

Funding Opportunities for R&D in the 2006 Federal Budget

Kei Koizumi

October 7, 2005

for the Bio E2E Alternative Funding Fair

AAAS R&D Budget and Policy Program

<http://www.aaas.org/spp/rd>

See the “What’s New” section for the latest updates; see the “Seminars and Presentations” section for copies of this presentation.

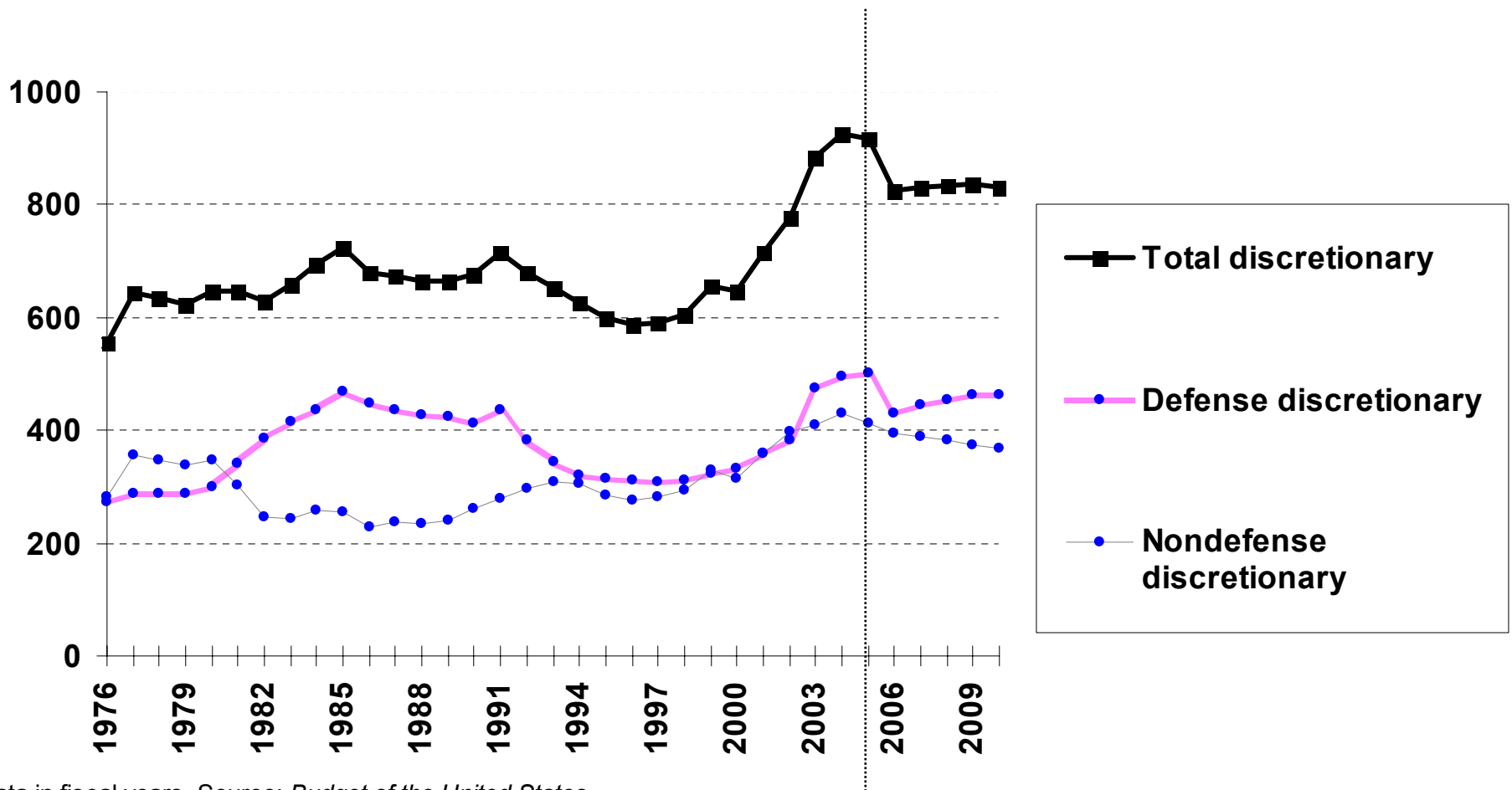


WHERE ARE WE NOW? THE FY 2006 BUDGET

- The FY 2005 budget deficit could be down slightly to about \$300 billion, but FY 2006 will be much higher because of Iraq, Afghanistan, and the Gulf coast.
- In FY 2006, nondefense discretionary spending bears the burden of deficit reduction. Now, it may also bear the burden of disaster relief.
- Domestic, non-security discretionary spending is flat in 2005, would fall 1 percent in 2006 in the President's budget and stay flat for the next five years, excluding disaster relief/reconstruction spending.
- Federal R&D investments come from the discretionary budget.

