

Highlights

President Bush's proposed budget for fiscal year (FY) 2009 continues to propose large increases for the three physical sciences agencies in the American Competitiveness Initiative (ACI), increases for weapons and human spacecraft development, and flat funding for biomedical research in the National Institutes of Health (NIH). Despite tough budget conditions, the overall federal investment in research and development (R&D) would increase, driven primarily by increases in development funding. But the federal investment in basic and applied research would fall for the fifth year in a row in real dollars.

- The proposed federal R&D portfolio in FY 2009 is \$147.4 billion, 3.4 percent or \$4.9 billion above this year (see Chapter 1 and Table II-1). Once again, development funding would see strong gains: increases for space vehicles development in the National Aeronautics and Space Administration (NASA; total R&D up 4.9 percent) and weapons development in the Department of Defense (DOD; up 6.9 percent to \$69.0 billion) would exceed the overall increase.

- The three American Competitiveness Initiative agencies would be the clear winners among domestic programs. There would be significant increases for R&D in the Department of Energy's (DOE) Office of Science (up 20.7 percent to \$4.3 billion; see Table II-11 and Chapter 8), the National Science Foundation (NSF; up 15.5 percent to \$5.2 billion; see Table II-7 and Chapter 6), and the National Institute of Standards and Technology's intramural research (up 16.1 percent to \$447 million; see Table II-14 and Chapter 12).

- But the National Institutes of Health (NIH) would receive exactly the same amount (\$29.5 billion) in 2009 as in 2008; nearly all of NIH's institutes and centers would also get the same budgets as this year (see Chapter 7 and Table II-9). The U.S. Department of Agriculture (USDA) would see its R&D funding fall 15.9 percent to \$2.0 billion (see Table II-13 and Chapter 10), while environmental R&D in the Environmental Protection Agency (EPA) and the U.S. Geological Survey (USGS) would fall 1.3 percent and 6.9 percent, respectively (see Tables II-17 and II-16, and Chapter 12).

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- Defense R&D continues to climb to record levels in wartime, and will be boosted further in both 2008 and 2009 when billions in war-related supplementals are enacted later this year. Department of Defense (DOD) R&D would reach \$80.7 billion in 2009, up 3.7 percent (see Table II-2 and Chapter 5), including a 4 percent requested increase for basic research (“6.1”).
- Total federal support of research (basic and applied) would fall 0.3 percent to \$57.3 billion (see Table II-1). **In real terms, the federal research portfolio would fall for the fifth year in a row**, down 9.1 percent from 2004 (see Chapter 2).
- The 110th Congress cleared the America COMPETES Act in August 2007 authorizing spending on numerous basic research, science and math education, and science and engineering workforce initiatives, but the 2008 congressional session is unlikely to see much progress on climate change, energy security, and stem cell legislation (see Chapter 3).
- Science, technology, engineering, and mathematics (STEM) education programs in the Department of Education would be a mix of increases and cuts, while funding for STEM programs in the National Science Foundation (NSF) would collectively increase 9 percent to \$790 million in FY 2009 (see Chapter 4).
- Good news would be mixed with bad for many science and engineering disciplines. In FY 2009, the ACI agencies would boost funding for physics (see Chapter 13), astronomy (see Chapter 14), and chemistry (see Chapter 18), but other agencies would reduce their funding. Support for the mathematical sciences (see Chapter 21) would be strong. But funding for other disciplines such as the social and behavioral sciences (see Chapter 19), the non-biomedical life and biological sciences (see Chapter 17), and the earth sciences (see Chapter 16) would be flat or declining.
- The federal government continues to invest billions of dollars in multi-agency R&D initiatives (see Table I-9). Funding for the **National Nanotechnology Initiative** (NNI) would increase 2.4 percent to \$1.5 billion (see Chapter 23). **Networking and Information Technology R&D** (NITRD) funding would increase 6.2 percent to \$3.5 billion (see Chapter 22). Funding for the **Climate Change Science Program** (CCSP) would rebound from recent cuts with a 9.6 percent boost to \$2.0 billion (see Chapter 15).