

# MPS Advisory Committee Meeting

***November 5, 2015***

The meeting began at 8:30 AM. NSF representatives, Chairman Juan de Pablo, the MPS Advisory Committee (MPSAC) members and other guests were present in the room (375 Stafford I). Other members participated remotely. See appendix for details. All presentations are available at [http://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=135977&org=MPS](http://www.nsf.gov/events/event_summ.jsp?cntn_id=135977&org=MPS) .

## **8:30 AM: Meeting opening & FACA Briefing –Juan de Pablo, Eduardo Misawa**

Dr. Juan de Pablo welcomed all to the MPS Advisory Committee Meeting with around-the-room introductions. Dr. Eduardo 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. Dr. de Pablo requested approval of April 2015 MPSAC meeting minutes, and they were unanimously approved.

## **9:00 AM: Science Hors d’oeuvres**

Dr. Fleming Crim presented a science hors d’oeuvre on the evolution and impact of research in the theory of compressed sensing. This discussion highlighted the long-term powerful impact that the fundamental research plays in the field of science.

## **9:30 AM: MPS Updates – Fleming Crim**

Dr. Crim presented the state of the MPS Directorate including an update to MPS’s new and departed personnel, a welcome to all new members of the MPS Advisory Committee, a description of MPS Leadership Retreat Activities, the status of the FY 2016 budget, an update on AST facilities competitions, updates to MPS programs and a highlight of the agenda. There was no discussion.

## **10:15 - Updates on NSF initiative: INCLUDES**

Dr. Pramod Khargonekar, with assistance from Dr. Suzi Iacono and Dr. Joan Ferrini-Mundy, presented and led a discussion about the NSF INCLUDES initiative. They provided an overview of FY15 activities and laid out the plans for FY16 and beyond. The goal of the initiative is to bring atypical groups together to offer a paradigm shift that would achieve inclusion at scale.

## **11:00 - Graduate Student Training**

Dr. Crim and Dr. Nirmala Kannankutty, a representative from NSF’s National Center for Science Engineering Statistics (NCSES), discussed data on recent trends in the proportion of PhDs that go into academia vs. industry and other professions. Since workforce development is a major mission of NSF, the conversation focused on whether the number of PhDs in certain fields is in line with the available jobs, as well as how to better prepare graduate students with knowledge and skills beyond the scientific ones, such as communication and management.

## **12:45 - Updates on NSF initiative: INFEWS**

Dr. Carol Bessel presented information regarding the NSF initiative: Innovations at the Nexus of Food, Energy and Water. She described the 2014 MPSAC report on Food, Energy, and Water as well as two subsequent Dear Colleague Letters. The first DCL resulted in the funding of 17 workshops, supplements, and a number of EAGER grants. The second DCL was written by CHE and CBET and requested proposals on nitrogen, phosphorus and water research. Discussion centered on potential causes of the low number of INFEWS proposals received in response to the second DCL during the most recent submission window.

### **1:15 - Update on Partnerships**

Dr. Jennifer Pearl presented an update on partnerships between NSF and non-profit funders of basic research (private foundations) in MPS fields. She highlighted findings from a May 2015 workshop report. Themes developed during that workshop included the different missions of private vs public funding bodies, different logistical approaches, and the importance of preserving a multiplicity of funding sources. Discussion centered on the logistics of some current (and potential) partnerships.

### **1:45 - Robust and Reliable Science**

Dr. Clark Cooper solicited input from the Advisory Committee on the topic of Robust and Reliable Science: The Path Forward. He described conclusions from a recent Director's Symposium on this topic, highlighted facts regarding research and publication, and described the increased pressures researchers face today on this topic. Discussion focused on data management plan requirements and how to facilitate certain needs that are appropriate for the MPS community.

### **2:30 - Division of Materials Research Committee of Visitors (COV) Report**

Dr. Nicholas Abbott presented on the COV Report written for the Division of Materials Research. In this discussion, Dr. Abbott outlined 12 recommendations made by the committee, especially emphasizing a reassessment of DMR's investment priorities. Discussion centered on DMR's efforts to produce a study with the National Academy of Science to assess emerging topics in the field of materials research for guidance of future investments. The COV report was unanimously accepted by the MPSAC members and formally approved.