Trends in Discretionary Spending, FY 1976-2010

in billions of constant FY 2005 dollars



Data in fiscal years. Source: *Budget of the United States Government, FY 2006*. FY 2005 data are estimates. FY 2006-2010 data are budget projections; defense figures based on DOD and DOE planning profiles. FY 2006 - figures exclude Iraq occupation costs.

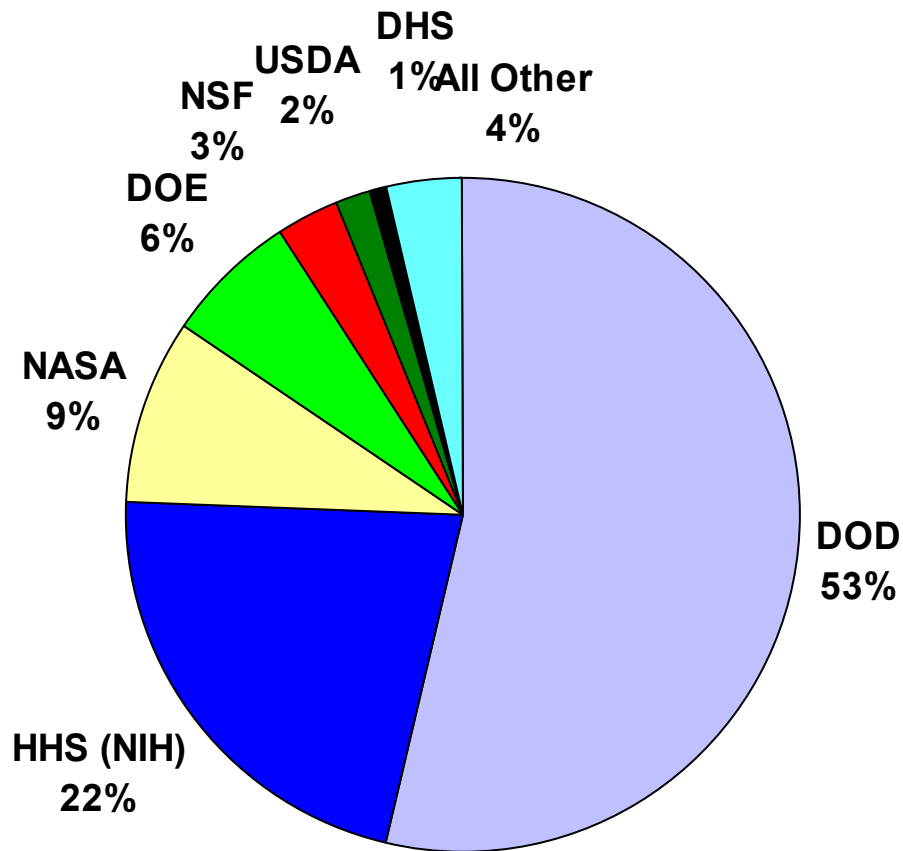
FEB. '05 © 2005 AAAS

R&D IN THE FY 2006 BUDGET

- Federal R&D was at an all-time high of \$132 billion last year, but would barely increase (0.1%) in 2006 after flat funding for many agencies in 2005.
- The FY 2006 budget represents a downward shift from recent trends: declining funding for most R&D programs, modest increases for space exploration and homeland security R&D. Even defense R&D would level off.

