



# The '07 R&D Budget, The Long Term Budget Picture, and Innovation Legislation

To: Congressional Visits Day

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# SOURCES OF UNIV. FEDERAL R&D FUNDING

## ◇ Major Federal Agencies Supporting of Univ. R&D Funding:

- NIH
- Defense
- Energy
- National Science Foundation
- NASA

# The President's FY 07 R&D Budget

President's "American Competitiveness Initiative" (ACI)

increases funding - Good News - for:

- \* DOE up 14%
- \* NSF up 7.8%

And pledge to double over ten years - KEY

The President's Budget for the Rest:

- \* DOD Basic Research (6.1) - down 3.3%
- \* DOD Applied Research (6.2) - down 13.4%
- \* NIH Frozen (\$18m above 06)
- \* NASA Science up 1%, but Manned Space & science capital programs likely will force a cut

--NSF, NASA, NOAA all compete with each other in the same Appropriations Subcommittee

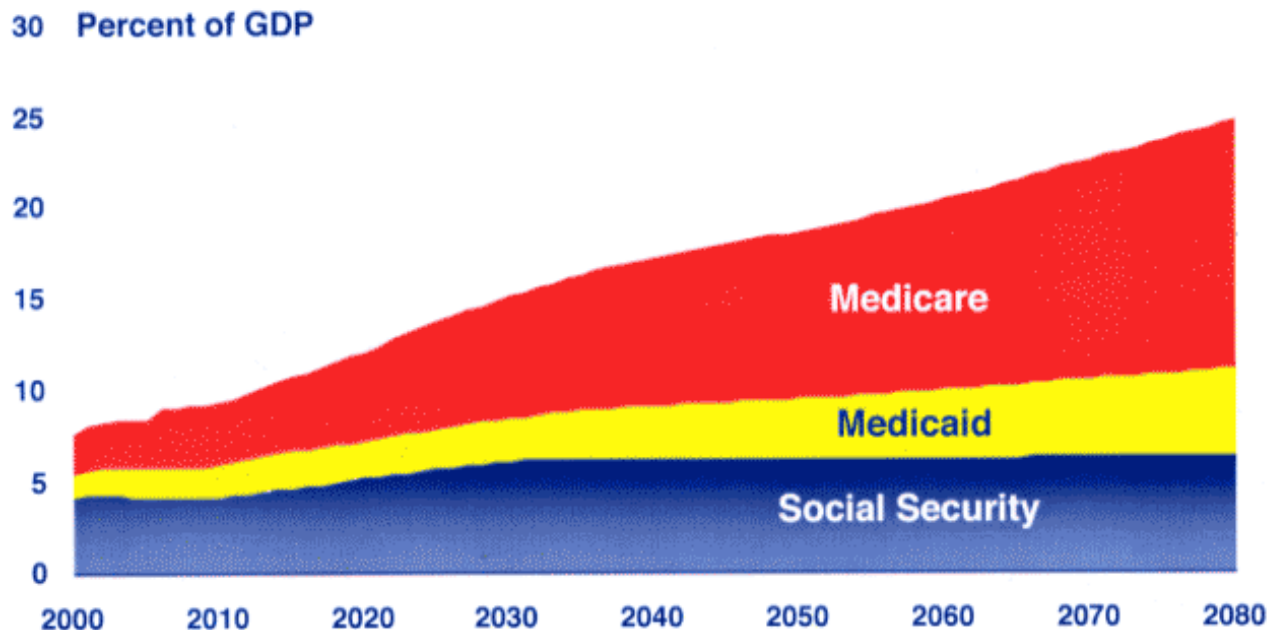
--NIH competes with Medicare in a separate Subcommittee -

- Senate Budget Resolution just raised the NIH number

# THE LONG TERM FEDERAL R&D BUDGET PICTURE --

- ◇ Demographics create a problematic picture for federal R&D long term --
- Data is from the Controller General of the US/General Accountability Office (GAO):

