



CONGRESSIONAL BUDGET OFFICE  
COST ESTIMATE

October 1, 2002

**S. 2945**

**21st Century Nanotechnology Research and Development Act**

*As ordered reported by the Senate Committee on Commerce, Science, and Transportation  
on September 19, 2002*

**SUMMARY**

S. 2945 would authorize the appropriation of about \$1 billion over the 2003-2004 period for civilian research and development (R&D) on nanotechnology (these technologies involve manipulating matter at the atomic level). It would allocate this funding among seven agencies: the National Science Foundation, Department of Energy, National Aeronautics and Space Administration, National Institutes of Health, National Institute of Standards and Technology, Environmental Protection Agency, and the Department of Justice. Other provisions would establish programmatic and reporting guidelines for agency initiatives and create a scientific advisory board and office. Finally, S. 2945 would direct the Office of Science and Technology Policy to coordinate agency initiatives and sponsor biennial studies by the National Academy of Sciences (NAS) on how R&D efforts in the United States compare with those of other countries.

Assuming appropriation of the authorized amounts, CBO estimates that implementing this bill would cost \$989 million over the 2003-2007 period. CBO estimates that enacting S. 2945 would have no effect on direct spending or revenues.

S. 2945 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments. Public universities and agencies would benefit from grants to create interdisciplinary centers for research in nanotechnology. These entities may incur costs as a result of participating in the grant program, but such costs would be voluntary.

## ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary impact of S. 2945 is shown in the following table. The costs of this legislation fall within budget functions 250 (general science, space, and technology), 300 (natural resources and the environment), 376 (commerce and housing credit), 550 (health), and 750 (administration of justice).

	By Fiscal Year, in Millions of Dollars					
	2002	2003	2004	2005	2006	2007
<b>SPENDING SUBJECT TO APPROPRIATION</b>						
Nanotechnology Spending Under Current Law						
Budget Authority <sup>a</sup>	424	0	0	0	0	0
Estimated Outlays	344	231	54	15	7	2
Proposed Changes						
Estimated Authorization Level	0	476	547	0	1	0
Estimated Outlays	0	186	425	292	67	19
Nanotechnology Spending Under S. 2945						
Estimated Authorization Level <sup>a</sup>	424	476	548	0	1	0
Estimated Outlays	344	417	479	307	74	21

a. The 2002 level reflects agencies' estimates of the amount appropriated for that year for R&D on nanotechnology, a full-year appropriation for 2003 for these agencies has not yet been enacted.

## BASIS OF ESTIMATE

For this estimate, CBO assumes that the amounts authorized will be appropriated near the start of each fiscal year and that outlays will occur at rates similar to those for other R&D programs at each agency. The amounts shown in the table reflect the amounts specified in S. 2945 for agency R&D and the cost of the NAS studies comparing the U.S. program to those of other countries. Based on information from the NAS, CBO estimates that each biennial study on international trends would cost about \$1 million.

## **INTERGOVERNMENTAL AND PRIVATE-SECTOR IMPACT**

S. 2945 contains no intergovernmental or private-sector mandates as defined in UMRA and would impose no costs on state, local, or tribal governments. Public universities and agencies would benefit from grants to create interdisciplinary centers for research in nanotechnology. These entities may incur costs as a result of participating in the grant program, but such costs would be voluntary.

### **ESTIMATE PREPARED BY:**

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