Total R&D by Agency: FY 2006 Proposed

Budget Authority in billions of dollars



Total R&D =
\$132 billion
(REVISED)

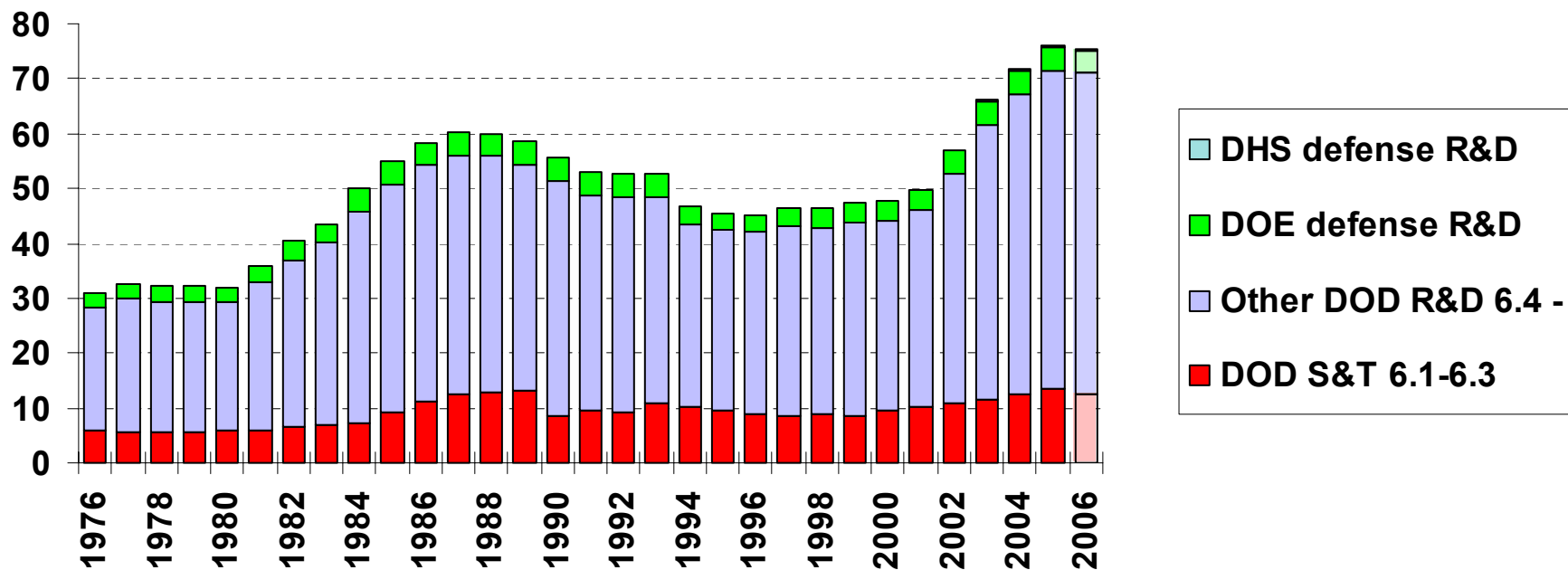
Source: AAAS, based on OMB R&D Budget Data and agency estimates for FY 2006.

MARCH '05 REVISED © 2005 AAAS



Trends in Defense R&D, FY 1976-2006

in billions of constant FY 2005 dollars



Source: AAAS analyses of R&D in *AAAS Reports VIII-XXX*. FY 2006 figures are AAAS estimates of Senate appropriations. DOD S&T figures are not strictly comparable for all years because of changing definitions. SEPT. '05 © 2005 AAAS



R&D IN THE FY 2006 BUDGET (2)

- There would be cuts across the federal R&D portfolio, and flat funding for past stars such as biomedical research.
- There would be hard choices even in favored agencies: in NASA, more for Space Station and space exploration technologies, but cuts in NASA physical and environmental research; increases for some DHS programs, but cuts in others such as biodefense countermeasures.
- Congress has different priorities, but is working with the same budget totals.