# Social Security, Medicare, and Medicaid Spending as a Percent of GDP



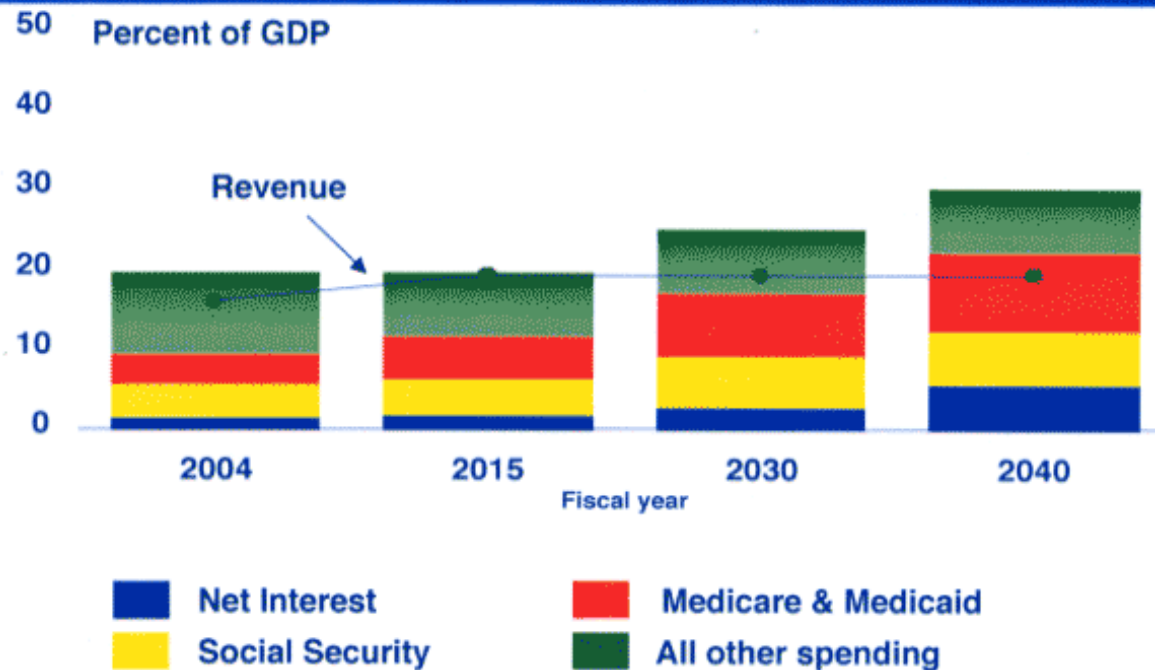
Note: Social Security and Medicare projections based on the intermediate assumptions of the 2005 Trustees' Reports. Medicaid projections based on CBO's January 2004 short-term Medicaid estimates and CBO's December 2003 long-term Medicaid projections under mid-range assumptions.

Source: GAO analysis based on data from the Office of the Chief Actuary, Social Security Administration, Office of the Actuary, Centers for Medicare and Medicaid Services, and the Congressional Budget Office.

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# Composition of Spending as a Share of GDP

