



UNITED STATES GOVERNMENT
M E M O R A N D U M

DIRECTORATE FOR MATHEMATICAL AND PHYSICAL SCIENCES

Date: November 1, 2010
From: Assistant Director, MPS
Subject: **MPS Advisory Committee Meeting November 3-5, 2010**
To: MPSAC Members

It is a pleasure to welcome you to the upcoming meeting of the Mathematical and Physical Sciences Directorate Advisory Committee (MPSAC), to be held on Thursday and Friday, November 4 - 5 at the National Science Foundation in Arlington, Virginia.

I want to thank the members of the Committee who have just rotated off for all of their efforts on behalf of MPS over the last three years. I particularly want to thank Dr. Iain Johnstone of Stanford University for his leadership of the MPSAC as Chair for the past two years. His service has been invaluable to MPS, to NSF, and to me personally. Other members who have rotated off are Dr. Hector Abruna (Cornell University), Dr. David Keyes (Columbia University), Dr. Theresa Maldonado (Texas A&M University), and Dr. Joel Tohline (Louisiana State University). I want to express my sincere appreciation to all of them for the time and the effort they have devoted to this committee and to our Directorate. Although their terms would have expired at the end of September, I have asked Dr. Eric Cornell (University of Colorado and NIST), and Dr. Dennis Matthews (University of California, Davis) to remain on the MPSAC as they were the co-chairs of two of the MPS/MPSAC working groups we created last year.

And I want to welcome new members to the MPSAC: Dr. Paul Butler (Carnegie Institute of Washington), Dr. George Crabtree (Argonne National Laboratory), Dr. Naomi Halas (Rice University), Dr. Juan Meza (Lawrence Berkeley National Laboratory), Dr. Michael Norman (University of California, San Diego), Dr. Eugenia Paulus (North Hennepin Community College), and Dr. Esther Takeuchi (University of Buffalo). I and the MPS staff look forward to their participation and counsel in our discussions. We are asking new members of the MPSAC to arrive a day early (Wednesday, November 3) to be briefed on activities of NSF, MPS, and Divisions within MPS. Continuing members are also welcome to attend.

I am very pleased to announce that Dr. Jim Berger (Duke University) has agreed to be the Chair of the MPSAC. The staff of MPS and I are looking forward, as I am sure you are, to working with him on MPSAC matters. As many of you know, last year Jim helped energize a group to look at data-intensive science activities in the MPS disciplines that has had significant impact at NSF and beyond.

It is with much sadness that I note that Dr. John Huchra of the Harvard-Smithsonian Center for Astrophysics and Harvard University, who rotated off the committee on October 1, 2006 and who had recently completed a term as President of the American Astronomical Society, passed away in October. John served his community, American science, and the National Science Foundation in numerous ways, and we have all suffered a great loss. I received much needed advice from John when I came into MPS last year, and I'll miss him and his counsel.



I am sure that all of you are aware that Dr. Subra Suresh of the Massachusetts Institute of Technology was sworn in as the 13th NSF Director October 18 for a six-year term. Suresh, 54, served as dean of the engineering school and as Vannevar Bush Professor of Engineering at the Massachusetts Institute of Technology. A mechanical engineer who later became interested in materials science and biology, Suresh has done pioneering work studying the biomechanics of blood cells under the influence of diseases such as malaria.

From 2000 to 2006, he served as the head of the MIT Department of Materials Science and Engineering. He joined MIT in 1993 as the R.P. Simmons Professor of Materials Science and Engineering and held joint faculty appointments in the Departments of Mechanical Engineering and Biological Engineering, as well as the Division of Health Sciences and Technology.

