

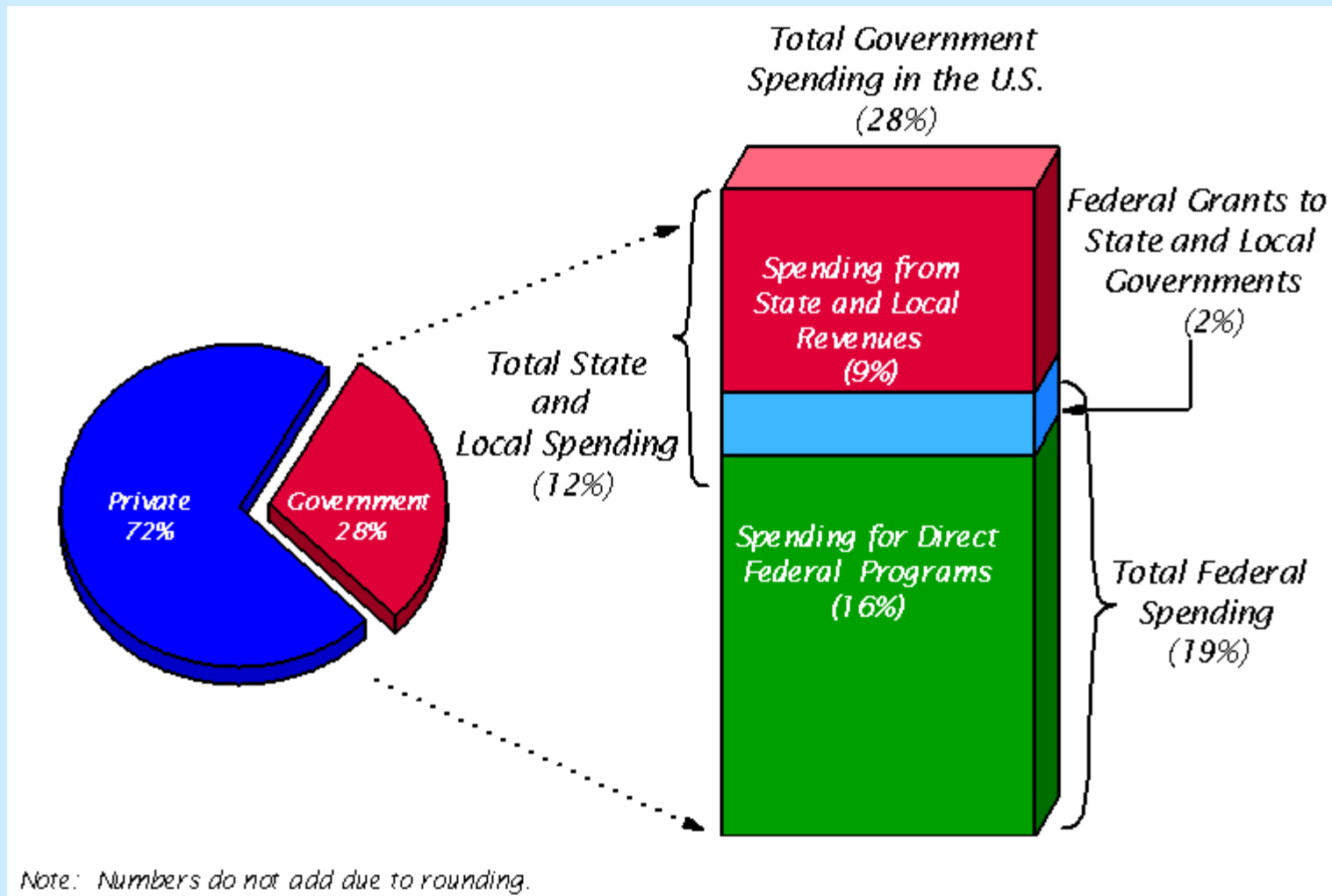


# R&D in the President's FY 2002 Budget

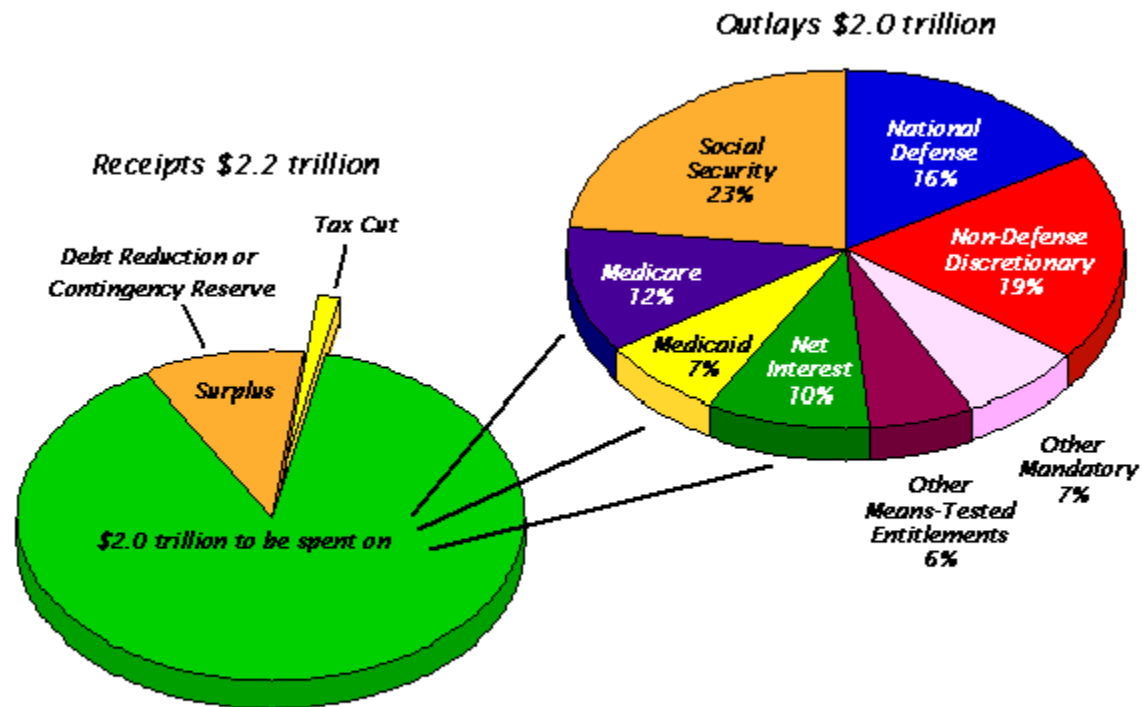
Michael Holland

May 2, 2001

# Government Spending as a Share of GDP, 2000