## Under Baseline Extended

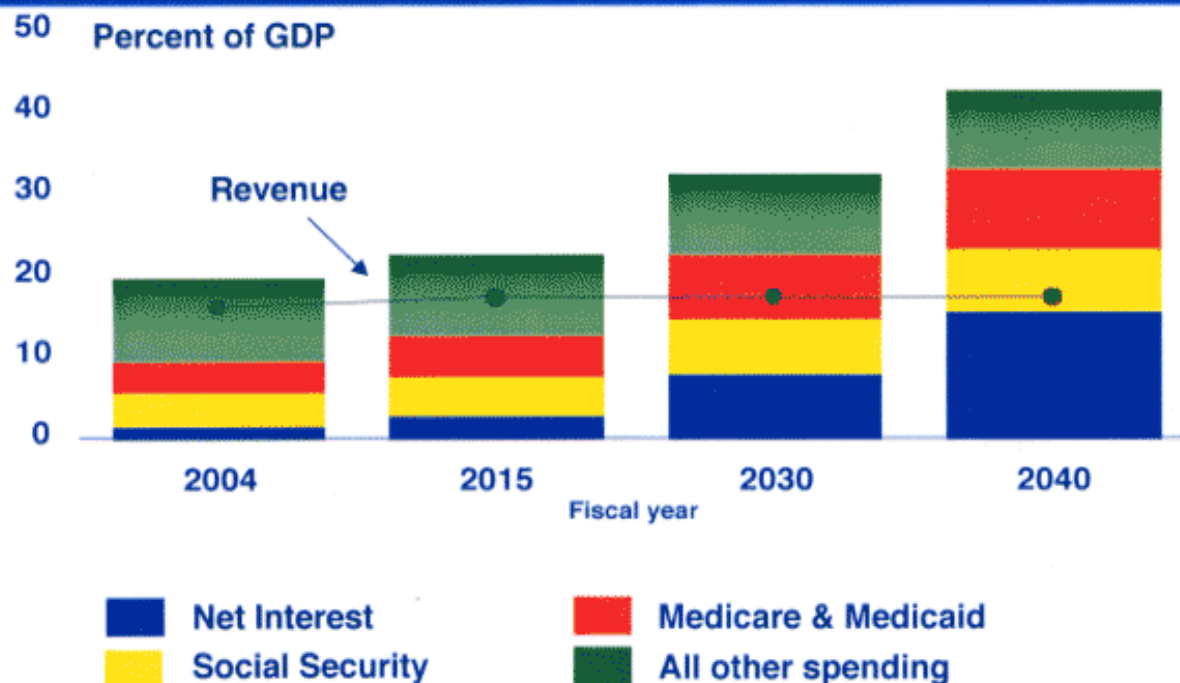


Notes: In addition to the expiration of tax cuts, revenue as a share of GDP increases through 2015 due to (1) real bracket creep, (2) more taxpayers becoming subject to the AMT, and (3) increased revenue from tax-deferred retirement accounts. After 2015, revenue as a share of GDP is held constant.

Source: GAO's August 2005 analysis.

# Composition of Spending as a Share of GDP

Assuming Discretionary Spending Grows with GDP after 2005  
and All Expiring Tax Provisions are Extended



Notes: Although expiring tax provisions are extended, revenue as a share of GDP increases through 2015 due to (1) real bracket creep, (2) more taxpayers becoming subject to the AMT, and (3) increased revenue from tax-deferred retirement accounts. After 2015, revenue as a share of GDP is held constant.

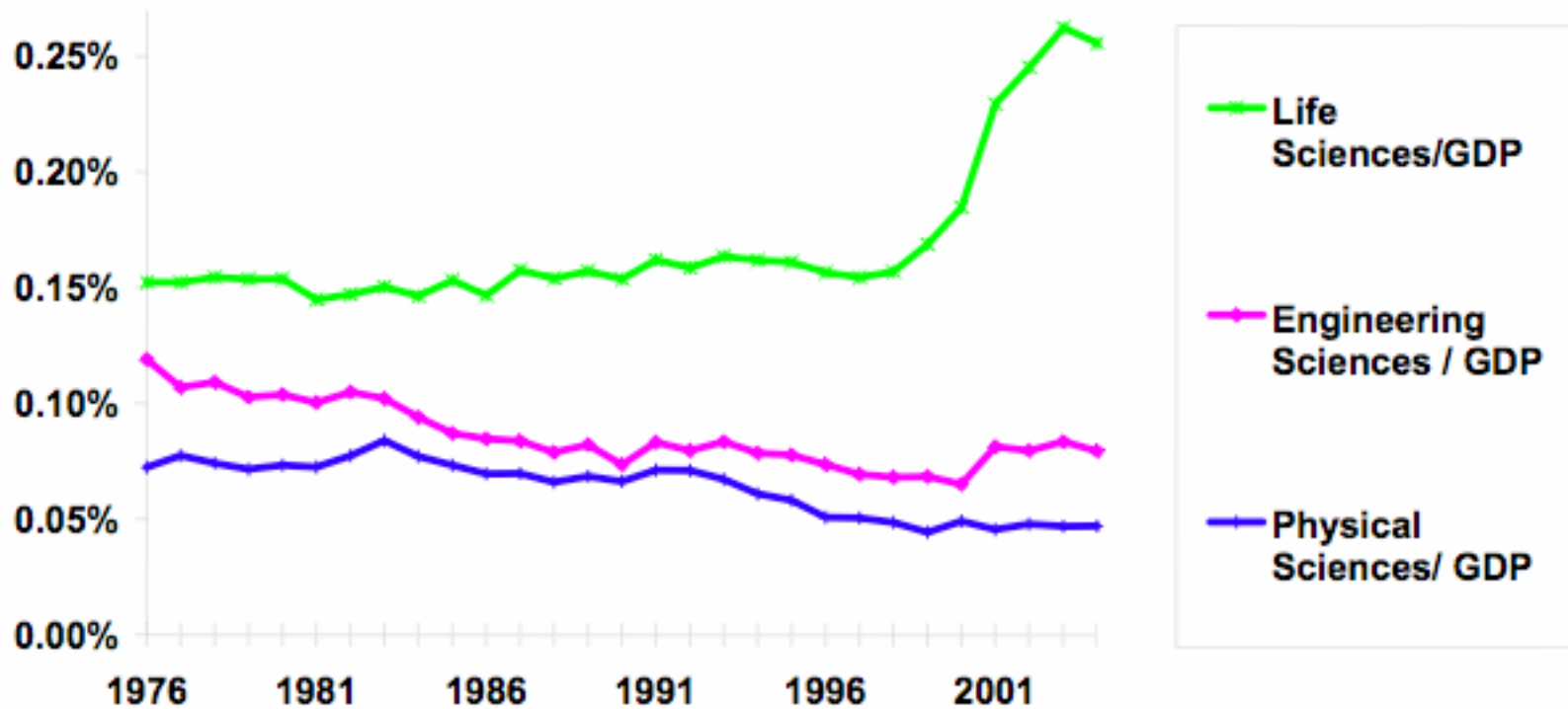
Source: GAO's August 2005 analysis.

