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Political and Policy Context for the FY 2009 Budget

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R&D IN THE PAST YEAR'S BUDGET PROCESS

Scientists no doubt felt the sting when significant funding increases for agencies related to the American Competitiveness Initiative (ACI) failed to make it into fiscal year (FY) 2008 appropriations at the 11th hour. The ACI, unveiled by President Bush in his 2006 State of the Union address, augured a boon for basic research, as did a slew of innovation bills introduced in Congress. With a new Democratic-led Congress to kick off the process beginning January 2007, observers looked to a fresh start in FY 2008.

Signs were promising in August 2007 when the President signed the America COMPETES Act, the culmination of two years of advocacy work by the scientific, industrial and academic communities sparked by the release of the National Academies' report, *Rising Above the Gathering Storm*. The law authorized spending for a host of research and education programs at the National Science Foundation (NSF), Department of Energy (DOE), National Institute of Standards and Technology (NIST), National Oceanic and Atmospheric Administration (NOAA), National Aeronautics and Space Administration (NASA) and Department of Education.

The party changeover did not speed up the appropriations process, however. Matters were complicated by the President's insistence on vetoing bills that exceeded his budget request. He held to the threat, axing a Labor-Health and Human Services (HHS)-Education bill that would have boosted funding for the National Institutes of Health (NIH).

Throughout much of the year, the situation looked rosy for the "ACI agencies"—NSF, DOE's Office of Science, and NIST—which were

looking at significant increases over their FY 2007 budgets. But with little time left before Christmas, Congress was forced to cut its numbers. After feverish negotiations, a final omnibus appropriations bill emerged in mid-December, and the hoped-for ACI increases were not in it. After the ink dried on the President's signature on December 26, NSF, DOE's Office of Science, and the NIST labs were left with much smaller allotments.

Commerce and Homeland Security R&D got solid raises; NASA also got a bump, though the space agency's research component dipped in favor of human space flight programs. NIH funding remained virtually flat. The Department of Defense (DOD), the one agency that saw its own bill signed outside of the omnibus, witnessed a boost for its basic research.

After the FY 2007 moratorium on most domestic earmarks, Congress resumed its earmarking routines for FY 2008. Almost a tenth of the energy R&D budget was devoted to earmarks; earmarks also gave the U.S. Department of Agriculture (USDA) budget a significant buttressing. The overall FY 2008 nondefense R&D earmarks added up to $939 million, down from $1.5 billion in FY 2006.

CONTINUING AND EMERGING R&D POLICY ISSUES

The end result of the FY 2008 appropriations process was a disappointment to those optimistic about major boosts for the ACI agencies. For two years the President's budget has featured the ACI and many members of Congress have voiced support, but the positive intentions have not translated into funding. Scientists have felt the pinch. Programs such as the International Thermonuclear Experimental Reactor (ITER), an international fusion reactor project, lost U.S. funding entirely, and a number of DOE labs were forced to lay off some of their researchers. Nevertheless, innovation, competitiveness, and energy R&D should continue to draw Congress's attention this year. The House and Senate are expected to again seek to increase funding for the physical sciences, especially after the President mentioned this area of research as a top priority in his 2008 State of the Union address.

Congress expects to continue to discuss patent reform, considered a vital issue for competitiveness and innovation, and the No Child Left Behind Act awaits reauthorization. Recently-passed energy legislation authorizes a number of R&D programs in the energy sector.

While these issues should continue to surface, President Bush's last year in the Oval Office and the looming presidential election are likely to put a damper on any significant legislative moves. Though House Speaker Nancy Pelosi (D-CA) is hoping to pass climate change legislation this year, such legislation is unlikely to go forward until after the country elects a new president. The chances of passing legislation addressing controversial issues, including stem cell research, this year are dubious.

Energy security and independence will likely continue to be a large issue for Congress in the coming year, though further action on these issues is unlikely. Both the President's 2008 State of the Union address and the passage of the 2007 energy bill suggest that research into technologies and fuels to reduce America's dependence on foreign oil will remain a high priority for government research. With the passage and enactment of the 2007 energy bill, cellulosic biofuels R&D looks to replace research in corn-derived ethanol, which has proven not to be the silver bullet that many had hoped it would be. Congress is also likely to consider additional carbon capture and storage R&D, as these technologies promise to reduce the greenhouse gas effects of coal-based energy.