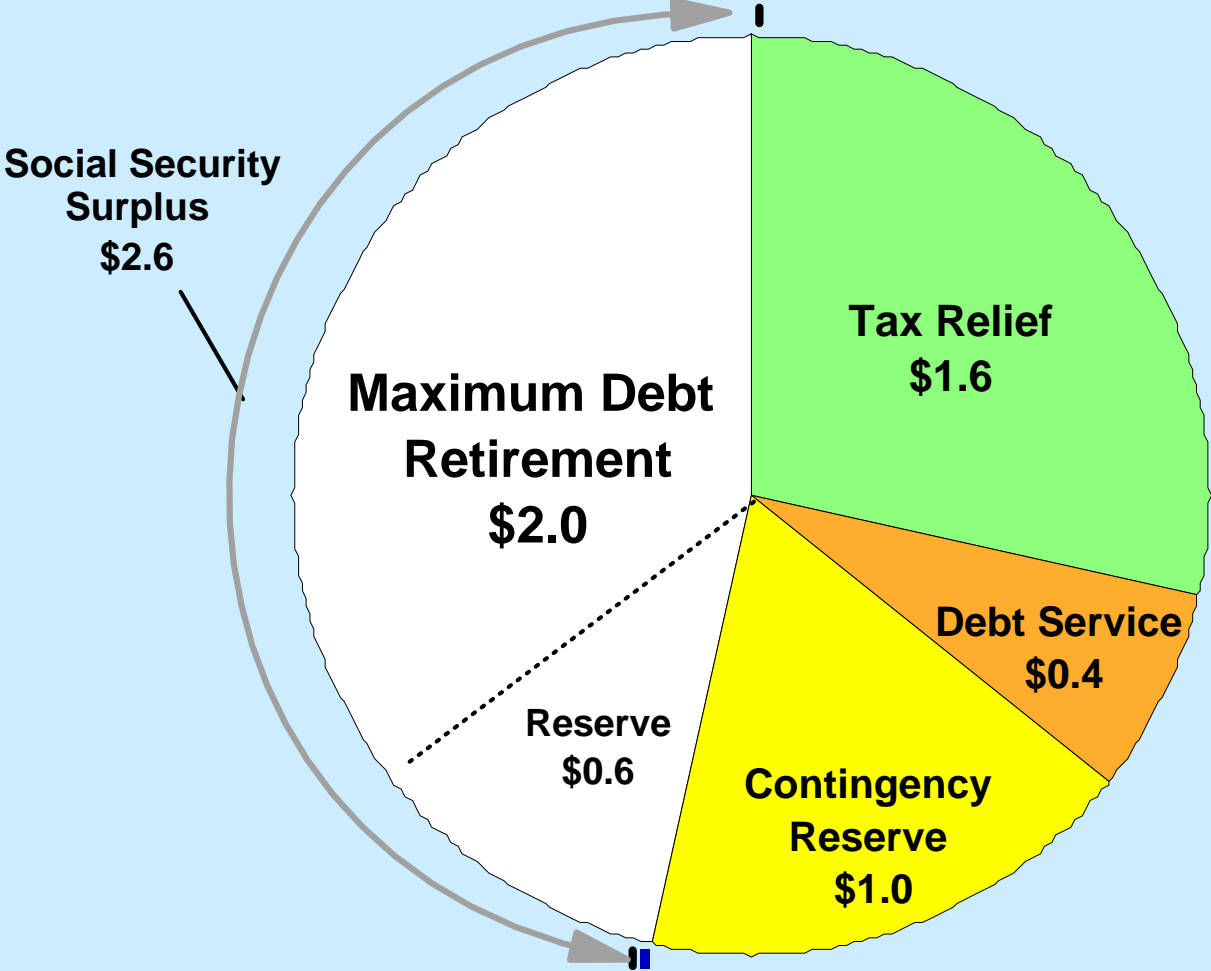
# The President's Proposal for FY2002



*\* Means-tested entitlements are those for which eligibility is based on income. The Medicaid program is also a means-tested entitlement.*

