

## Billions for Biodefense: Federal Agency Biodefense Budgeting, FY2005–FY2006

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**Since 2001, the United States government has spent substantial resources on preparing the nation against a bioterrorist attack. An earlier article analyzed the civilian biodefense funding by the federal government from fiscal years 2001 through 2005. This article updates those figures with budgeted amounts for fiscal year 2006, specifically analyzing the budgets and allocations for biodefense at the Department of Health and Human Services, the Department of Homeland Security, the Department of Agriculture, the Environmental Protection Agency, the National Science Foundation, and the Department of State.**

**T**HE PRESIDENT'S FY2006 BUDGET requests a total of \$5.1 billion for civilian biodefense. This represents a decrease of \$2.5 billion from the FY2005 budget, with this drop due primarily to the absence of BioShield money in FY2006. BioShield money appropriated in FY2005 was an advance appropriation that can be spent between now and FY2008. Aside from this major change in the budget, on an agency-by-agency basis, the President's FY2006 budget contains incremental increases for all agencies involved in biodefense; the requests for the greatest increases are for the Environmental Protection Agency (EPA) and the Department of Agriculture (USDA) for new activities and responsibilities related to food and water safety. The Department of Health and Human Services (DHHS) and the Department of Homeland Security (DHS) remain the chief funders of biodefense efforts, with over 87.5% of biodefense money flowing to these two agencies (see Table 1).

### METHODS AND SOURCES

Tracking expenditures in civilian biodefense poses a number of challenges; some of these challenges are in-

herent in tracking government expenditures in general, while other issues are specific to civilian biodefense. It was first necessary to determine what was actually spent as opposed to what was budgeted or appropriated. Typically, in a budget cycle, actual numbers are available for the prior year, with spending estimates available for the current year, and the President's budget request is available for the upcoming year. In this article, unless otherwise noted, FY2001–FY2004 amounts are based on actual numbers, FY2005 amounts are estimated, and FY2006 numbers represent the President's budget request.

Finding accurate and up-to-date sources of information is another challenge. Although each department publishes a "Budget in Brief" document, these reports often do not separate out civilian biodefense efforts, or they may include only partial information on them. Analysis of the entire agency budget is not always an effective method either, as civilian biodefense expenditures may be contained within broader line items. For this analysis, data were obtained by contacting the public affairs and budget offices of every agency listed in the report. This methodology was based on the principle that the numbers from the respective budget offices would be the most ac-

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TABLE 1. U.S. GOVERNMENT CIVILIAN BIODEFENSE FUNDING, FY2001–FY2006  
(IN \$MILLIONS, ROUNDED TO TENTHS OF A MILLION)

	<i>FY2001</i> ( <i>actual</i> )	<i>FY2002</i> ( <i>actual</i> )	<i>FY2003</i> ( <i>actual</i> )	<i>FY2004</i> ( <i>actual</i> )	<i>FY2005</i> ( <i>estimated</i> )	<i>FY2006</i> ( <i>budget</i> )	<i>Total</i>
Department of Health and Human Services	271.0	2,940.0	3,986.0	3,700.0	4,077.0	4,136.0	19,110.0
Department of Homeland Security <sup>a,b</sup>	—	—	412.0	1,618.0	2,900.7	362.3	5,293.0
Department of Agriculture <sup>c</sup>	—	—	200.0	92.0	281.0	354.0	927.0
Environmental Protection Agency <sup>d</sup>	20.0	187.2	132.9	118.7	97.4	184.5	740.8
National Science Foundation	0.0	9.0	31.3	31.0	31.0	31.3	133.5
Department of State	3.8	70.9	67.2	67.1	67.2	71.8	348.0
Department of Defense <sup>e</sup>	123.0	509.0	107.0	207.0	195.0	—	1,141.0
Total USG Civilian Biodefense Funding	417.8	3,716.1	4,936.4	5,833.8	7,649.3	5,139.9	27,693.2
Spent through FY2004	14,904.0						
Estimated spending through FY2005	22,553.3						
Spent through FY2005 + FY2006 Budget	27,693.2						

<sup>a</sup>The Department of Homeland Security was created in FY2003.

<sup>b</sup>The Department of Homeland Security and the Office of Management and Budget did not provide complete data. Accordingly, some items are missing. See Table 3.

<sup>c</sup>Some numbers not available due to budget methods used by USDA.

<sup>d</sup>EPA FY2001–FY2004 based on actual numbers; FY2005–FY2006 are based on the President’s budget for those years.

