



LONG-TERM FEDERAL FUNDING FOR SCIENCE & TECHNOLOGY R&D

SPIE—The International Society for Optics and Photonics supports recently enacted increases in research and development (R&D) funding passed by Congress and requested by the Administration. While these investments are encouraging, SPIE urges Congress to provide for long-term federal funding for science and engineering R&D. Specifically, **SPIE urges Congress to maintain a “doubling” trajectory for science agencies for the next ten years.** This requires sustained support for annual increases in R&D funding of 5%- 6% per year. Specifically we recommend:

- increase in the FY 2010 **NSF** budget \$500 million to a total of \$7 billion
- increase funding for the **DOE Office of Science** in FY 2010 by 8% over FY 2009
- \$70 million for the **NIST Technology Innovation Program (TIP)**
- \$125 million investment in the **NIST Manufacturing Extension Partnership (MEP)**
- Consistent funding of the **Small Business Innovation Research (SBIR) and STTR** programs.

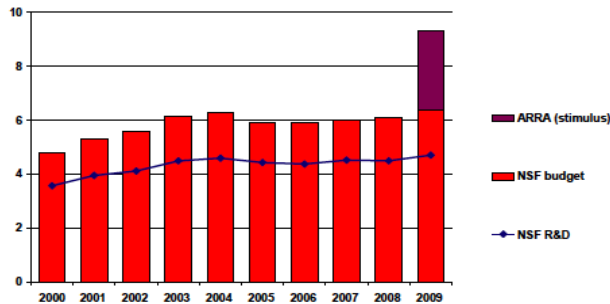
After years of languishing, the U.S. scientific infrastructure must now regain its past role in fostering U.S. economic competitiveness, innovation, job creation, national security and our standard of living. We thank Congress for adding significantly to most science agency R&D accounts in the FY 2009 Omnibus Budget bill in March 2009, as well as the “game changing” amounts contained in the President’s *American Recovery & Reinvestment Act of 2009* (ARRA) enacted in February.

SPIE supports Congressional initiatives that seek to address concerns about America’s future ability to compete, maintain its standard of living, and protect its national security based upon a continuum of science funding and education policy like the *America COMPETES Act of 2007*. We continue to support robust funding for the National Science Foundation, the Department of Energy’s Office of Science, and the National Institute of Standards and Technology.

SPIE has an abiding concern in adequate funding for engineering research, much of which is found in the Department of Defense (DOD) and NASA research portfolios.

During FY 2009, the federal R&D portfolio will be \$151 billion, an increase of about 4.7% above FY 2008. For FY 2010 and beyond, SPIE urges Congress to maintain a “doubling” path for science agencies and to sustain long-term commitments to basic scientific research over a multi-year period. For FY 2009, the federal investment in basic scientific research will be about 4.3% above FY2008, or \$2.5 billion. This level is inadequate for a globally competitive economy, and experts suggest more robust levels in the 5%-6% range.

National Science Foundation Budget, FY 2000-2009 (as of 2/09) *
(budget authority in billions of constant FY 2008 dollars)



Source: National Science Foundation, AAAS, and latest AAAS estimates of FY 2009 appropriations. Includes supplemental (stimulus appropriations) in Public Law 111-5. FY 2009 NSF R&D line excludes stimulus R&D. FEB. '09 © 2009 AAAS



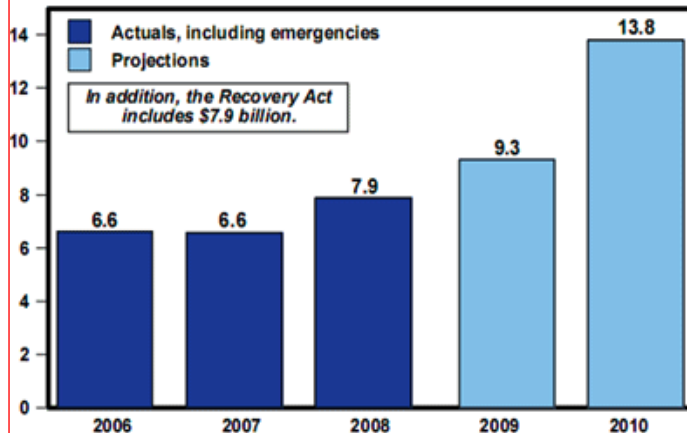
National Science Foundation: SPIE supports an increase in the NSF budget for FY 2010 of \$500 million — to \$7 billion; this will enable NSF-supported science, mathematics and engineering research projects to be funded at globally competitiveness levels.

Department of Commerce— NIST

Component: SPIE supports the Administration’s 2010 overall Department of Commerce budget request of \$13.8 billion for 2010. Of this amount, SPIE supports the **National Institute of Standards & Technology (NIST)** request for \$638 million which will build on the *American Recovery & Reinvestment Act of 2009* with \$70 million for the **Technology Innovation Program (TIP)**. TIP invests in high-impact research that addresses critical national needs and advance innovation. SPIE recommends increasing TIP funding to \$200 million for FY 2011 as well as sustained increases for this program of 5-6% per year thereafter. SPIE further recommends that the **Hollings Manufacturing Extension Partnership (MEP)** receive \$125 million in FY 2010 to enhance the competitiveness of the nation’s manufacturers.

Department of Commerce

Discretionary budget authority in billions of dollars



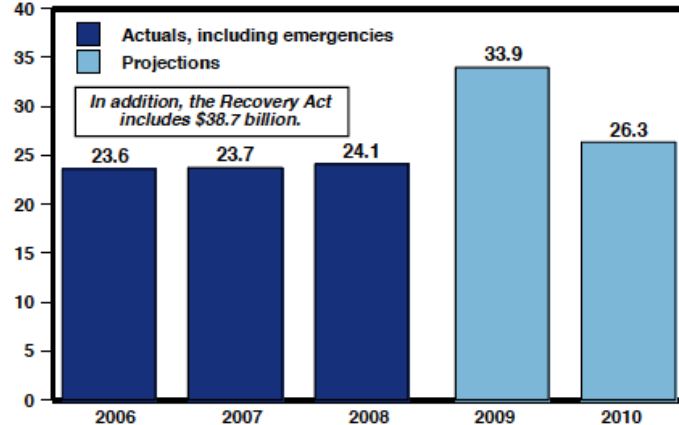
Note: The increase in 2010 includes approximately \$4 billion of additional funding, above the 2009 level, provided to conduct the 2010 Decennial Census.

Department of Energy — DOE Office of Science:

SPIE supports the President’s plan to double Federal investment in the basic sciences over a ten-year period. We urge you to increase funding for the DOE Office of Science in FY 2010 by 8% over FY 2009 to \$26.3 billion in addition to the \$1.6 billion provided in the *ARRA* for the Department of Energy’s basic science programs.

Department of Energy

Discretionary budget authority in billions of dollars



Note: Included in 2009 is emergency funding for Advanced Technology Vehicles Manufacturing Loan Program, \$7.5 billion, and \$250 million for Weatherization.

Sustainable Funding Increases: The much-needed increases in science budgets need to be sustained to accomplish the 10-year doubling called for by the Administration. The DOE chart to the left illustrates the temporary, and potentially damaging effects, that short-term “bump ups” may have on overall science agency funding, construction, talent recruitment and other aspects of the

science and innovation “ecosystem” that supports America’s economy and standard of living.

SPIE is the largest international not-for-profit society in optics, photonics and imaging. Together with our 17,000 individual members and 450 corporate members, the Society seeks to build a better world with light through scientific education and innovation. www.spie.org