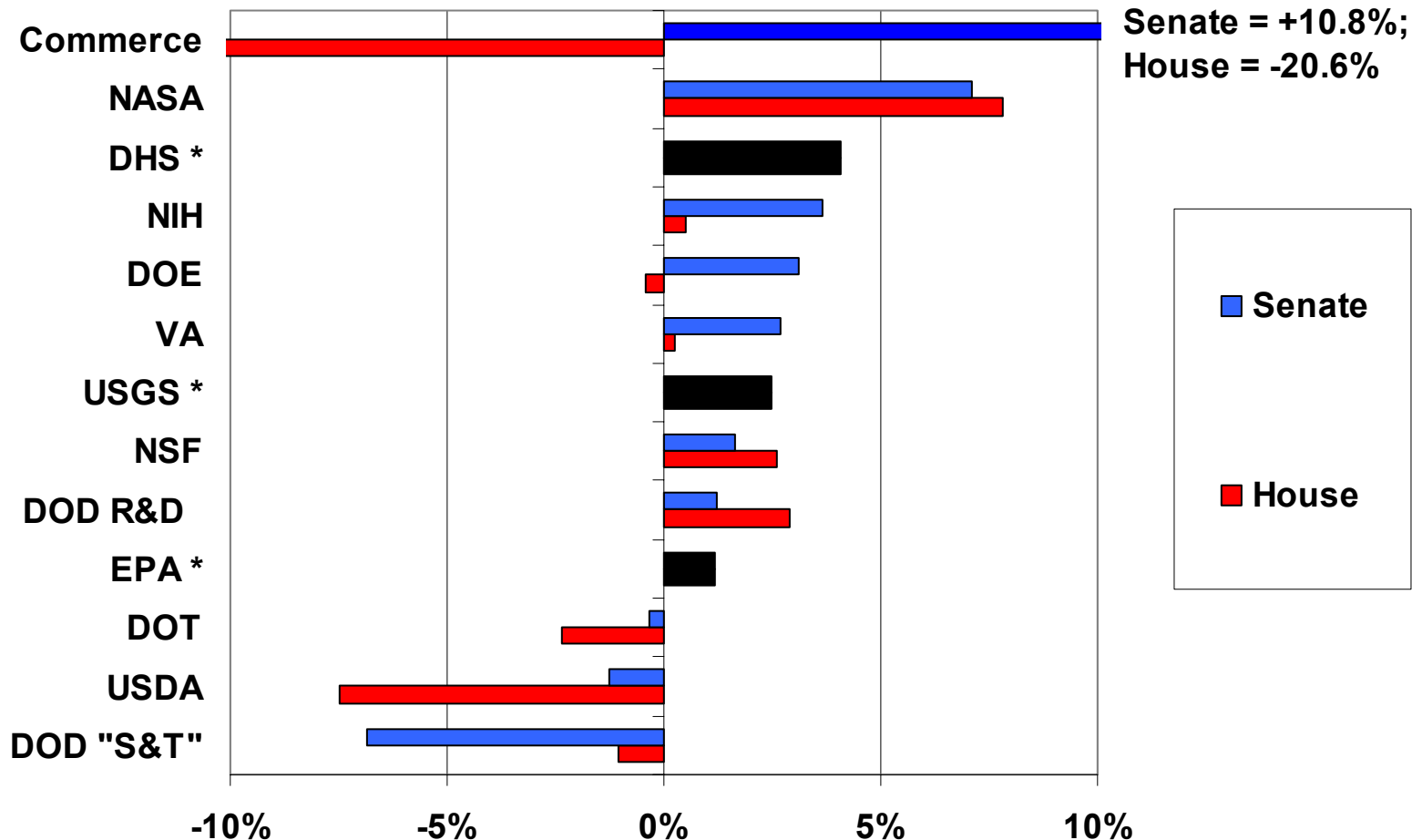
WHERE ARE WE NOW? THE FY 2006 BUDGET

The federal R&D investment is funded through 10 or the 11 (or 12) appropriations bills that fund discretionary programs. Only 2 are enacted. DOD, NIH, and most other agencies are operating under stop-gap appropriations.

- Congress is far behind schedule, and will be further delayed by responses to Hurricane Katrina. Most agencies will wait until November or December for their final budgets.
- So far, the House and Senate are far apart on funding priorities in key agencies such as Commerce, NIH, and DOE.
- Funding can only get tighter, as Gulf coast reconstruction needs become clearer.

FY 2006 R&D Appropriations (as of 10/05)

Percent Change from FY 2005



Source: AAAS estimates of R&D in FY 2006 House and Senate appropriations bills.

* - USGS, EPA, and DHS are final FY 2006 appropriations.

DOD "S&T" = DOD R&D in "6.1" through "6.3" categories plus medical research.

