AMS Committee on Science Policy
Report on meeting held April 26-27, 2002, Washington DC

CSP traditionally meets as the appropriations process is gearing up in Washington, therefore a large portion of the meeting is devoted to visits by Congressional and Administration insiders knowledgeable about the federal budget process. New this year was a representative from the National Institutes of Health, and a Saturday session intended to get committee members involved in grass roots strategies for contacting their Members of Congress. Several department chairs attended, in addition to science policy representatives from other mathematical organizations. For the first time, members of the Coalition for National Science Funding were invited to attend some of the briefings.

Highlights:

James Cassatt, Director of the Division of Cell Biology and Biophysics, National Institute of General Medical Sciences, talked to CSP about opportunities for mathematicians at the National Institutes of Health, outlining the many funding mechanisms available in addition to investigator initiated grants. Cassatt said that science has entered a new era with the mapping of the human DNA, and the growth of genetics data banks. Science is now increasingly interdisciplinary, collaborative, data intensive, may not be hypothesis-driven, and may require mechanisms other than the traditional research grant. Cassatt pointed to the NIGMS/NSF biomath initiative as an example of new funding opportunities for mathematicians.

PhilippeTondeur, Director of the Division of Mathematical Sciences, National Science Foundation, was happy to report that recent increases in the division's budget have been dramatic, and mathematics is now funded at a comparable level with other sciences. Tondeur spoke briefly of the NSF budget request for FY 2003. (For an overview of federal funding for mathematics in the President's FY 2003 budget request, see table at end of this report.) The current DMS portfolio includes individual investigator grants, research groups, national institutes, and vertical integration of research and education. He reported positive results from the VIGRE program (dramatic increases in REU participation and significant increases in mathematics majors), and provided information about the Career/PECASE awards and focused research groups. A new NSF venture is BIRS (Banff International Research Station), based in Alberta, Canada, with joint funding by some Canadian provinces and agencies. NSF awarded funding to MSRI for support of US visitors to this center over four years. Pointing out that NSF – although the major funding agency for mathematics research – is only part of the picture, Tondeur pointed to the increasing role of NIH as a source of funding (e.g., the opportunities in math-bio). He encouraged the profession to look to NIH and also the Department of Energy as important sources. Tondeur is concerned that the Department of Defense research budget is incomparably smaller than it was 20 years ago.

Hyman Bass, AMS President thanked Tondeur on behalf of AMS and CSP for his optimism and vision as DMS Director. Bass said the mathematical community owed Tondeur a great deal and urged NSF to try to find a replacement as soon as possible to continue the momentum resulting from his wonderful work. There was a standing ovation.

Jill Harper, of the office of Congressman Rush Holt, and **Ashwin Vasavada**, from Congressman Vernon J. Ehlers's office, talked with CSP about their experiences working on Capitol Hill as AAAS Science Fellows. Both have the good fortune of working with former scientists, which is not usual for the fellows. Vasavada said that about a third of the fellows go back to academia after their fellowship, and a third stay in Washington in government work. Both visitors felt that Members of Congress get bombarded with scientific advice, sometimes bolstering two opposing positions; the main source of unbiased information is still the National Academies of Science.

James Turner, Chief Counsel, Minority Staff, House Committee on Science, talked about how Congress gets scientific information. Agreeing with the science fellows that there is no shortage of scientific advice, Turner said the challenge is to get Members to hear it. Scientists should realize that Congress thinks completely differently than academia. Turner advised CSP to learn to tell stories, anecdotes, and remember that politicians are great at public relations. A smile is not a commitment; Members need to hear your

argument at the right time, i.e. at the time of the vote. Himself a former fellow, Turner gave CSP a somewhat different perspective on the benefits of the experience to the fellow, to the Member of Congress in whose office the fellow resides, and to the sponsoring organization. Turner had been asked to provide CSP with background on the demise and possible revival of the Office of Technology Assessment. He felt that the absence of this source of objective technical information, tailored to the needs of Congress, was being felt and there was a shift in the opinions of the former opponents of OTA. As usual, Turner gave a crisp analysis of the prospects for science funding in the FY 2003 appropriations process. He felt the NSF budget was a work in progress. In the very near future there would be a bipartisan effort in the House and Senate to introduce bills calling for a 15 percent increase for NSF for the next five years, but that the chances of that much being appropriated were miniscule. However, he thought the support signaled by authorization bills, and those such as Rep. Rush Holt's, was important because the bills force the appropriators to pay attention to the fate of NSF. He predicted there would eventually be a compromise between President Bush's request and the calls for 15 percent increase.