<sup>e</sup>Exact numbers not available due to inability of press office to provide information and lack of published information.

*Sources:* USDA Budget; USDA Press Office; USDA Budget Office; Office of Plans and Systems, Office of the Secretary, Department of Defense; Defense Cost Estimates Unit, Congressional Budget Office; AAAS Reports 22–24 on Research and Development; EPA Budgets in Brief and Congressional Justifications, FY2002–FY2005; HHS Budget Office; HHS Press Office; DHS Budget; S&T Directorate Press Office; EPR Press Office; IAIP Press Office; NSF Budget Division, Engineering Directorate, Office of Budget, Finance and Award Management

curate and current; these were the same numbers then assigned to the program offices responsible for executing programs within the agency.

It should be noted that budget line items are not necessarily indicative of size or location of programs. Many programs may be consolidated under one line item (such as DHS’s Science & Technology spending), or a program may have many components (such as BioShield, which receives inputs from DHS, DHHS, and the White House). In other cases, work may be done by one department and reimbursed by another: For example, work done by the Agency for Healthcare Research and Quality (AHRQ) has been reimbursed by the Health Resources and Services Administration (HRSA) and the Office of State and Local Preparedness, Office of the Assistant Secretary for Public Health Emergency Preparedness of DHHS.

Another significant challenge was to distinguish, for the purposes of this article, which items should be considered civilian biodefense and which should not. Here, civilian biodefense spending is defined as programs, research, or administrative costs that prevent or mitigate bioterrorism’s effects on civilians. Federal budgets for programs intended for general WMD prevention and mitigation, such as “chemical, biological, radiological, and nuclear countermeasures” (e.g., some EPA detection items and BioShield), do not distinguish how much of the program is specifically targeted at civilian biodefense, so they were included in their entirety. Multiple application programs (e.g., DHHS’s Medical Reserve Corps or DHS’s National Disaster Medical System) that provide a substantial benefit in responding to an incident of civilian bioterrorism were included in their entirety. Physical security upgrades and other infrastructure protection to in-

TABLE 2. DEPARTMENT OF HEALTH AND HUMAN SERVICES CIVILIAN BIODEFENSE FUNDING, FY2001–FY2006 (IN \$MILLIONS)

	<i>FY2001</i>	<i>FY2002</i>	<i>FY2003</i>	<i>FY2004 (actual)</i>	<i>FY2005 (estimated)</i>	<i>FY2006 (budget)</i>
<b>CDC</b>						
CDC: Upgrading State and Local Capacity	67	940	939	918	927	797
BioSurveillance Initiative	0	0	0	22	79	79
Supplemental Appropriations (Smallpox)	0	0	100	0	0	0
Upgrading CDC Capacity	22	141	157	0	0	0
Anthrax Vaccine Research	18	18	18	0	0	0
Upgrading CDC Capacity/ Anthrax Vaccine Research <sup>a</sup>	0	0	0	169	157	140
Independent Studies	11	2	2	0	0	0
Other	10	46	20	0	0	0
Strategic National Stockpile <sup>b</sup>	81	1,157	398	0	397	550
Federal Mass Casualty Initiative (additional to the SNS)	0	0	0	0	0	50
Subtotal, CDC	209	2,304	1,634	1,109	1,560	1,616
<b>HRSA</b>						
Hospital Preparedness and Infrastructure	0	135	515	515	491	458
Emergency Response Demonstration (additional to Hospital Preparedness and Infrastructure)	0	0	0	0	0	25
Education Incentives for Medical Curriculum	0	0	28	28	28	28
Smallpox Compensation	0	0	42	0	0	0
Subtotal, HRSA	0	135	585	543	519	511
<b>Office of the Secretary</b>						
Office of Public Health and Emergency Preparedness	0	50	47	41	41	41
Medical Reserve Corps	0	3	10	10	10	22
Healthcare Provider Credentialing	0	0	0	0	0	8
Subtotal, Office of the Secretary	0	53	57	51	51	71
Subtotal, PHSSEF Biosecurity	209	2,492	2,276	1,703	2,130	2,198
<b>FDA</b>						
Food Safety	1	98	97	116	150	180
Vaccines/Drugs/Diagnostics	6	46	53	53	57	57
Physical Security	2	13	7	7	7	7
Subtotal, FDA	9	157	157	176	214	244
<b>NIH</b>						
Biodefense Research (NIAID)	53	199	687	1,629	1,539	1,664
rPA Anthrax Vaccine Intermediate Scaleup	0	0	123	117	0	0
MVA Smallpox Vaccine Intermediate Scaleup	0	0	0	75	45	0
BT Research Facilities	0	92	743	0	149	30
Subtotal, NIH	53	291	1,553	1,821	1,733	1,694
Total DHHS Civilian Biodefense Funding	271	2,940	3,986	3,700	4,077	4,136

<sup>a</sup>These line items were counted separately until the President's FY2006 budget.