# Debunking Myths:

- ◇ Myth 1# - We can grow our way out of this.
- ◇ Myth #2 - Across the Board Cuts &/or ending Fraud, Waste, Abuse is enough.
- ◇ Myth #3 - Letting the tax cuts sunset - or holding discretionary spending down is enough.
- ◇ Myth #4 - Waiting is painless.

## Trends in Federal Research by Discipline, FY 1976-2004

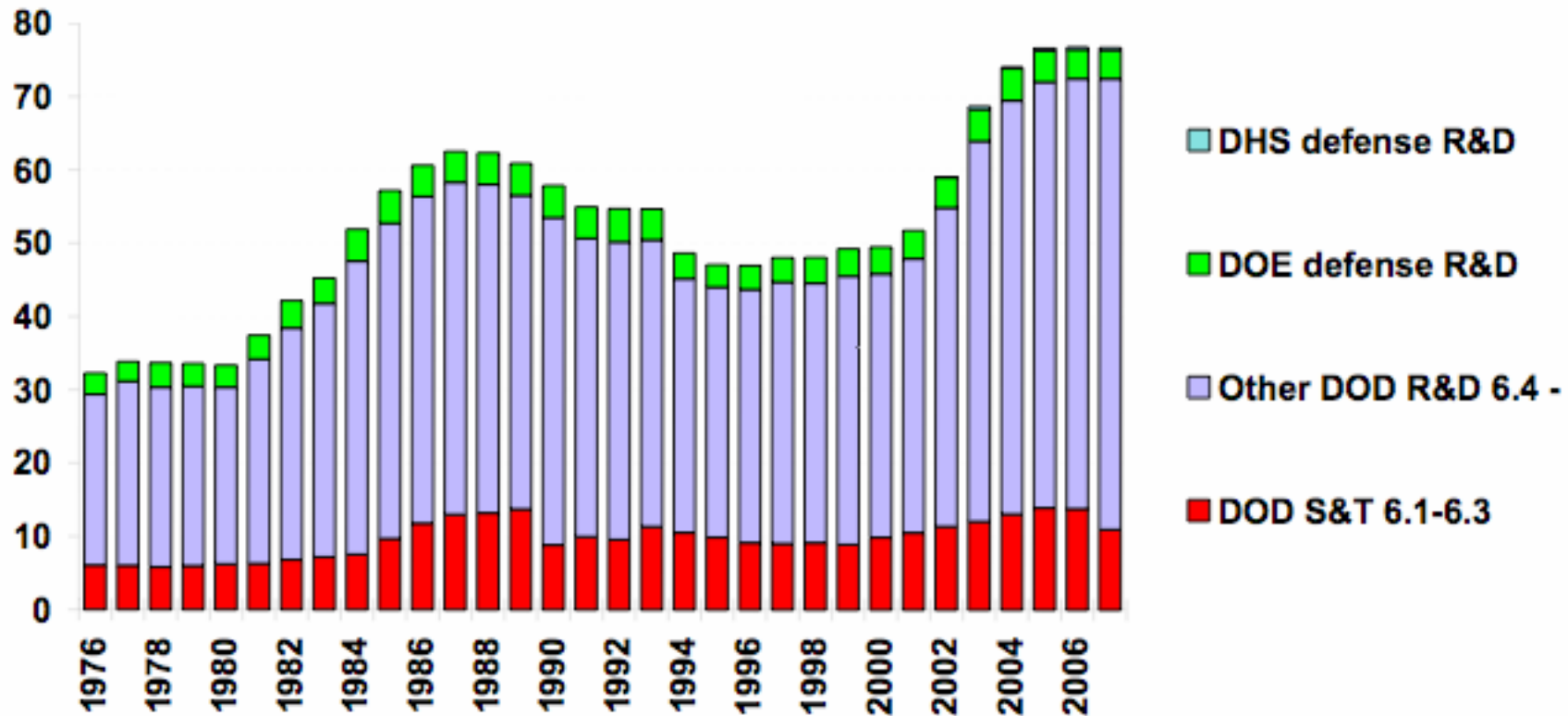
obligations for research / Gross Domestic Product



