

American Mathematical Society
Committee on Science Policy Meeting
March 6-7, 2009
Washington, DC

Summary Report

The 2009 Committee on Science Policy (CSP) meeting included discussions about getting involved in the legislative process and grassroots advocacy, the outlook for future science funding, mathematics and biomedical research, NSF-DMS budget and award information, the role of mathematics in cybersecurity, and building constructive international science partnerships.

Highlights from Presentations:

Representative Jerry McNerney (CA-11-D)

U.S. House of Representatives

Congressman McNerney gave meeting attendees information about his background in mathematics and business and about his decision to run for Congress. He encouraged all attendees to get involved in the legislative process, to forge relationships with their Congressional representatives and to work toward increasing the federal investment in science. He outlined what language resonates with elected officials and what may sway them to a particular point of view. He also encouraged support for politicians that are aligned with one's own interest.

Peter March

Director, Division of Mathematical Sciences

National Science Foundation

Peter March began by presenting budget and award information for the Division of Mathematical Sciences (DMS) over the past several years. He then summarized three new initiatives at DMS for FY2009, including: Proactive Recruitment in Introductory Science and Mathematics (PRISM), which focuses on partnerships that will attract freshmen and sophomores to STEM disciplines; CHE-DMR-DMS Solar Energy Institute (SOLAR), which is an interdisciplinary approach to solar energy; and DMS/DTRA (Defense Threat Reduction Agency) activity in data and algorithms, which will help in the detection of chemical and biological materials.

March then discussed the DMS effort to increase the number of workshops and reports that the mathematical sciences community engages in. He stressed that information from the research community must be disbursed to the wider community with enough frequency and depth as to convey an understanding of what is happening in the mathematical sciences.

March also talked about the new Administration's desire to increase the number of graduate research fellowships (GRF). He pointed out that GRFs are awarded by discipline in proportion to the number of proposals received, so the mathematics community should submit more proposals in order to reap more GRFs for the mathematical sciences.

John Whitmarsh

Special Assistant to the Director, National Institute of General Medical Science,

National Institutes of Health

John Whitmarsh first gave attendees some background information on the National Institute of Health (NIH) and the National Institute of General Medical Science (NIGMS) and then discussed how interdisciplinary teams are becoming crucial to the changing world of biological and biomedical research.

Whitmarsh discussed funding opportunities to support research in mathematical biology, including a joint NSF/NIGMS Mathematical Biology Initiative. This initiative began in 2002 and has funded over 120

investigators at a typical funding level of \$1.0 to 1.5M per grant. He also gave some examples of research projects under this initiative. Other funding opportunities discussed included Investigator Initiated Research Grants (e.g. ROIs) and supplements to ongoing research projects.

Walt Polansky

***Cyber Security Advisor, Advanced Scientific Computing Research,
U.S. Department of Energy***

There are three major mission components at the U.S. Department of Energy (DOE): energy security, nuclear security and scientific discovery and innovation. The agency's Office of Science, which includes Advanced Scientific Computing Research (ASCR) as one of its six interdisciplinary research offices, is focused on scientific discovery and innovation.

Walt Polansky discussed the vision of ASCR, its budget and its facilities and research program strategies. He presented a snapshot of three of its major FY2008-2009 requests for proposals in Multiscale Mathematics and Optimization for Complex Systems, Petascale Tools and Next Generation Networking for Science and he talked about how ASCR is motivated by input from the research community to identify opportunities in research areas.

Cybersecurity is one subject that presents an opportunity for mathematics research particularly in three major areas: predictive modeling of large scale networks, cyber threats discovery and network dynamics.

David Weinreich

Legislative Director, Office of Rep. Bob Etheridge (NC-02-D)

David Weinreich presented his views on the outlook for science funding in the coming years. He spoke about the state of the U.S. economy, our growing debt and the host of priorities that will put significant pressure on federal budgets for years to come. As the economic crisis wears on, funding for scientific research could suffer. The recently passed economic stimulus bill (American Recovery and Reinvestment Act) brings a large influx of money into the scientific research and development arena, but it will be a challenge to sustain this level of science funding.

Weinreich also discussed how his mathematics background benefits him in his work in Congress. He went on to talk about the importance of relationship building in dealing with Members of Congress and how focused they are on the needs of their constituency.

Jeffry Phan

Legislative Assistant, Office of Senator Jeff Bingaman (NM-D)

Jeffry Phan continued the discussion on what the future holds for scientific R&D funding. He spoke of how the U.S. economic crisis is a call to action in the scientific research community to increase its level of advocacy for sustained federal research funding. He showed how the case must be made to both budget authorizers and appropriators that investing in science will help the nation's economic recovery. He, too, talked about the importance of relationship building.

Nina Fedoroff

***Science & Technology Advisor to the Secretary of State and to the Administrator of USAID
U. S. Department of State***

Nina Fedoroff spoke to attendees about "science diplomacy" or the use of scientific collaborations among nations to address the common problems of the peoples of the world. For instance, agriculture is an area where modern science is essential. Genetic modification of plants has enabled the production of more efficient and abundant crop plants, and although there are many countries, including the U.S., that are hesitant to embrace these food sources, they are essential in a world with growing populations and limited resources.

Fedoroff noted that the world's food crisis is not the only area in which scientists and engineers can use their skills in the service of international diplomacy. Seemingly separate issues can create complex global

problems. Building constructive global scientific partnerships will go a long way in solving these complicated problems.

Joel Parriott

***Program Examiner, Science and Space Programs Branch,
White House Office of Management and Budget (OMB)***

Joel Parriott's role as Program Examiner at the Office of Management and Budget gives him oversight responsibility for the National Science Foundation (NSF). He talked about the American Recovery and Reinvestment Act (ARRA) and the process by which NSF is to receive and make use of these funds. He also discussed what he believes the new Administration's top research spending priority areas will be and he advised attendees of President Obama's desire to triple the size of the Graduate Research Fellowship program as NSF.

James Rath

***AMS 2008-09 Congressional Fellow
Office of Rep. Ruben Hinojosa (TX-15-D)***

The current AMS Congressional Fellow, Jim Rath, discussed his background in the mathematical sciences and how he came to the fellowship program. He talked about the program itself and the orientation and training provided to fellows by the AAAS.

Rath shared his experiences as a staff member in a Congressional office citing the physical space limitations, working hours and task assignments. He also talked about the unpredictability of each day's work and how priorities can shift many times in a given day. He spoke also about Rep. Hinojosa's participation in the House Diversity and Innovation Caucus, which helps to address the under-representation of women and minorities in STEM fields.

Ron Stern

***AMS Committee on Science Policy Chair
University of California, Irvine***

Ron Stern reiterated some of the items brought up during the meeting: he encouraged department chairs to have their graduate students take advantage of the Graduate Fellowship Program at the NSF; he reminded attendees of the importance of looking for opportunities to publicize mathematics; and he spoke of the importance of building international scientific partnerships to address global problems.

Other Discussion

Ron Stern led a discussion about grassroots advocacy for math and science. Ideas were shared about how to get more mathematicians involved in grassroots efforts to increase federal research funding. Graduate students were identified as a group that would be a likely source of willing participants.

Committee on Science Policy Events at the 2010 Joint Mathematics Meeting

For the 2010 Joint Mathematics Meeting, the committee will either secure a high level government speaker or hold a panel discussion on a subject to be determined.

Date of Next Meeting

The committee will next meet on March 12-13, 2010 in Washington, DC.

Submitted by Anita Benjamin
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