<sup>b</sup>The SNS was located in the HHS office of the secretary for FY2001, 2002, 2003, and 2005. In FY2004, it was located in the Department of Homeland Security. It is now a CDC function.

Sources: DHHS Budget Office; DHHS Press Office.

TABLE 3. DEPARTMENT OF HOMELAND SECURITY CIVILIAN BIODEFENSE FUNDING, FY2003–FY2006 (IN \$MILLIONS)

	<i>FY2003</i>	<i>FY2004 (actual)</i>	<i>FY2005 (estimated)</i>	<i>FY2006 (budget)</i>
Emergency Preparedness and Response Directorate				
National Disaster Medical System <sup>a</sup>	0	0	20	— <sup>b</sup>
Strategic National Stockpile	0	398	0	— <sup>b</sup>
MMRS	50	50	0	— <sup>b</sup>
BioShield	0	885	2507	0 <sup>c</sup>
Science & Technology Directorate				
Biological Countermeasures (includes HSARPA, BioSurveillance/BioWatch, other research efforts)	362	285	362.7	362.3
Information Analysis and Infrastructure				
Protection Directorate				
BioSurveillance	0	0	11	— <sup>b</sup>
Total DHS Civilian Biodefense Funding	412	1,618	2,901	362.3

<sup>a</sup>The Department of Homeland Security was unable to provide this number due to multipurpose functions that are supported in this program. The \$20 million listed for FY2005 is specifically for a biodefense-related study.

<sup>b</sup>Neither the Department of Homeland Security nor the Office of Management and Budget was able to provide these numbers.

<sup>c</sup>Funds appropriated for BioShield in years prior will be used in the current year.

Sources: DHS Budget; DHS Congressional Justification (page S&T-57); EPR Press Office; IAIP Press Office.

stitutions and buildings with primarily civilian biodefense missions also were included, but it should be noted that these upgrades cover both laboratory and general security (such as office buildings).

Programs that are not specifically directed at bioterror agents (e.g., the National Institutes of Health’s nuclear/radiological medical countermeasures and pandemic flu preparation dollars) were not included. Also not included were programs that include a small, undefined biological component (such as many of the DHS Preparedness Directorate’s “All Hazards” grants and training), as well as routine surveillance that does not focus specifically on

civilian biodefense but may play a role in such detection (such as the USDA’s food inspection service, which focuses on chemical contamination and natural microbial contamination).

The Department of Defense (DoD) has a large base of research in chemical and biological countermeasures for warfighter protection. However, because of the focus on the warfighter and not the civilian, these numbers were excluded from this article. For example, certain military medical countermeasure acquisitions, such as the AVA anthrax vaccine, are intended for use by military personnel but not civilians, so these DoD programs are not de-

TABLE 4. DEPARTMENT OF DEFENSE CIVILIAN BIODEFENSE FUNDING, FY2001–FY2006 (IN \$MILLIONS)

	<i>FY2001</i>	<i>FY2002</i>	<i>FY2003</i>	<i>FY2004 (estimated)</i>	<i>FY2005 (budget)</i>	<i>FY2006 (budget)</i>
Biological Countermeasures	0	400	0	0	0	— <sup>a</sup>
Civil Support Teams	123	109	107	207	195	— <sup>a</sup>
Cooperative Threat Reduction <sup>b</sup>	—	—	—	—	—	—
Total DoD Civilian Biodefense Funding	123	509	107	207	195	— <sup>a</sup>
Chemical and Biological Defense <sup>c</sup>	405	595	638	706	560	— <sup>a</sup>

<sup>a</sup>The Department of Defense did not provide numbers for the FY2006 budget.

<sup>b</sup>The Defense Threat Reduction Agency was unable to provide numbers for this program.

<sup>c</sup>This number was not included in the calculations because it includes many items that are not applicable to civilian biodefense, such as detectors, protective gear, vehicles, etc. It is listed for informational purposes for those interested.