Climate change is guaranteed to be a visible issue. Both cap-and-trade and carbon tax bills continued to be introduced in 2007 and into 2008; however, the issue is still very politically divisive and Congress is not likely to push through such a bill in an election year. In general, the issue has gained ground as states have pursued their own regulations, and it is likely to continue to do so. The White House has recently stated that it will seriously consider binding international emission reductions on the condition that large developing nations such as China also agree to reductions.

There is also a positive trend for nanotechnology R&D yet again. Research in the burgeoning industry is steadily gaining ground. The innovative new science is receiving even more attention from Congress and the Environmental Protection Agency (EPA), which has recently established a program to investigate the current nanotechnology landscape for future regulation development.

With the NIH budget moving in a straight line and not set to keep up with inflation, the number of new research grants, the real size of average research grants, and the success rate of grant competitions are all expected to drop this year. The agency has seen a major dip in the

success rate of new grant applications, from 32 percent at the start of the decade to a projected low of 18 percent in 2009.

NIH has also sought to revamp its peer review process, which is under strain in the static budget environment. A task force conducted a series of meetings and released recommendations in February 2008. The agency is now exploring the implementation of aspects of the plan. In an effort to recruit and retain young investigators, a top concern for Director Elias Zerhouni, NIH has instituted some targeted grant programs. As a result, the success rate for first-time grant applicants swung upward in FY 2007 after a significant drop over the preceding five years.

In 2007, the President for a second time vetoed the Stem Cell Research Enhancement Act, which would have enhanced federal support for human embryonic stem cell research that follows certain ethical guidelines. He also issued an Executive Order encouraging federal research on stem cells derived by alternative methods.

The issue of government interference and politicization of science has resurfaced for the third consecutive year. Oversight committees in both chambers have taken up investigations of agencies including the EPA, Interior Department, and Food and Drug Administration (FDA). Steps taken by the EPA to close many of the libraries in its nationwide network of libraries that store toxic substances and pollution information sparked serious debate and criticism in 2007. Congress has since intervened with additional monies to keep the libraries from closing their doors.

Investigative committees in Congress have also begun to examine concerns over political appointees in the EPA and the Interior Department allegedly disregarding technical and scientific staff advice. The EPA's rejection of California's request for a waiver that would allow it to regulate its greenhouse gas emissions sparked harsh criticism from many in Congress and from a number of states. Investigations have been launched into the decision, as many are concerned that the politically-appointed EPA administrator may have ignored concerns and recommendations of technical staff within his own agency. The Interior Department's decision to allow oil drilling in prime polar bear habitat before allowing its Fish and Wildlife Service to decide whether it will place the species on the list protected by the Endangered Species Act has earned it similar investigations by Congress.

The FDA has also been dogged by investigations into its food and drug safety practices and by assertions that its budget is inadequate to cover its responsibilities. In September 2007 the President signed a bill to reauthorize key FDA programs; among other things, the bill mandated that drug companies post results of clinical trials in a public database. It is likely that congressional focus on food and drug safety and on the FDA's resources will continue in the coming year.

FORECAST FOR THE FY 2009 BUDGET AND BEYOND

Members of Congress are factoring the President's lame-duck status into their plans for FY 2009. House Appropriations Chairman Dave Obey (D-WI) has stated that if the White House does not show willingness to negotiate on the Labor-HHS-Education bill, he will seek to defer the bill until a new president takes office.

At press time, Sen. Hillary Clinton (D-NY) and Sen. Barack Obama (D-IL) are still in the running for the Democratic nomination, while Sen. John McCain (R-AZ) has clinched the nod on the Republican side. This means that the 44th President will come from the U.S. Senate, which may be beneficial in terms of executive and legislative branch relations. Inevitably, the next administration will usher in different policies and priorities when it comes to R&D and S&T policy. Both Democratic contenders have gone on the record with an interest in maintaining strong support for basic research agencies. It is likely that all three candidates would seek to expand federal funding for stem cell research.

Future climate change research proposals originating in Congress and in the forthcoming presidential election are likely to explore the use of coal in a low-carbon way and include carbon cycle and carbon capture and storage research. Research opportunities in nuclear power may also arise as nuclear is quickly becoming a serious alternative to carbon-intensive fuels. The 2007 energy bill will keep funding prospects for biofuels, especially cellulosic biofuels, wide in the near future.

Whoever becomes the next Commander in Chief, R&D in climate change and energy would undoubtedly undergo increased funding. All three serious presidential candidates have suggested that they will push for global warming reduction legislation and encourage energy efficiency and clean energy.

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