OCT. '05 PRELIMINARY © 2005 AAAS

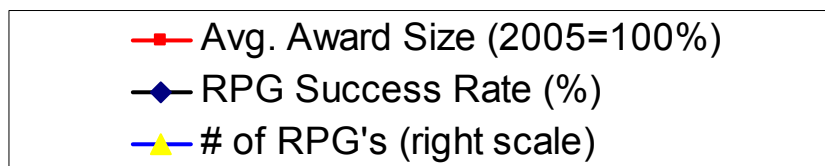
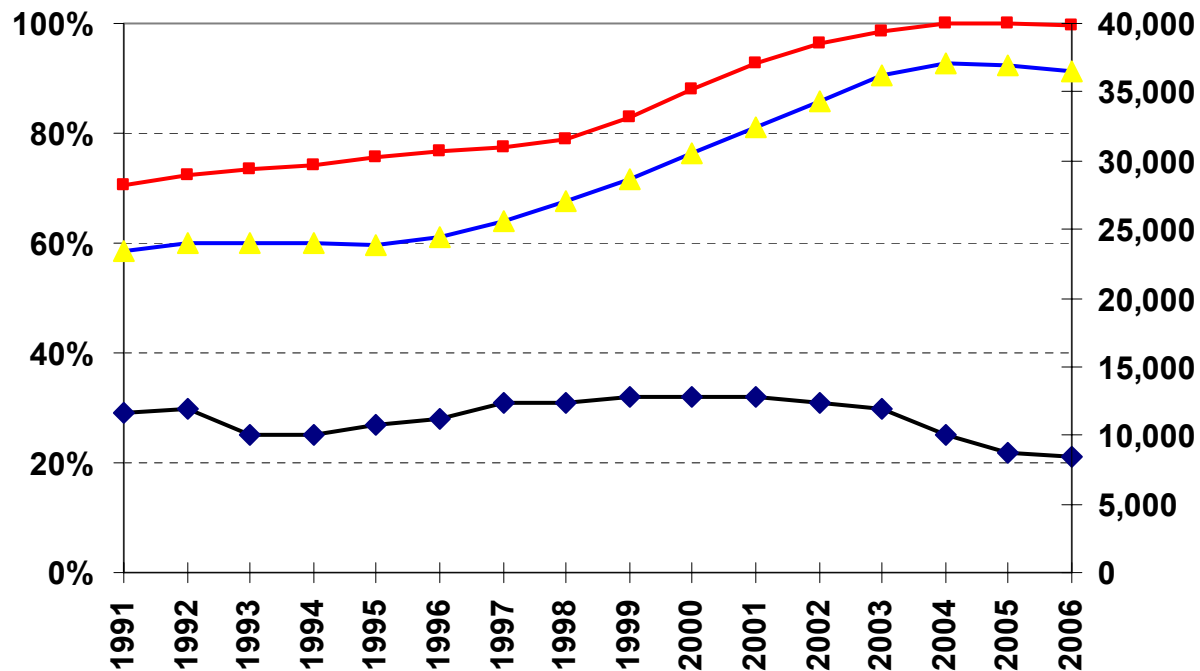


RECENT TRENDS IN LIFE SCIENCES

Big increases around the turn of the century have leveled off for biomedical research.

- The NIH doubling campaign (98-03) and post-anthrax attack attention to biodefense boosted federal R&D.
- But domestic spending cuts are having an impact now.
- Many measures of NIH funding are flat or declining after several years of growth.
- NIH budget growth has helped universities, but NIH funds to industry have actually grown faster because of biodefense.
- And of course, the federal stem cell policy is controversial.