Sources: Office of Plans and Systems, Office of the Secretary, Department of Defense; Defense Cost Estimates Unit, Congressional Budget Office; AAAS Reports 22–24 on Research and Development.

financed as civilian biodefense in this article. Some DoD research has direct civilian benefit, but because the majority of these funds are primarily military in application, these lines were excluded from calculation of total DoD expenditures.

Finally, it is important to note two changes in this year's update to the earlier article, "Billions for Biodefense."<sup>1</sup> The first is the absence of DoD data for FY2006. The Department of Defense's Office of the Secretary of Defense was unable to furnish numbers for the requisite programs for FY2006. As a result, DoD numbers for FY2006 were not included in this article. The second change was the documenting of additional State Department biodefense efforts that were not included in last year's article. We have revised the totals from last year's

article, and State Department efforts from FY2001–FY2006 (including the President's budget request) total \$349 million.

### CIVILIAN BIODEFENSE SPENDING BY FEDERAL AGENCY

#### *Department of Health and Human Services*

For FY2006, DHHS is requesting an increase of \$59 million, or about 1.45%, for a total of \$4.136 billion (Table 2). Most of the DHHS line items are relatively unchanged in value from their FY2005 amounts, with three exceptions.

TABLE 5. DEPARTMENT OF AGRICULTURE CIVILIAN BIODEFENSE FUNDING, FY2001–FY2006 (IN \$MILLIONS)

	FY2001 <sup>a</sup>	FY2002 <sup>a</sup>	FY2003	FY2004 (actual)	FY2005 (estimated)	FY2006 (budget)
Food Defense						
FSIS						
Surveillance/Monitoring	—	—	1	1	3	3
Food Emergency Response Network (FERN)	—	—	0	0	3	19
Enhanced Inspections	—	—	0	2	2	2
Lab Upgrades/Physical Security	—	—	1	3	3	6
Education/Training	—	—	2	2	3	4
Other	—	—	4	4	4	4
ARS Food Defense Research	—	—	2	2	8	23
Subtotal, Food Defense	—	—	10	14	26	61
Agricultural Defense						
ARS						
Ames, IA, BSL-3 Facility	—	—	143	0	121	59
Research	—	—	10	17	21	37
National Plant Disease Recovery System	—	—	0	0	2	6
Foreign Disease Weed Science Laboratory, Frederick, MD	—	—	0	0	0	3
CSREES						
Regional Diagnostic Network	—	—	0	8	9	30
Higher Education Agrosecurity Program	—	—	0	0	0	5
APHIS Pest Detection/Animal Health						
Monitoring						
Enhanced Surveillance	—	—	0	38	80	123
BioSurveillance	—	—	0	0	2	3
Select Agents—Plants	—	—	0	0	3	5
National Veterinary Vaccine Bank	—	—	0	1	3	8
Others	—	—	37	14	14	14
Subtotal, Agricultural Defense	—	—	190	78	255	293
Total USDA Civilian Biodefense Funding	—	—	200	92	281	354

<sup>a</sup>USDA press and budget offices were unable to provide numbers for these years.

Sources: USDA Budget, USDA Press Office; USDA Budget Office.

TABLE 6. ENVIRONMENTAL PROTECTION AGENCY CIVILIAN BIODEFENSE FUNDING, FY2001–FY2006 (IN \$MILLIONS)