David Goldston, Chief of Staff, Majority Staff, House Committee on Science, provided a majority view of legislation affecting science. HSC chair, Rep. Sherwood Boehlert, took over with three priorities: education, energy, and the environment; later he added terrorism. Goldston outlined current legislation focused on these priorities. Bill HR.1858, passed in 2001, included President Bush's mathematics and science partnership proposals. Bill HR.3130, the Technology Talent Act, has bipartisan support and Sen. Joseph Lieberman has introduced a companion bill in the Senate. Aimed at increasing the number of science, mathematics and technology degrees by offering incentives to universities, grants would be made to institutions who introduce innovative methods to increase, and retain, the number of science and technology majors; applicants would be accountable for producing their predicted increase in majors. Bill HR. 3394 would create new programs within NSF and NIST on cyber security. Hearings will be held in June on the extent to which security issues as a result of 9/11 impact the conduct of scientific research, and there will be a follow-up on the research into the implications of the collapse of the World Trade Center towers; NIST is planning a $16M investigation. A bill will be introduced to permanently change the way the government carries out these post investigations.

A reauthorization bill would soon be introduced, aimed at doubling the NSF budget and calling for a 15 percent increase for each of the next three years. Boehlert intends moving on this bill by the end of April. This sends a strong signal that the House intends to go above the President's budget request for NSF. However, authorizing is the easy step; afterwards will come the hard work with the appropriators. Goldston reminded CSP that appropriations are done every year for each federal agency. The HSC is also laying the groundwork for appropriations in future years. Goldston thought that the House would pass its NSF appropriations bill by the end of July.

Goldston had a different take than Jim Turner on the question of the Office of Technology Assessment, insisting that it had been abolished not because of politics, but for budgetary reasons. He felt it was a dead issue; OTA had been just one of many different sources of science information to Congress. But the fact that the idea of re-creating OTA had emerged reflected recognition by Congress that many of their questions require scientific knowledge.

David Radzanowski, NSF Budget Examiner, Office of Management and Budget, turned CSP's attention to the Bush Administration's proposed investment criteria for R&D, and its management agenda for allocating resources. In an attempt to improve management performance at federal agencies, a tentative "score card" had been drawn up which, CSP was amused to see, rated NSF as the only agency receiving a green (ie good) sticker. Three criteria are proposed for all R&D programs: 1) relevance (to Presidential priorities, agency missions, fields of science and "customers"); 2) quality; and 3) performance (on-schedule and cost effective). After finalizing the criteria OMB will work with federal agencies to apply them. CSP members expressed some skepticism about the scheme, John Ewing noting that two types of evaluation were compounded in the plan -- evaluation of the agencies and their management of their funds, and evaluation of the research funded. Radzanowski acknowledged that there was ongoing debate at OMB about that, and also how to evaluate "blue sky" research. He thought that the plan would be implemented at NSF very differently than at other agencies.

Joel Widder, Professional Staff, Senate Appropriations Subcommittee on VA, HUD and Independent Agencies, noting that CSP had heard all the nice things the authorizers were going to do, brought a sobering note to the meeting. He delivered a lesson about the world of appropriations in which NSF lives (i.e., vying with VA and HUD, the two elephants in that particular world), as he went over the numbers in the President's FY 2003 budget request, which he flatly described as "bogus" because it is based on assumptions that Congress would take actions to generate savings via controversial changes to veterans' medical care and federal retirements -- actions that Widder thought hugely improbable. The President requests a 5 percent increase for NSF, but one third of that increase consists of proposed transfers of programs (and their budgets) from other agencies into the NSF budget. This was an idea cooked up by OMB, not by NSF, and Widder seemed to think it would not fly in Congress. He told CSP that this year the Senate Subcommittee could not be as generous as the House (apparently because the House salted away money for the National Service Program -- money that was not spent). Widder said that Senators Mikulski (chair) and Bond (ranking Democrat) are both amazingly supportive of NSF. They want to put the agency on a doubling track, and would try to do better this year than last, but at this point they just do not have the money. Last year, in the end NSF did well because Mikulski and Bond, and Representatives Walsh and Mollohan, got together and decided they should put what money they had into NSF. However, this year Widder predicts a long hot summer of appropriations battles that would go into fall and the numbers would not look very good. When asked for advice on making the voices of the science community heard, he advised against counter-productive strategies such as the recent environmentalists' broadcast fax assault on the appropriations subcommittees fax machines. Widder said the House would move their authorization bill before the appropriations committee moves their bill, which is the ideal sequence, but in the Senate the likely sequence this year would be that the authorizing committee would not have submitted a bill by the time the appropriators were ready to move, but would let the appropriators know the numbers they want.