National Institutes of Health Research Project Grants



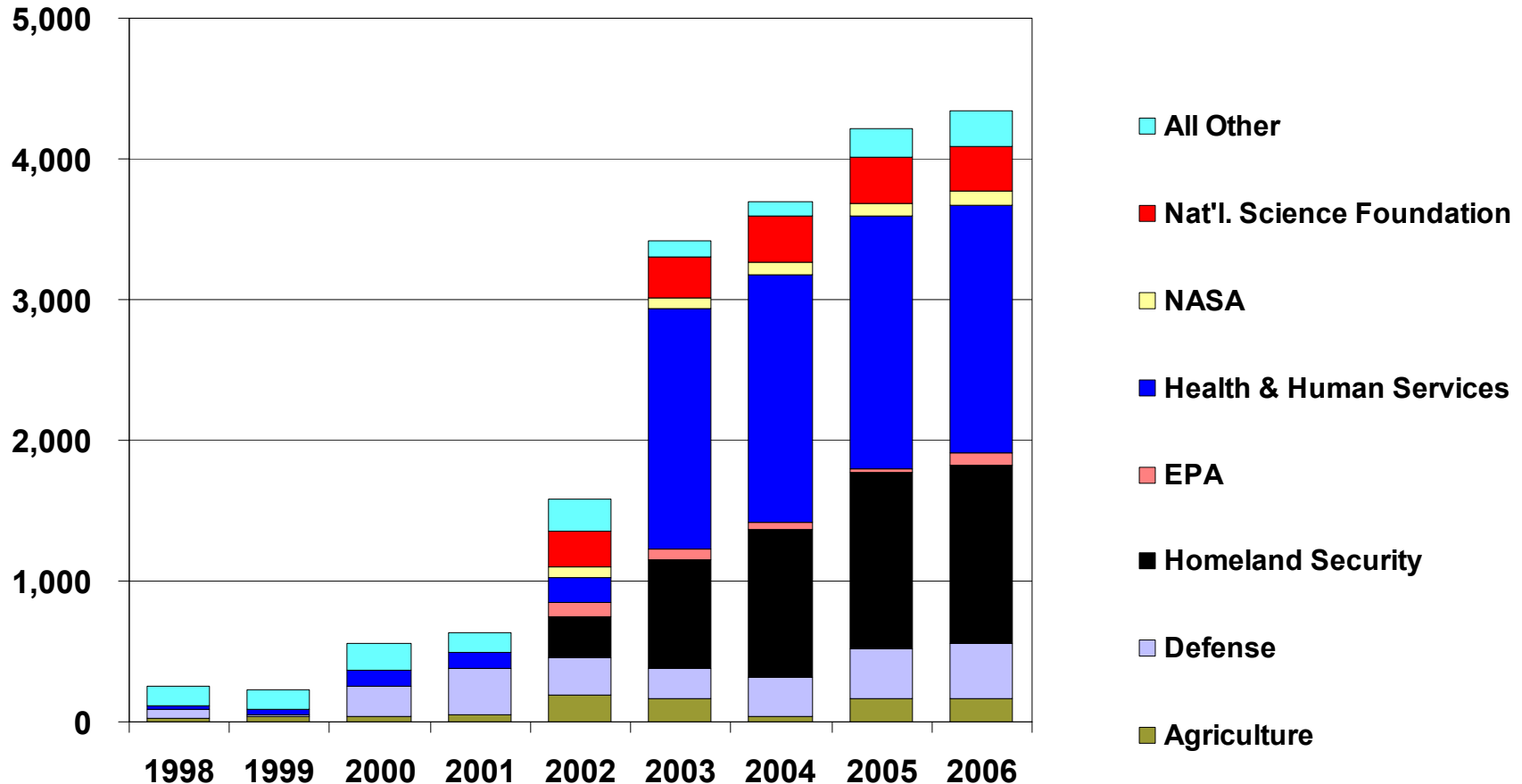
Source: NIH agency budget justification for FY 2006. Average proposed award size \$407,000 in FY 2006. Other years adjusted for inflation.

FEB. '05 © 2005 AAAS



Federal Homeland Security R&D*, by Agency

(budget authority in millions of constant FY 2005 dollars, FY 1998-2006)