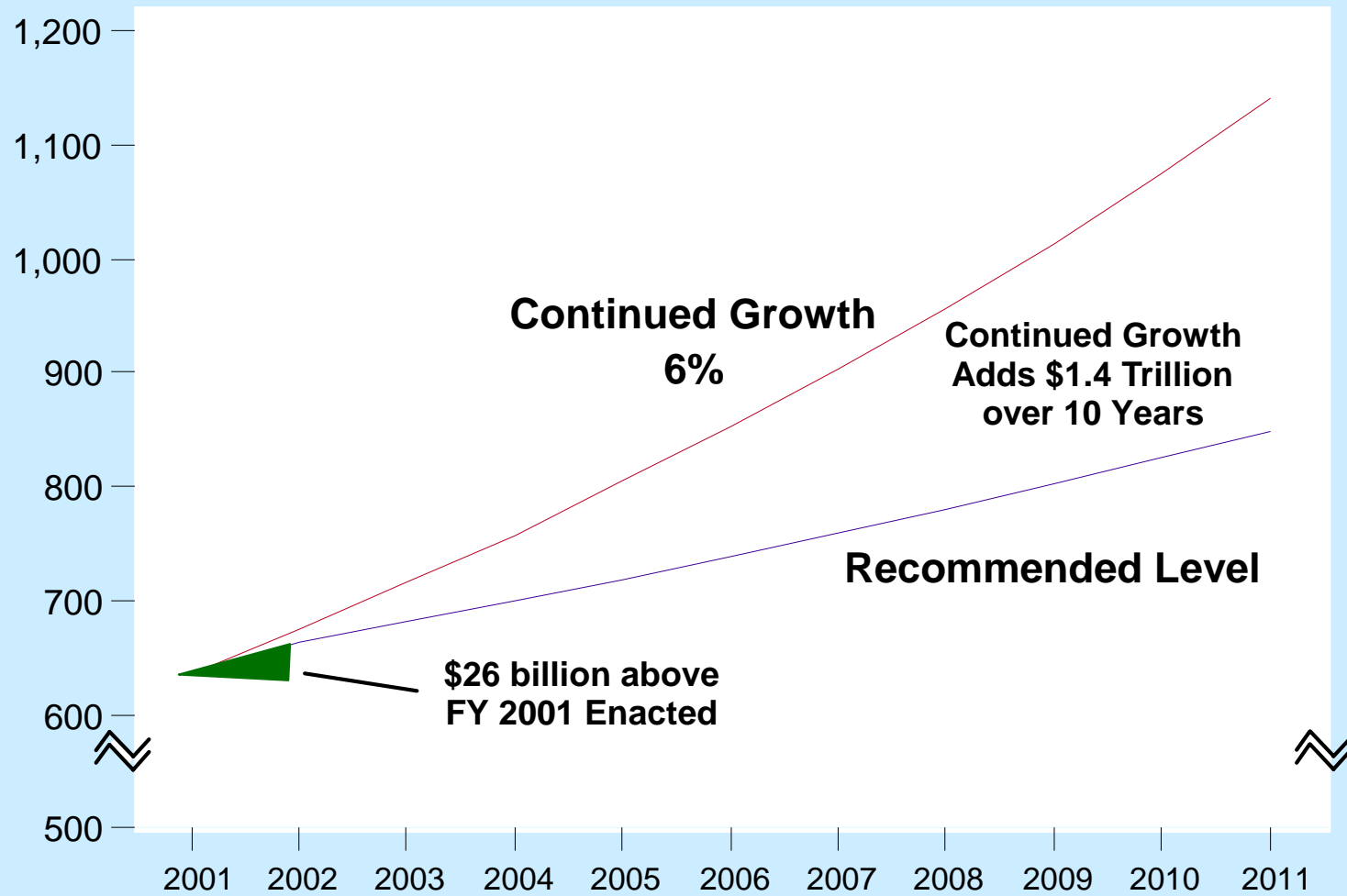
# President's Proposed Allocation of the 10-year Surplus

\$5.6 Trillion, 2002-2011



# Moderating the Growth of Spending

Budget authority in billions of dollars



Note: Six percent is average growth in budget authority over the past three years.

# 2002 Discretionary Spending

(\$ in billions)

## Additions

- Campaign initiatives +15.3
- Pay & programmatic +19.0
- National Emergency Reserve +5.6
- Technical adjustments +5.6

## Offsets

- Non-repetition earmarked funding -4.3
- Non-repetition one-time funding -4.1
- Program decreases -11.5

**Net Increase** +25.7 (4.0% increase)

# Campaign Initiatives

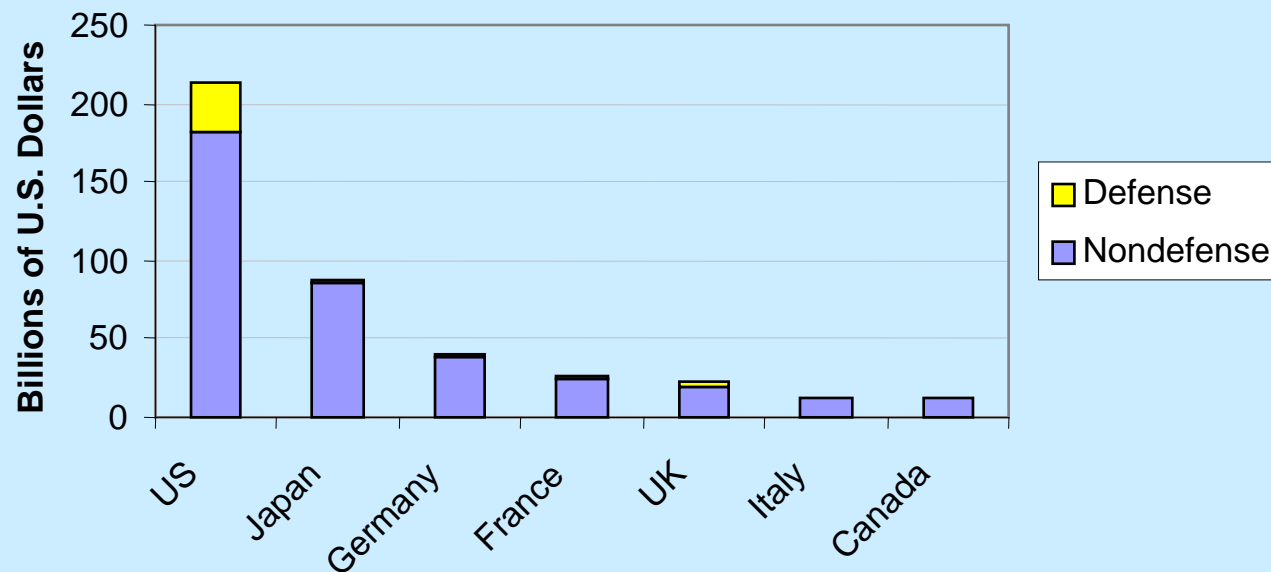
(\$ in billions)

