisory Committee on Environmental Research and Education – Michelle Buchanan, Oak Ridge National Laboratory

Michelle Buchanan, of Oak Ridge National Laboratory, Department of Energy, presented an update from the Advisory Committee on Environmental Research and Education, including an overview of their September 2015 report, "[America's Future: Environmental Research and Education for a Thriving Century](#)". The MPS AC responded that it would be helpful to have more specific guidance than was presented in the report.

5:00 PM: Adjourn

April 8, 2016

9:00 AM: Meeting opening and Approval of Minutes –Juan de Pablo, Eduardo Misawa

The February 2016 minutes were approved.

9:15 AM: Update on the NRT program – Joan Ferrini-Mundy, Directorate for Education and Human Resources

Joan Ferrini-Mundy and Dean Evasius, from the Directorate for Education and Human Resources, gave a joint presentation on the NRT program. Discussion focused on the low funding rates of the program. Suggestions were made to seek funding from other government agencies and national labs, and to have the number of proposals permitted per institution scale with the size of the institution, from 1 – 4 proposals.

10:00 AM: Updates from Committee on Equal Opportunities in Science and Engineering (CEOSE) – Robert E. Megginson, University of Michigan

Robert E. Megginson, from the University of Michigan, presented an update from CEOSE. Discussion focused on requirements and ideas for the INCLUDES program.

10:30 AM: Updates from Advisory Committee for Cyberinfrastructure (ACCI) – Juan Meza, University of California at Merced

Dr. Meza presented updates from the NSF Advisory Committee for Cyberinfrastructure, focusing on the 3 working groups recently established by the committee which are 1) Data and code access and reproducibility working group, 2) Software scale and scope working group, and 3) Learning and workforce development working group. Discussion centered on the first working group.

11:00 AM: Discussions

Dr. Crim led the Advisory Committee on a discussion focused on two areas: 1) Scheduling of future advisory committee meetings and 2) New faculty funding. The Advisory Committee discussed the benefits of Face-to-Face meetings over Virtual Meetings, and agreed that in person meetings were preferable given the increased likelihood of meaningful participation, but virtual meetings were easier to schedule and should be more focused going forward.

With respect to the topic of new faculty, some committee members wanted to see more data on the topic to see if there really is a problem with it being too difficult for new faculty to get funding from NSF. The general consensus was that no one wants to lower standards, but we need to address the increasing demands on junior faculty. NSF will work on defining what they want to accomplish with regard to the new faculty topic and it will be revisited.

12:00 PM: Adjourn

Appendix

Attendees:

NSF employees

Fleming Crim
Deborah Lockhart
Eduardo Misawa
Clark Cooper
Kathy McCloud
Carol Bessel
Angela Wilson
Jim Ulvestad
Denise Caldwell
Brad Keister
Jennifer Pearl
Charles Ying
Jennifer Pearl
Michael Vogelius
Saul Gonzalez
Elizabeth Burrows
Stephanie Albin
Sara Dwyer
Vivaca Brooks

MPS AC members

Juan de Pablo
Caty Pilachowski
Bruce Elmegreen
Emery Brown
Robert Bryant
George Crabtree
Phil Bucksbaum
Jennifer Chayes
Graham Cooks
William Zajc
Mark Cardillo