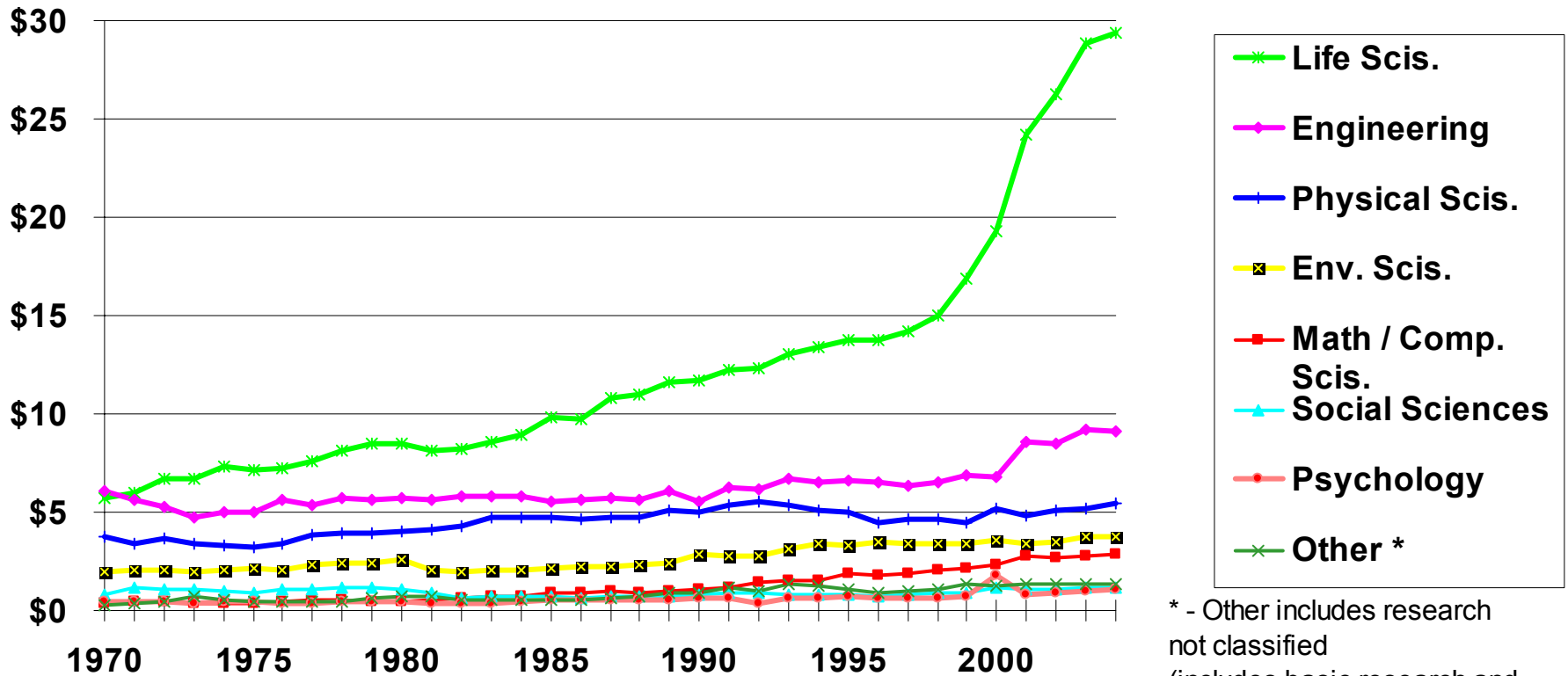
Source: AAAS, based on Office of Management and Budget data. Includes conduct of R&D and R&D facilities. * - 1998-2001 data are for R&D within 'funding to combat terrorism.'

MARCH '05 REVISED © 2005 AAAS



Trends in Federal Research by Discipline, FY 1970-2004

obligations in billions of constant FY 2004 dollars



* - Other includes research not classified (includes basic research and applied research; excludes development and R&D facilities)

Source: National Science Foundation, *Federal Funds for Research and Development FY 2002., 2003, and 2004, 2004.* FY 2003 and 2004 data are preliminary. Constant-dollar conversions based on OMB's GDP deflators.
OCTOBER '04 © 2004 AAAS



SBIR FUNDING PROBLEMS

For biomedical research, NIH is the largest source of SBIR / STTR funding (above \$600 million). NSF, DOD, and DHS are others.

- SBA has determined that VC-controlled firms aren't eligible for SBIR funding.
- SBA may change its ruling, but it could take years.
- NIH Director and many others want VC-backed firms to be eligible, but SBA sets the rules for agency programs.
- House and Senate bills to clarify eligibility have been introduced, but so far they haven't moved.
- There is opposition to changing the rules.

PROJECT BIOSHIELD

Bioshield has \$5.6 billion over 10 years (total of \$3.4 billion already available) for procurement of biodefense countermeasures.

- So far, 3 contracts totaling \$1.0 billion have been signed, the largest to VaxGen for anthrax vaccine.
- DHS funds the program, but HHS has the authority and expertise to select eligible countermeasures. Products go to the Strategic National Stockpile.
- It's not an R&D program, but it is designed to stimulate private-sector R&D.
- Anthrax has been the primary focus, but recent solicitations have diversified to include potassium iodide, radiation treatments, and smallpox with others to come.
- Plans for a Bioshield II are moving very slowly.

OUTLOOK FOR THE FY 2006 BUDGET

There's a lot of work to be done this fall.

Expect delays: the FY 2006 budget will not be final until...
Thanksgiving? Christmas?

Even at a time when U.S. leadership in science and technology is eroding, don't expect increased funding for research: the broader budget choices policymakers have made will constrain future investments in R&D.

Especially for investigators in non-priority areas (now including biomedical research), the challenges of finding the resources to do important work will get more difficult next year and the years ahead.