Source: National Science Foundation, *Federal Funds for Research and Development FY 2002., 2003, and 2004, 2004*. FY 2003 and 2004 data are preliminary. GDP figures from Budget of the U.S. Government FY 2005. OCTOBER '04 © 2004 AAAS

## Trends in Defense R&D, FY 1976-2007

in billions of constant FY 2006 dollars



Source: AAAS analyses of R&D in *AAAS Reports VIII-XXXI*. FY 2007 figures are President's request.  
 R&D includes conduct of R&D and R&D facilities. DOD S&T figures are not strictly comparable for all years because of changing definitions.  
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So.....

◇ LONG TERM --

- IT'S AN R&D DESERT OUT THERE.....

# Innovation Legislation-The Senate

- ◇ It takes 3 to Tango - Senate, House, White House -
- ◇ The Senate:
  - Started the process off - major bills in Dec. and early Jan.
  - Council on Competitiveness' proposal -became Nat'l Innovation Act
  - National Academies of Sciences report - Gathering Storm - became PACE Act
  - Over 70 Senate Cosponsors - Bipartisan
  - Business Champions - Norm Augustine, ex-Lockheed; Craig Barrett, Intel; Sam Palmisano, IBM - also Tech Net, SIA, Council on Competitiveness, BRT, growing list -- THIS SUPPORT IS CRITICAL
  - R&D and Science education bills now moving in key Senate Committees - need three committees for a bill of critical mass
  - Senate Energy (DOE Science) - reported bill out
  - Senate Commerce (NSF R&D and NSF education)- hearings started last week, markup in May
  - HELP (education) - slow - SH met with Kennedy
- ◇ Sen. Frist hopes to consolidate on Senate floor in May

# Innovation Legislation - The White House

## ◇ White House:

- Saw Senate lead; pressed by business community (Card, Hubbard, Rove); saw modest political opportunity
- Put "American Competitiveness Initiative" (ACI) into State of the Union
- No applause for this line in State of the Union
- BUT: President did make connection between Research and Economic growth for the first time
  - ◇ NOT the traditional conservative view of growth via capital supply increments
- ACI: R&D money for Energy Science & NSF and for K-12 education
- more modest than Senate bills
- Meaningful ONLY if ten year doubling of NSF and DOE Science can be forced on Congress

# Innovation Legislation - is it worth it?

- ◇ GIVEN THE ONCOMING LONG TERM R&D CRISIS-
- ◇ ONLY □THE COMPOUNDING EFFECT OF DOUBLING NSF AND DOE SCIENCE ARE MEANINGFUL OVER □ TIME- BUT DOUBLING THOSE IS MEANINGFUL
- ◇ MIT DEPENDS ON 5 SCIENCE AGENCIES - COULD WE TAKE TWO OF THE THESE OFF THE TABLE THIS YEAR? WOULD BE A BIG DEAL
- ◇ WORK ON THE NEXT 3 OVER TIME?
  - NIH HAS POWERFUL ADVOCACY ORGANIZATION AND WILL MAKE IT - BABYBOOM WILL INSIST ON IT
  - DOD - WE WILL HAVE TO SPEND ON DEFENSE R&D
  - NASA - PROBLEM
- ◇ If this is worth it, where's the House?