Michael Stephens, Professional Staff, House Appropriations Subcommittee on VA, HUD and Independent Agencies (Joel Widder's counterpart in the House) gave a more optimistic perspective on the House appropriations for FY 2003, noting that it is the job of appropriations staff to "build down" expectations. However, he agreed with Widder that if one examines the hard numbers in the President's budget, NSF is really getting a 3 percent increase, rather than the published 5 percent. The real question in Congress this year is how much better than the President's budget they can go, because there is bi-partisan and bi-cameral support for giving more. Running swiftly over what the House would probably have to do with the President's budget proposals regarding political "red flags" such as VA medical costs and legislation to change the way federal retirement costs are accounted for, Stephens said the House would turn down this legislation, which would free up $9B. He thought that, if there was agreement to use this $9B on the domestic side (Defense could give them a hard time on this) the money would be used for discretionary spending. Stephens felt there was momentum on the appropriations committee, especially from Representative Walsh and his staff, to work hard to give NSF a 7 percent increase. An emerging concern Stephens had noticed within his Members, is whether NSF's focus on priority areas comes at the expense of core scientific research. There is a sense that, for the second year, investigator-initiated projects are under-funded and Stephens foresees a move to redress the balance. Asked about the effects of an authorization bill calling for 15 percent for NSF, Stephens thought it would help the appropriators get 7 to 10 percent, but he did not see 15 percent happening, primarily because the budget surplus of the last few years has now disappeared. As to the timeframe for FY 2003 appropriations, Stephens expects his subcommittee to spend May figuring out the big picture, before marking up the VA-HUD bill around mid-June. The Senate will probably mark up in July. The bills will go to conference in September.

William Berry, Director, Basic Research, Department of Defense Research and Engineering, described how DoD decides how to invest S&T money. The Department has just undergone its quadrennial defense review, deciding on the capabilities it needs and the operational frameworks to achieve those capabilities. These frameworks will drive the basic research program, which Berry noted only amounts to about one percent of the DoD budget. Berry ran down some S&T trends, including the University Research Initiative, involved in infrastructure, education (via fellowships), and multi-disciplinary research. Strategic research areas in FY 2003 will include bio-engineering science, nanosciences, multifunction materials, information dominance, propulsion and energetic sciences, and human performance sciences. The science supported is, of course, mission-oriented.

Communicating with Congress
The Saturday sessions were devoted to "nuts and bolts" CSP work. Led by CSP chair Jane Hawkins, who guided CSP members through the techniques of making effective contacts with their Members of Congress, members discussed how to visit with Members and their science staff, and how to deliver their message. CSP members practiced making the argument for increased support for science using examples of the impact of their research, and that of their colleagues, in the Member's home district.

AMS Washington Office
Sam Rankin, Director of the AMS Washington Office, outlined some recent events he had organized to bring mathematicians into Congressional circles, and to work with other scientific societies to make the concerns of the scientific community much more visible on Capitol Hill. This spring has seen heavy activity in government relations work.

Joint Mathematics Meeting, January 2003, Baltimore
CSP chose a short-list of speakers for the Government Speaker slot, usually co-sponsored with MAA. Proposed topics for the CSP panel slot would be discussed further by email with the full committee. As a result, CSP later agreed on the topic of Homeland Security and Mathematics.

Next meeting
CSP will meet in Washington DC on April 11-12, 2003, in conjunction with the AMS Council meeting.

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May 8, 2002

Federal Funding for the Mathematical Sciences (millions of dollars) #
in the President's budget request for FY 2003.

	FY 01 Actual	FY 02 Estimate	FY 03 Request	Change 02-03 Amount	Change 02-03 Percent
National Science Foundation					
DMS	121.4	151.5	181.9	30.4	20.1%
Department of Defense *					
AFOSR	32.7	32.6	32.5	-0.l	-0.3%
ARO	26.4	26.4	26.4	0.0	0.0%
DARPA	16.3	25.0	33.3	8.3	33.2%
NSA	1.7	2.3	2.5	0.3	11%
ONR	12.5	13.2	13.4	0.2	1.5%
Total DOD	88.6	99.5	108.1	8.7	8.7%
Department of Energy					
Applied Mathematics	27.1	32.0	36.2	4.2	13.2%
Total All Agencies	238.2	282.9	326.2	43.3	15.3%

* Budgets are estimates for FY 2002 and FY 2003; DARPA amount assumes approval of Geosciences Initiative.
# Budget information from agency documents and conversations with program managers.

S. Rankin, "Mathematical Sciences in the FY 2003 Budget", AAAS Report XXVII, Research and Development FY 2003.