• Strengthen and Reform Education	+3.6
• Revitalize National Defense	+4.4
• Invest in Health Care	+2.9
• Comprehensive Energy Policy & Protect Environment	+1.4
• Combat Crime and Drug Abuse	+1.4
• Champion Compassionate Conservatism	+0.7
• Assist Americans with Disabilities	+0.3
• Strengthen Families	+0.3
• Reform the Immigration System	+0.2
• Promote Volunteerism	+0.2
<b>Total</b>	<b>+15.3</b>

# National R&D Spending

National R&D Investment is Strong

G-7 National R&D Investment



U.S. National R&D spending in 1998 was greater than the combined R&D spending of the other G-7 countries

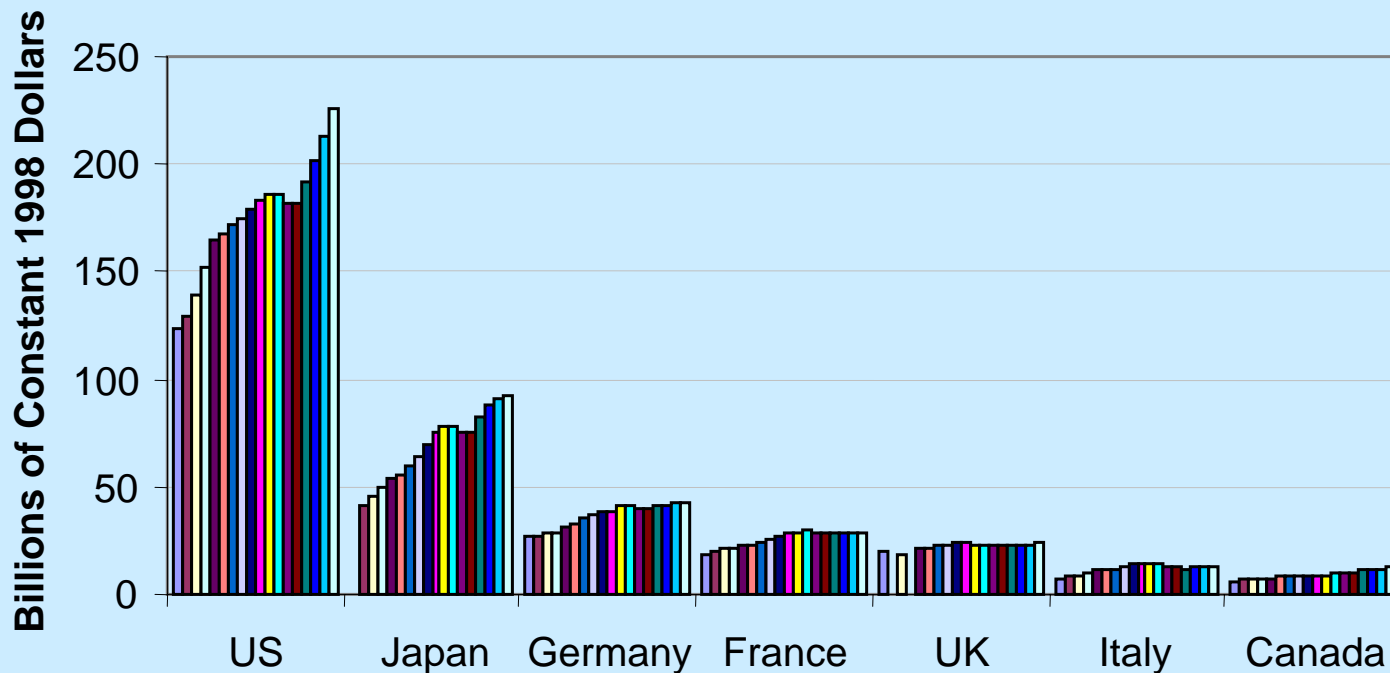
Source: National Science Foundation



# National R&D Spending

National R&D Investment is Strong  
...and Getting Stronger

R&D Spending 1981-1998

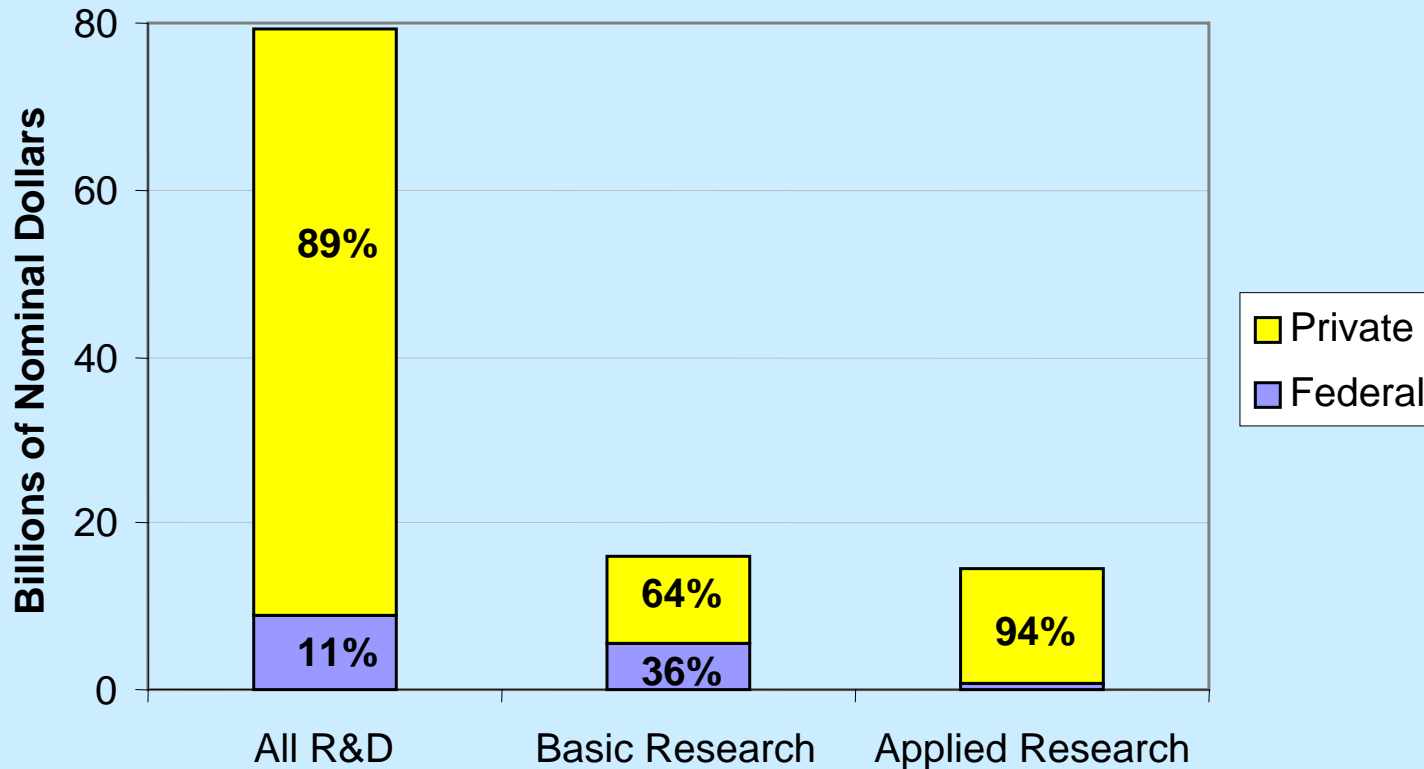


Source: National Science Foundation

# National R&D Spending

## Increase Is Due Mostly to Private Sector

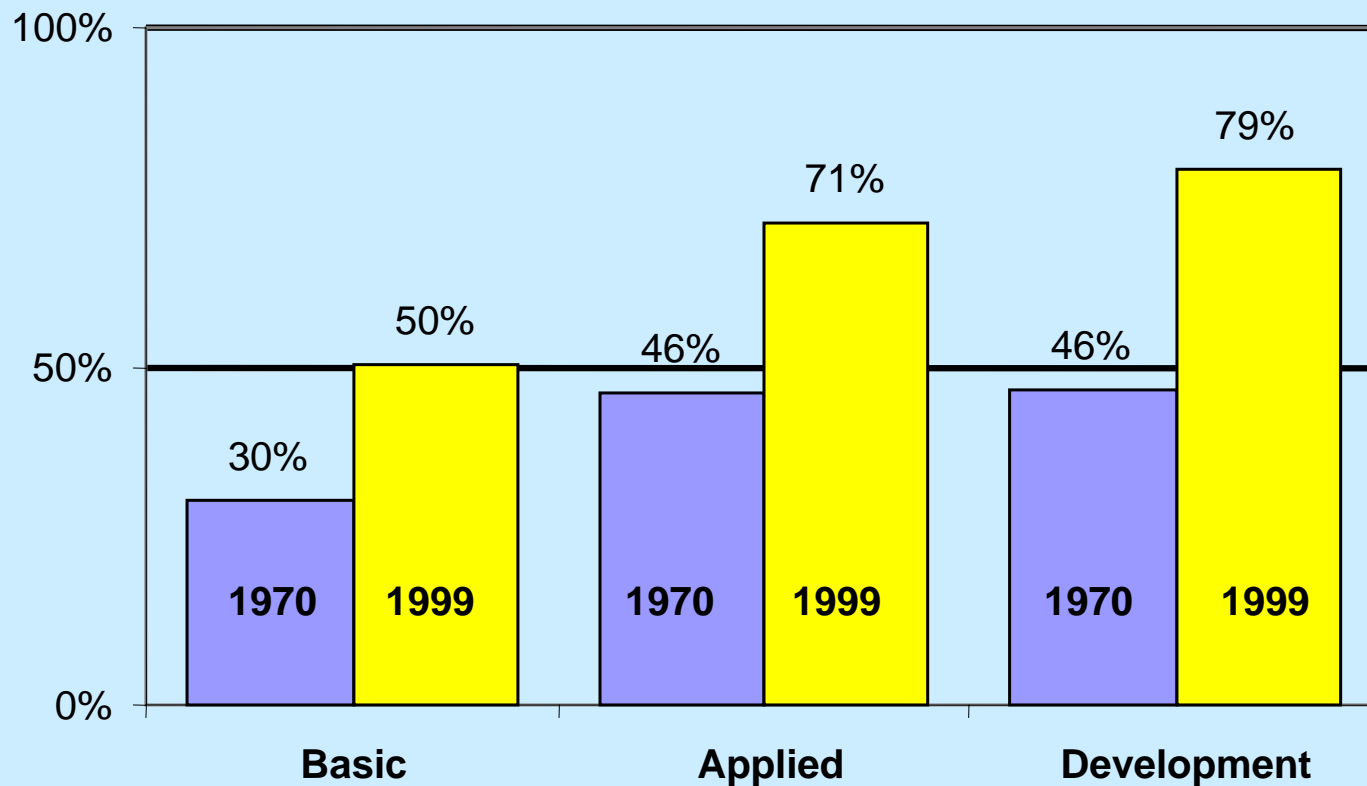
(Increase Shown from 1993-1999)



