R&D Funding Outlook: The Stimulus, The Omnibus, and a First Look at FY 2010

Al Teich
Director, Science & Policy Programs
AAAS

2009 AAAS Forum on S&T Policy
2009: A Very Unusual Year

- ARRA, the stimulus bill, signed Feb. 17, before FY 2009 Omnibus Appropriations bill was final

- A huge supplement to the budget passed BEFORE most of the original budget!

- Unprecedented increase for some agencies – e.g., NIH (36%)

- Conference committee chose *higher* of House & Senate, or even more
2009 Supplemental Recovery Funding for R&D
(House, Senate, and Final bills)
(budget authority in billions of dollars)

Source: AAAS analysis of R&D in House and Senate stimulus appropriations bills.
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More on the Stimulus

- Four major R&D priorities: innovation & competitiveness-related basic research, biomedical research, energy R&D, climate change

- Basic competitiveness research: stimulus puts NSF, DOE O/S, and NIST on track to double over 7 to 10 years, as promised in Obama campaign and America COMPETES Act

- Energy & climate also high priorities: $3.5 B for DOE energy R&D, $400 M for NASA climate, $830 million for NOAA

- Agencies get FY 2009 money, can obligate the funds through Sept. 2010, but goal is to spend the money quickly
R&D in the FY 2009 Omnibus

- Democrats in Congress waited out President Bush - final FY 2009 appropriations include significant increase in domestic discretionary spending
- Even without ARRA every major R&D agency receives an increase above inflation
- Most FY 2009 R&D numbers greater than request (except NSF, DOE science, DOE & DOD weapons)
- DOE is big winner – large increases in energy & science portfolios, in both regular budget & stimulus
- America COMPETES Act agencies return to 10-year doubling track
FY 2009 R&D Appropriations (Congress vs. Request)
Percent Change from FY 2008 (as of FEBRUARY '09 excl. Stimulus)

DOE energy +21%
DOE Science
DOT
DHS
NOAA
NIST
VA
NSF
DOD "S&T"
USGS
NASA
USDA
DOD weapons
NIH
EPA
DOE defense

Source: AAAS estimates of R&D in the FY 2009 omnibus / continuing resolution.
Excludes supplemental (stimulus) appropriations in ARRA (P.L. 111-5).
DOD "S&T" = DOD R&D in "6.1" through "6.3" categories plus medical research.
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FY 2009 R&D Appropriations (as of 2/09 excl. stimulus)
Percent Change from FY 2008 (as of FEBRUARY '09)

Source: AAAS estimates of R&D in the FY 2009 omnibus / continuing resolution.
Excludes supplemental (stimulus) appropriations in ARRA (P.L. 111-5).
DOD "S&T" = DOD R&D in "6.1" through "6.3" categories plus medical research.
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Total R&D by Agency: FY 2009 Final (incl. Recovery Act)*

Budget Authority in billions of dollars

- DOD, $82.7
- HHS (NIH), $41.9
- DOE, $16.3
- NSF, $7.5
- USDA, $2.6
- DHS, $1.1
- All Other, $6.1

Total R&D = $172.0 billion

* AAAS estimates of R&D based on FY 2009 appropriations bills.
Trends in Federal R&D, FY 1976-2009 (2/09, incl. stimulus)*
in billions of constant FY 2008 dollars

Source: AAAS analyses of R&D in annual AAAS R&D reports. * FY 2009 figures are latest AAAS estimates of FY 2009 appropriations, including emergency stimulus (HR 1). R&D includes conduct of R&D and R&D facilities. Data to 1984 are obligations from the NSF Federal Funds survey. GDP figures are from OMB, Budget of the U.S. Government FY 2009. FEB. '09 REVISED © 2009 AAAS
Trends in Research by Agency, FY 1976-2009 (as of 2/09)*
in billions of constant FY 2008 dollars

Source: AAAS analyses of R&D in annual AAAS R&D reports.
* FY 2009 figures are latest AAAS estimates of FY 2009 appropriations, including emergency stimulus (HR 1). Research includes basic research and applied research. 1976-1994 figures are NSF data on obligations in the Federal Funds survey. FEB. ’09 REVISED © 2009 AAAS
Potential Impacts on Research

- Federal funding for research will see real increases in 2009 (sustained into 2010) after 4 years of real declines.
- Stimulus provides unprecedented federal support for academic facilities and instrumentation and federal labs.
- NSF and NIH grant proposal success rates will improve dramatically.
- Bill specifies in broad brush how agencies will spend their stimulus money, but agencies differ on implementation.
How NIH Will Use $10.4 B Stimulus

- Spend as much as possible in FY 2009
- $8.2 B for research priorities ($7.4 B to institutes and common fund); $800 M to director’s office
- $1 B for extramural construction, repairs, alterations
- $300 M for shared instrumentation, other capital equipment
- $500 M for NIH buildings & facilities
- $400 M for comparative effectiveness research (part of $1.1 B HHS program)
NIH Stimulus Funding Mechanisms

- Choose best, recently reviewed unfunded R01s capable of making significant advances in 2 years
- Fund new R01s, capable of results in 2 years
- Accelerate ongoing science through targeted supplements to current grants
- Fund new types of activities that fit ARRA – e.g., “jump start” new NIH Challenge Grant program (malaria & TB drugs; influenza vaccine; vaccines & therapeutics for emerging & resistant infections)
- “Grand Opportunities” grants, new faculty grants...
National Institutes of Health Budget by Institute, 1998-2009
(budget authority in billions of constant FY 2008 dollars)

Source: AAAS R&D reports from NIH budget documents 1996-2008. * 2009 figures are AAAS estimates of 2009 omnibus appropriations, including stimulus appropriations in HR 1. Adjusted for inflation using OMB's GDP deflators. FEB. 09 © 2009 AAAS
NSF Stimulus Allocations ($3 Billion)

- $2 B for “highly rated research proposals which could not otherwise be funded because of budget constraints…”
- $200 M – “shovel ready” major research equipment and facilities construction (NSB approved)
- $300 M – major research instrumentation, $200 M – academic research infrastructure
- $100 M – education: $60 M – Noyce Scholarships, $25 M – math-science partnerships; $15 M – new professional science master’s program
- All grants under ARRA – standard grants with duration up to 5 years
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.
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President’s FY 2010 Budget

- President Obama released FY 2010 budget outline on February 26. Detailed budget will be released “soon”

- R&D: investing in the sciences, health care, energy & climate, and security continue to be priorities

- Few details (NSF - $7.0 B; begin doubling cancer research at NIH; DOE – substantial increase for O/S, climate science
What’s Next?

- Yesterday Congress approved a Budget Resolution for FY 2010 before receiving a detailed FY 2010 Budget request
- FY 2010 preliminary budget includes language reaffirming importance of R&D, supporting funding levels set in America COMPETES Act
- President’s NAS speech set goal of 3% R&D/GDP
- Concerns:
  - Questions about how quickly and how effectively R&D stimulus funding will be spent?
  - Long term outlook for sustained growth for research funding? What happens in 2011 and beyond?
ateich@aaas.org
http://www.aaas.org/spp(rd)