	FY2001	FY2002	FY2003	FY2004 (actual)	FY2005 (budget)	FY2006 (budget)
Capitol Hill Anthrax Cleanup	20	—	—	—	—	—
Clean and Safe Water: Homeland Security <sup>a</sup>	0	3.76	—	—	—	—
Safe Food: Homeland Security <sup>b</sup>	0	0.01	—	—	—	—
Waste Management: Homeland Security <sup>b</sup>	0	3.2	—	—	—	—
Quality Environmental Information: Homeland Security <sup>b</sup>	0	0.6	—	—	—	—
Sound Science/Improved Understanding/ Innovation: Homeland Security <sup>b</sup>	0	0.58	—	—	—	—
Deterrent to Pollution: Homeland Security <sup>b</sup>	0	3.46	—	—	—	—
Effective Management: Homeland Security <sup>b</sup>	0	0	—	—	—	—
Emergency Supplemental Funds <sup>c</sup>	0	175.6	0	0	0	—
Water Safety Grants to States	0	0	4.5	5	5	5
Clean and Safe Water: Homeland Security, Critical Infrastructure Protection, Protect Human Health	0	0	14.19	27.39	—	—
Clean Land: Homeland Security Preparedness, Response and Security	0	0	37.56	27.34	—	—
Healthy Communities & Ecosystems: Homeland Security Prep/Resp/Sec, Chem/Org/Pesticide Risks	0	0	0.69	2.33	—	—
Healthy Communities & Ecosystems: Homeland Security Prep/Resp/Sec, Science and Research	0	0	30.96	29	—	—
Compliance and Environmental Stewardship: Homeland Security: Critical Infrastructure Protection, Improve Compliance	0	0	4.18	3.9	—	—
Enabling and Support Programs						
Homeland Security, Office of Waste and Emergency Response	0	0	0	0.6	—	—
Homeland Security, Office of Administration and Resources Management, Protection of EPA Personnel and Infrastructure	0	0	39.97	19.29	—	—
Homeland Security, Office of Environmental Information, Communication and Information	0	0	0	3.82	—	—
Homeland Security, Office of International Activities, Protection of EPA Personnel and Infrastructure	0	0	0	0	—	—
Homeland Security, Office of the Administrator, Communication and Information	0	0	0.87	0	—	—
Homeland Security, Communication and Information					4.32	6.98
Homeland Security, Critical Infrastructure Protection					11.2	55.56
Homeland Security, Preparedness, Response and Recovery					56.4	96.4
Homeland Security, Protection of EPA Personnel and Infrastructure					20.5	20.6
Total EPA Civilian Biodefense Funding	20	187.21	132.92	118.67	97.42	184.54

<sup>a</sup>Numbers for additional years are included in other line items, such as Clean Land.

<sup>b</sup>Due to EPA reorganization, these activities fall under new headings in FY2003 and subsequent years.

<sup>c</sup>This bill includes a number of relevant line items, but a precise breakdown which accounts for all \$175 million could not be found.

Sources: Compiled from EPA Budgets in Brief and Congressional Justifications, FY2002–FY2005. FY2001–FY2004 are actual expenditures, FY2005 and FY2006 based on President's budget requests. <http://www.epa.gov/budget/2006/2006b.ib.pdf>

TABLE 7. DEPARTMENT OF STATE CIVILIAN BIODEFENSE FUNDING, FY2001–FY2006 (IN \$MILLIONS)

	FY2001	FY2002	FY2003	FY2004 (actual)	FY2005 (estimated)	FY2006 (budget)
Worldwide Security Upgrades: Chem/Bio Program	3.8	3.9	15.2	17.1	17.1	19.2
BioRedirection	0	67	52	50		
Nonproliferation of WMD Expertise	—	—	—	—	50.1	52.6
Total State Department Civilian Biodefense Funding	3.8	70.9	67.2	67.1	67.2	71.8

Sources: State Department International Affairs Budget, <http://www.state.gov/m/rm/c6112.htm>

Note: The BioRedirection program was folded under the Nonproliferation of WMD Expertise item. <http://www.state.gov/m/rm/rls/iab/2006/html/41800.htm>

First, the largest proposed increase from last year's budget is in the Strategic National Stockpile—a request for an additional \$203 million, of which \$50 million will be used for a “Federal Mass Casualty Initiative” for the purchase of portable mass casualty treatment units. Second, the National Institute of Allergy and Infectious Disease (NIAID) is requesting an additional \$125 million for biodefense research, bringing the research total to \$1.664 billion.

An important proposed cut is the request for the Centers for Disease Control and Prevention's (CDC) funding to state and local public health departments. This line item stands to be reduced by \$130 million, or about 14%, to \$797 million under the President's budget. The other substantial reduction is the subtraction of \$119 million from NIAID's research facilities construction budget, to a total of \$30 million for FY2006. According to DHHS budget documents, this decrease is meant to offset the increase in research funding.<sup>2</sup>

### Department of Homeland Security

For FY2006, it is proposed that DHS receive a decrease of about \$2.5 billion, or about 87%, for a total budget of \$362.3 million (Table 3). This decrease is a result of the advanced appropriation of the BioShield bill for \$2.5 billion in FY2005. According to the De-

partment of Homeland Security “Budget in Brief,” the money appropriated in FY2005 is part of an advanced appropriation obligation through FY2008.<sup>3</sup> Except for this change, other line items remain relatively constant from the previous fiscal years. Additionally, a number of line items that were counted in the previous “Billions for Biodefense” article could not be tracked this year, because the Office of Management and Budget and the Department of Homeland Security did not provide these data for this report. Only the numbers for the Office of Science and Technology could be obtained.