Source: National Science Foundation

# Private Sector R&D

Private Share of Total Has Increased Dramatically

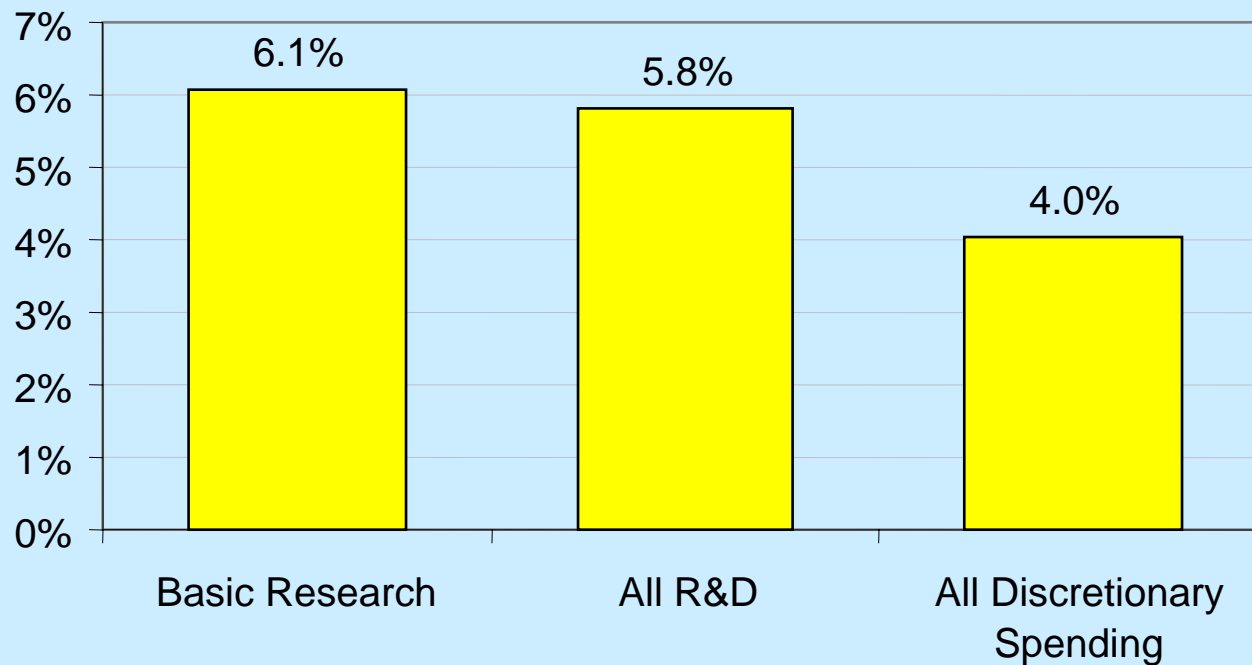


Source: National Science Foundation

# R&D a Clear Priority

## Federal R&D Proposal Outpaces All Other Discretionary Programs

**Increases in Budget Authority 2001-2002**



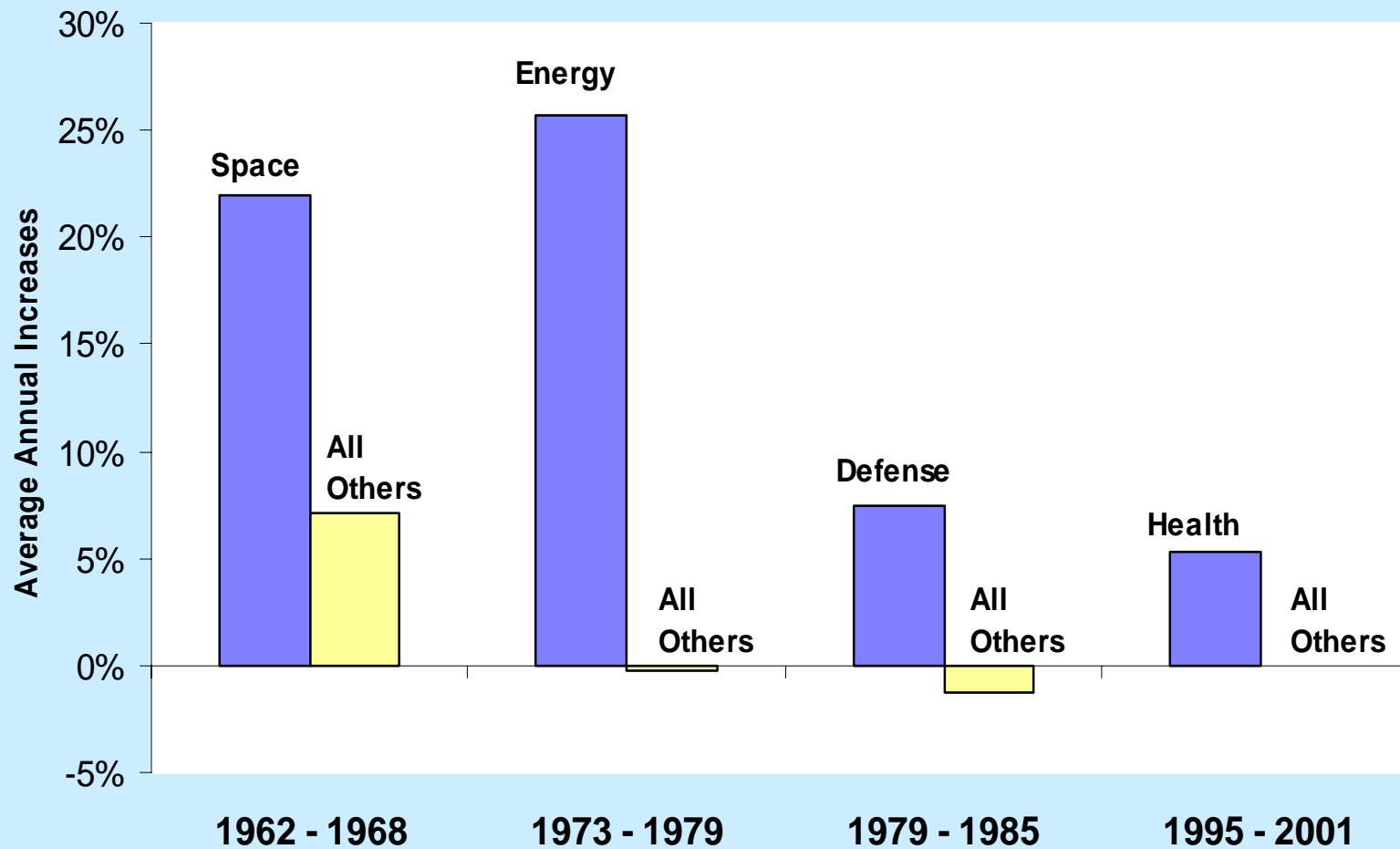