# Innovation Legislation - The House

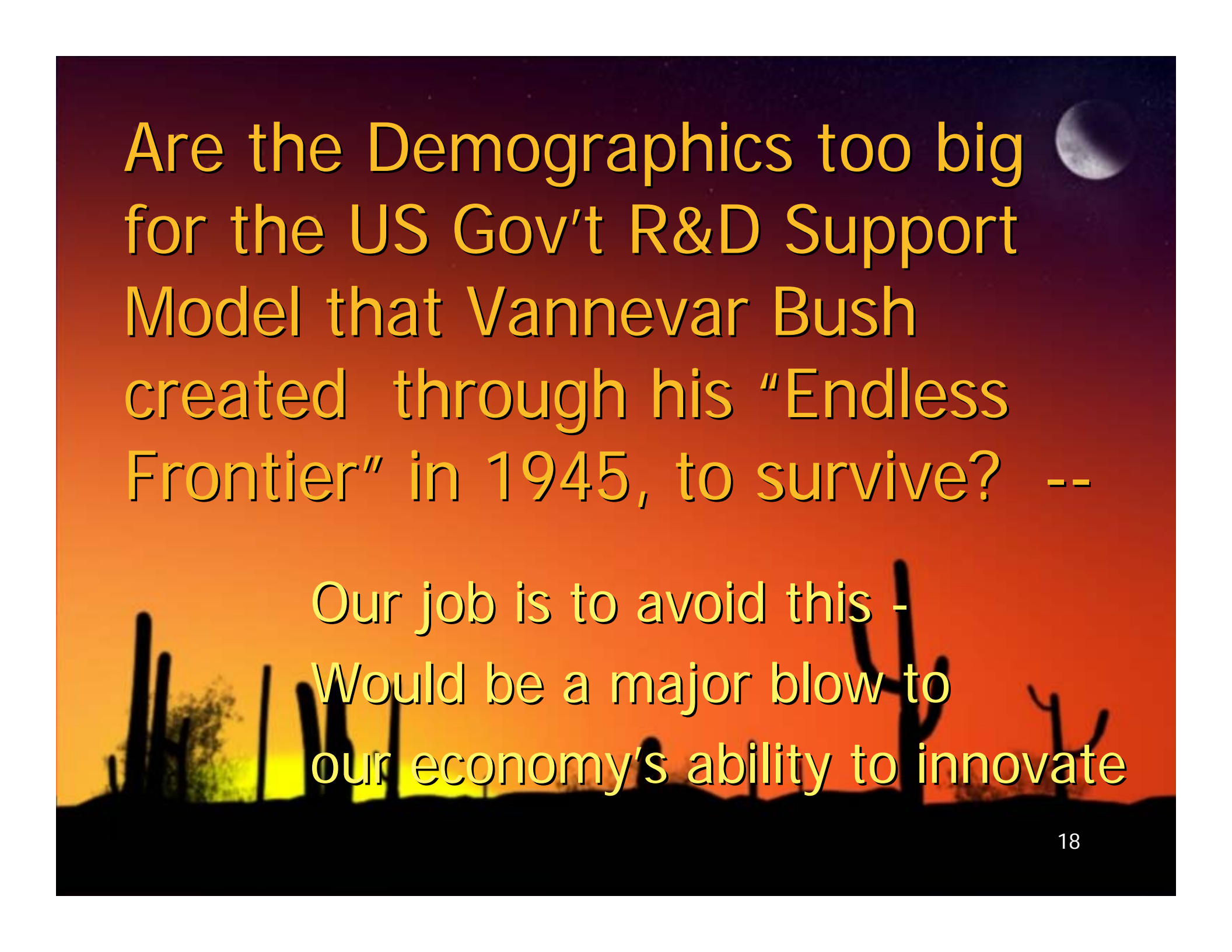
- ◇ House:
- ◇ Speaker and Republican High Tech task force announced and introduced innovation legislation 4 weeks ago - elements:
  - Science education - program consolidation
  - Tort reform/ regulatory reform
  - No R&D focus except via tax code for industry
  - No foreign talent immigration reform
- ◇ But Rep. Boelert, House Science Chair, doing bill - has enough juris. to do DOE Sci, NSF, NSF ed
- ◇ Will the leadership let him get it to the floor? □
- ◇ Closing Window here - short session; 2 months to line up

# Legislative Summing Up ...

- ◇ White House more focused on approp's - but we need authorizing foundation, too
- ◇ Authorizing bill, forcing debate and votes, is the way to educate Members
- ◇ Long term - legislation is only as enduring as the ongoing advocacy organization behind it
- ◇ Physical Science has limited advocacy organization - can this bill help build it?
- ◇ Approp's critical, too - without full funding for NSF and DOE Science this effort is meaningless

# Related Possible Ongoing Efforts -

- ◇ Federal R&D, particularly for the physical sciences is not on autopilot
- ◇ public has to be educated, Univ.-Business alliance cemented
- ◇ what can be done to improve national science policy understanding and outreach?
- ◇ Defense R&D will be a survivor - can we do better with long-term Defense fundamental/applied science (6.1 to 6.3)?



Are the Demographics too big  
for the US Gov't R&D Support  
Model that Vannevar Bush  
created through his "Endless  
Frontier" in 1945, to survive? --

Our job is to avoid this -  
Would be a major blow to  
our economy's ability to innovate