### Department of Defense

The Department of Defense did not provide numbers for the President's FY2006 budget request for this report. Figures for prior years are shown in Table 4.

### Department of Agriculture

For FY2006, the President's budget proposes an increase in USDA funds of \$73 million, or about 26%, for a total of \$354 million (Table 5). This increase comes as the USDA continues to expand its Food and Agriculture Defense Initiative.

The most substantial increases come to operational activities dealing with food and agriculture monitoring and

TABLE 8. NATIONAL SCIENCE FOUNDATION CIVILIAN BIODEFENSE FUNDING, FY2001–FY2006 (IN \$MILLIONS)

	FY2001	FY2002	FY2003	FY2004 (actual)	FY2005 (estimated)	FY2006 (budget)
Ecology of Infectious Diseases, BIO Directorate	0	4.14	6.00	6.00	6.00	6.00
Ecology of Infectious Diseases, GEO Directorate	0	0	4.00	4.00	4.00	4.00
Microbial Genome Sequencing, Bio Directorate	0	4.83	15.00	15.00	15.00	15.00
Microbial Genome Sequencing, CISE Directorate	0	0	2.00	2.00	2.00	2.00
Sensors and Sensor Networks, Engineering Directorate	0	0	4.25	4.00	4.00	4.25
Total NSF Civilian Biodefense Funding	0	8.97	31.25	31.00	31.00	31.25

Source: NSF Spokesman, February 24, 2005.

response. For food defense, the Food Emergency Response Network was increased by \$16 million, or 533%, to a total of \$19 million, and the Agricultural Research Service's (ARS) Food Defense Research was increased by \$15 million, or 187.5%, to a total of \$23 million.

The Animal and Plant Health Inspection Service's enhanced surveillance was increased by \$43 million, or 53.75%, to a total of \$123 million. ARS's agricultural research was increased by \$16 million, or 76%, to a total of \$37 million.

The only decrease that was seen was in the construction funds for the Ames, Iowa, BSL-3 facility, a decrease of \$62 million, or 51%, to a total of \$59 million. This was due to the progress in construction of the facility.

### *Environmental Protection Agency*

The President's budget is requesting an increase of \$87.12 million for the EPA, or about 89%, to a total of \$184.54 million (Table 6). The agency will use this money in several areas: decontamination, protecting food and water supplies, and training personnel for emergencies. Specifically, the budget allocates \$44 million for the Water Sentinel program, a pilot program designed to monitor the intentional contamination of drinking water. Another \$25 million is budgeted to increase EPA's Homeland Security research and preparedness response programs. Finally, \$11.6 million is budgeted for Environmental Laboratory Preparedness and Response programs.

This increase is notable because the EPA was the only agency to receive a cut in biodefense funding in FY2005.

### *Department of State*

For FY2006, the President's budget is requesting an increase of \$4.6 million for the State Department, or about 7%, to a total of \$71.8 million (Table 7). These State Department programs were not included in last year's "Billions for Biodefense" summary, as the author was unable to identify these programs. Of the FY2006 request, \$17.1 million is for the State Department's Worldwide Security Upgrades Chemical and Bio program. The Worldwide Security Upgrades program is responsible for increases in diplomatic personnel and facilities in the face of terrorism.<sup>4</sup>

The remainder of the money funds the Nonproliferation of WMD Expertise line item, which contains three items. The first is the Science Centers program, which seeks to create facilities where Soviet scientists can perform civilian research. The second, the Bio-Chem redirect program, focuses on the redirection of former Soviet Union chemical and biological weapons scientists toward

sustainable research in public health, agriculture, and the environment. And the BioIndustry Initiative seeks to transform former Soviet weapons facilities into civilian biotechnologies facilities.<sup>5</sup>

### *National Science Foundation*

The National Science Foundation continues to fund its Ecology of Infectious Disease, Microbial Genome Sequencing and Sensors, and Sensor Networks programming at approximately the same level as FY2005, with a slight increase of \$.25 million, or .008%, for a total of \$31.25 million in FY2006 (Table 8).

## CONCLUSION

Civilian biodefense spending, not including the BioShield bill, has reached a consistent level of about \$5 billion from FY2003 to FY2006. DHHS and DHS, which together account for about 88% of the FY2006 request, have remained relatively constant in their funding. Other agencies, most notably the Department of Agriculture and the Environmental Protection Agency, have been more variable. These two agencies have seen increased budget requests in FY2006, focusing on programs that protect the nation's food and water supplies.

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