# Federal R&D in 2002

## An All-Time High

	2001 Estimate	2002 Proposed	Percent Change: 2001 to 2002
Basic Research	22,018	23,352	6%
Applied Research	20,734	21,553	4%
Development	42,594	45,954	8%
R&D Facilities and Equipment	4,664	4,394	-6%
<b>Total</b>	<b>90,010</b>	<b>95,253</b>	<b>6%</b>

# Historical R&D Priorities

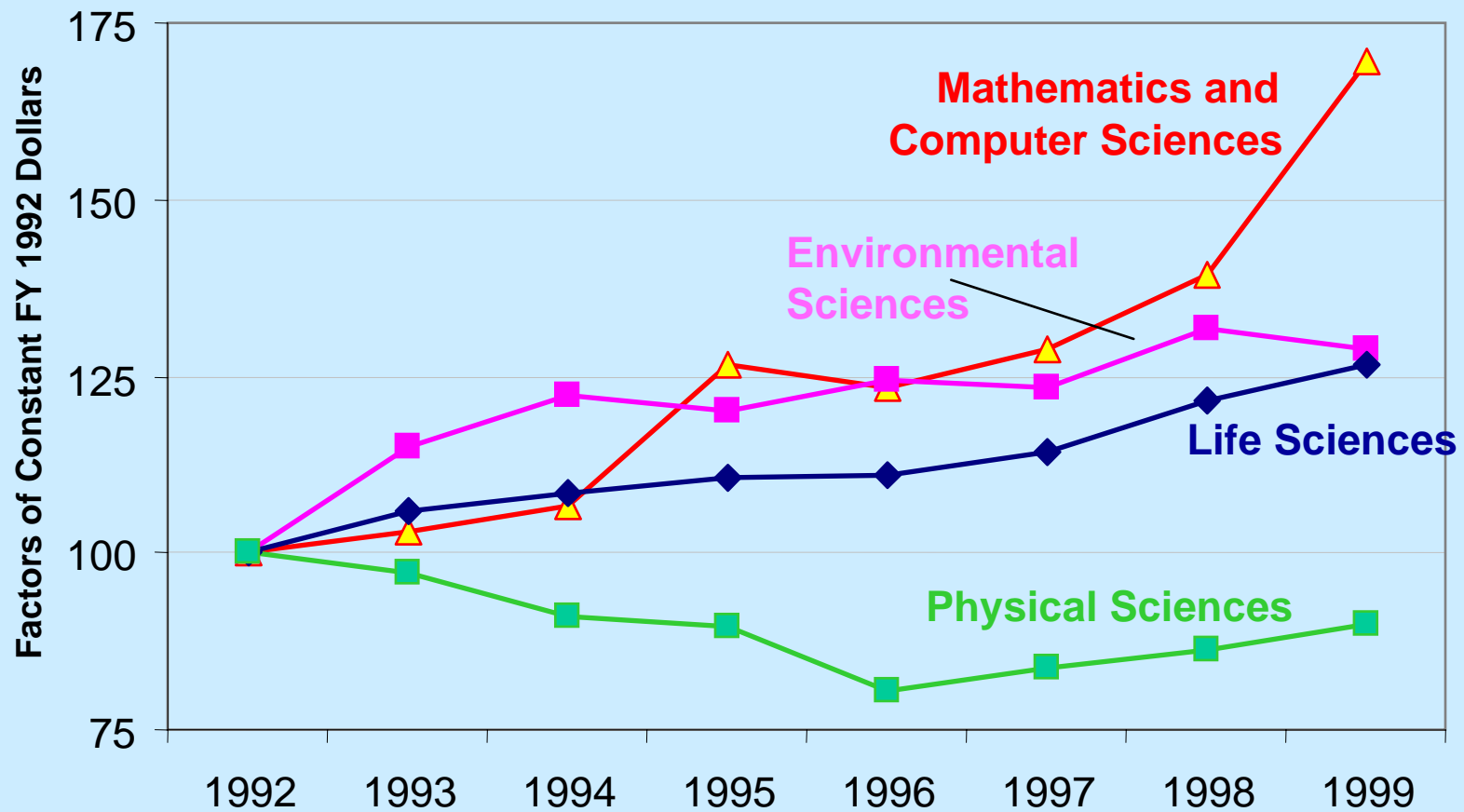
(obligations, in 1996 constant dollars)