### **3:30 - Update on Public Access**

Dr. James Kurose presented on NSF's Public Access Initiative, which focuses on improving public access to federally funded research results. Most recently, NSF has been working on developing a Public Access Repository for publications including journal and juried conference papers. Secondly, he discussed data management plans, their changing guidelines, and how much of the requirements for these plans will be left up to community-specific standards. Discussion centered upon questions related to how exactly publicly accessible papers will be made available and how budgeting will work for this plan.

### **4:00 - National Strategic Computing Initiative (NSCI) briefing**

Dr. Kurose provided a background and context to the National Strategic Computing Initiative (NSCI), an Executive Order signed by President Obama on July 29, 2015. The five objectives underlined in this initiative intend to enhance high-performance computing benefits to enhance the nation's economic competitiveness, national security, and scientific discovery. In this discussion, Dr. Kurose described NSF's role, plans, and leadership in the initiative; and emphasized the critical role fundamental research plays in achieving the major objectives of the initiative.

### **4:45 - Preparation for meeting with NSF Director**

The advisory committee members discussed about topics and effective ways to present them during the meeting with the NSF director next day.

## **November 6, 2015**

### **8:30 - Meeting opening**

The meeting began at 8:30 AM. Chairman Juan de Pablo, the MPS Advisory Committee (MPSAC) members, NSF representatives, and other guests were present in the room (375 Stafford I).

### **9:00 - Meeting with NSF Director**

The Advisory Committee engaged in stimulating dialogue with Dr. Cordova, NSF Director in selected topics such as robust and reliable science and workforce development. Throughout this session, Dr. Cordova highlighted the level and scale of NSF's involvement in these important areas. Further, she described the areas of concern NSF sees on those issues and some the challenges the agency faces to address those concerns. Throughout the discussion, Dr. Cordova solicited feedback from the committee to gather their viewpoints on how NSF can better move forward on these issues as a whole.

### **10:15 - Broader Impacts**

Dr. Crim noted that recent conversations on the topic of broader impacts have been largely driven by the feedback the directorate received in its Committee of Visitors reports, in addition to conversations heard throughout the community. In turn, Dr. Crim indicated that the demonstrated interest on the topic has led to some key questions for the committee to consider. These questions included whether broader impacts is an issue; whether it is working or not; how PI's perceive this topic; what about this topic confuses the scientific community; and finally, whether or not research itself can meet the broader impacts requirements as it is currently defined. Following Dr. Crim's opening remarks and review of comments on broader impacts, Dr. Crim opened the topic up for discussion. Some themes emerged from the committee's discussion including the necessary flexibility for the interpretation, implementation, and assessment of the criterion used for broader impacts. Given the differences across NSF research communities there is a health variation in the interpretation and the implementation of broader impacts need for clarification on how the program directors use reviewers' broader impacts comments to evaluate, assess, and make decisions on proposals, and support to the suggestion that institutions could establish and enhance frameworks that PI's can leverage for carrying out broader impacts.

**Appendix 1:**

**Attendees of November 5 - 6, 2015 MPS Advisory Committee meeting:**

\* indicates phone participant

MEMBERS

Robert Bryant  
Phil Bucksbaum  
Mark Cardillo  
Graham Cooks  
George Crabtree  
Juan de Pablo  
Bruce Elmegreen  
Catherine Pilachowski  
Melanie Sanford  
William Zajc\*

GUESTS

James Murday  
Bettina Schuffer  
Hans Kaper  
Kate von Holle  
Amber Gray  
Joydip Kundu

NSF

Keith Bennett  
Carol Bessel  
Lauren Broccoli

Elizabeth Burrows  
Denise Caldwell  
Clark Cooper  
F. Fleming Crim  
Sara Dwyer  
Clifford Gabriel  
John Gillapsy  
Eda Gimenez  
Sean Jones  
Bradley Keister  
Patricia Knezek  
Tie Luo  
Brian Meadows  
Bogdan Mihaila  
Eduardo Misawa  
Timothy Patten  
Jennifer Pearl  
Linda Sapochak  
Nigel Sharp  
Paul Spyropoulos  
James Whitmore  
Michael Vogelius  
Yong Zeng