At this meeting you will have the opportunity of meeting MPS Division Directors who have or will be joining MPS. I am pleased to welcome Dr. Sastry Pantula of North Carolina State University as the new Division Director of Mathematical Sciences (DMS), and Dr. Matthew Platz of Ohio State University as the new Division Director of Chemistry (CHE). Dr. Ian Robertson of the University of Illinois at Urbana-Champaign (and a former member of MPSAC) will become the Director of the Division of Materials Research (DMR) at the beginning of January, 2011. I should also like to recognize the services of the three previous Division Directors: Dr. Luis Echegoyen (CHE), Dr. Zakya Kafafi (DMR), and Dr. Peter March (DMS). Each, during their tenure as Division Director, has made a significant contribution to their fields and we are grateful for the services they have rendered to NSF and to American science.

Our meeting in November will take place immediately after the Nation's mid-term elections that take place tomorrow, and I am sure you will be wondering what impacts these elections will have on science and technology, on NSF. It is clearly too early for me to speculate on this. I can say that, with new leadership across MPS and at NSF itself, and with new faces in Congress anticipated, it will be an important opportunity for you to help us move science forward in a time of such transition.

NSF is currently operating under a continuing resolution. The NSF FY 2011 budget is still before Congress, and an appropriations bill for NSF has yet to be passed by Congress and signed into law by the President. This NSF operating plan provides NSF with funding until December 2010 at a level equal to 90% of what we received in FY 2010. The impact of the current continuing resolution on our Divisions will be discussed by the Division Directors with you during breakout sessions Thursday afternoon. I cannot discuss the FY 2012 budget at present, but it will become public in February 2011 when the President presents the budget request to Congress.

There are several agenda items that I would like to bring to your attention.

The first concerns time we've set aside on Thursday and Friday for discussion of the Large Synoptic Survey Telescope (LSST). This project involves the construction of a telescope with an 8.4-meter diameter mirror that would image the entire sky visible from its proposed location in Chile every few nights, and record changes that take place. Approximately 30 terabytes of data that are obtained each night will open a new window on the deep optical universe - the time domain - enabling the study of variability of objects both in position and time. Design and development activity of this project is supported in part by MPS with additional funding comes from private foundation gifts, grants to universities, and in-kind support of Department of Energy laboratories and LSST member institutions. Additional information on this project can be found at the LSST web site (www.lsst.org). There will be a presentation on this project Thursday morning by Dr. Taft Armandroff, Chair of the MPSAC Facilities Subcommittee, Dr. Wayne van Citters, and Dr. Jim Ulvestad. A recommendation concerning this project will be provided by the subcommittee and discussed and voted on by MPSAC.

The second concerns the topic of broadening participation. It is clear that the population of the United States is changing, and it is imperative that the science, engineering and education cohorts of tomorrow will present a different ethnic and gender composition than that of today. One of the MPSAC/MPS working groups we created last year involved this topic, led by Sharon Neal. The report she delivered at last April's meeting has received wide circulation within NSF, and, as a result, there will be a joint meeting of the MPSAC and the Education and Human Resources (EHR) Advisory Committee on Thursday morning. At this meeting Sharon will describe the recommendations of the report, followed by discussion with both advisory committees. I should also mention the MPS is initiating a joint working group with EHR and with the Social and Behavioral Sciences Directorate (SBE) in this area.

The third agenda item concerns a meeting we will have with the Director and Acting Deputy Director of NSF. I'm delighted that they have been able to find time in their schedules, and we will meet with both of them at 4 PM on Thursday. We've set aside time Thursday morning to prepare for this meeting.

Dr. Morris Aizenman, the Senior Science Associate in MPS, serves as a liaison between the Advisory Committee and the MPS Directorate. Should you have questions or suggestions concerning activities of the Committee, please contact him at 703-292-8807 or by email at maizenma@nsf.gov. Ms. Terri Powell, has already sent you information concerning travel and hotel arrangements. Should you have any questions concerning your travel, you may reach her at 703-292-8800 or by email at tpowell@nsf.gov.

I look forward to a productive meeting and to seeing you in November.

Sincerely yours,

H. Edward Seidel
Assistant Director