Source: National Science Foundation

# R&D Balance

In Addition to Life Sciences,  
Other Disciplines Have Done Well



# FY 2002 R&D Highlights

## Important Priorities within the Agency Totals

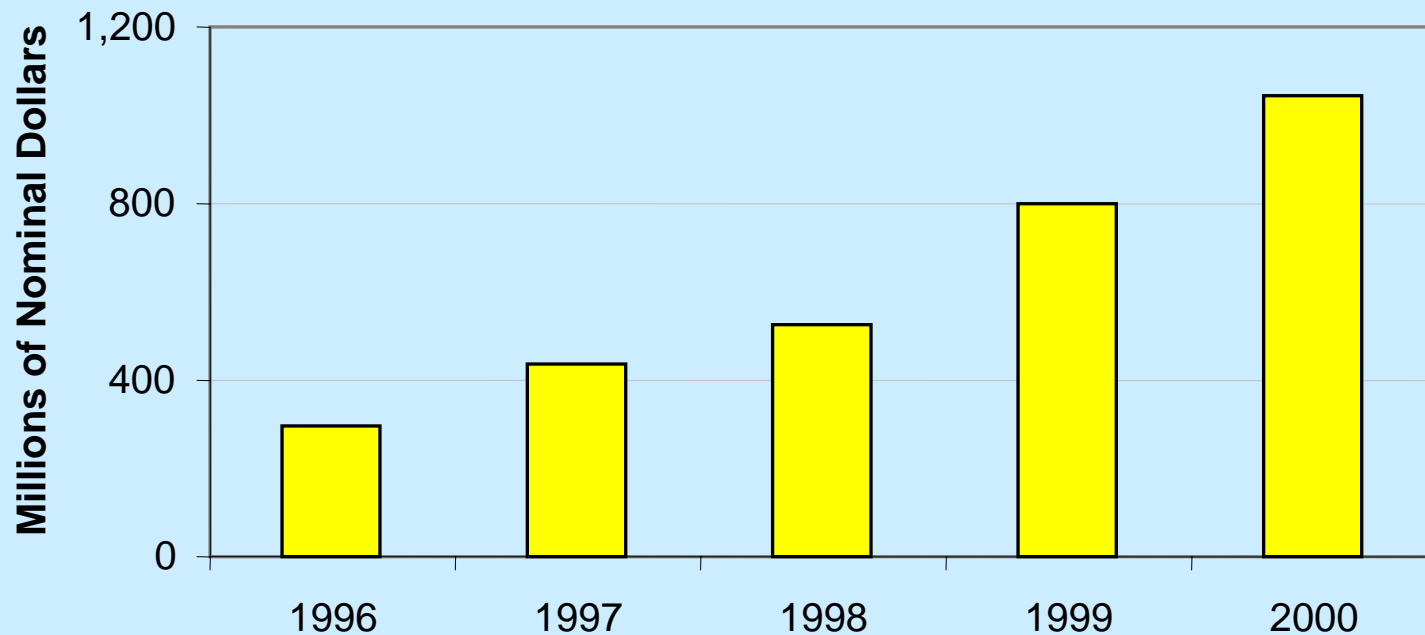
		2001 Estimate	2002 Proposed	Percent Change 2001-2002
<b>NIH</b>	- Biomedical research	20,361	23,112	14%
<b>DOD</b>	- R&D initiative	0	2,600	NA
<b>NASA</b>	- Space Launch Initiative	290	475	64%
	- Astronomical Search for Origins	123	194	57%
	- Earth Observing System Follow-on Program	55	130	136%
<b>NSF</b>	- Math and Science Partnership Initiative	0	200	NA
	- Mathematical Sciences	121	141	17%
	- Nanoscale Science, Engineering and Technology	150	174	16%
<b>USDA</b>	- Biotechnology	197	204	4%
	- Bioproducts and Bioenergy	240	249	4%
<b>DOC</b>	- Ocean Exploration	4	14	250%
	- National Polar-orbiting Operational Environmental Satellite	73	157	115%
	- NIST internal research	313	347	11%
<b>DOT</b>	- Highway Surface Transportation	73	114	56%
	- Intelligent Transportation Systems Initiative	41	62	51%
<b>Education</b>	- National Institute on Disability and Rehabilitation Research	100	110	10%
<b>Networking and Information Technology Research and Development*</b>		<b>1,929</b>	<b>1,969</b>	<b>2%</b>
<b>Nanoscale Science, Engineering and Technology*</b>		<b>446</b>	<b>482</b>	<b>8%</b>

\* Note: Final DoD R&D funding levels will be based on results of a Defense strategy review, currently underway. DoD FY 2002 R&D projections shown are extrapolated from FY 2001 appropriated levels, adjusted for inflation.



# Earmarks to Universities & Colleges

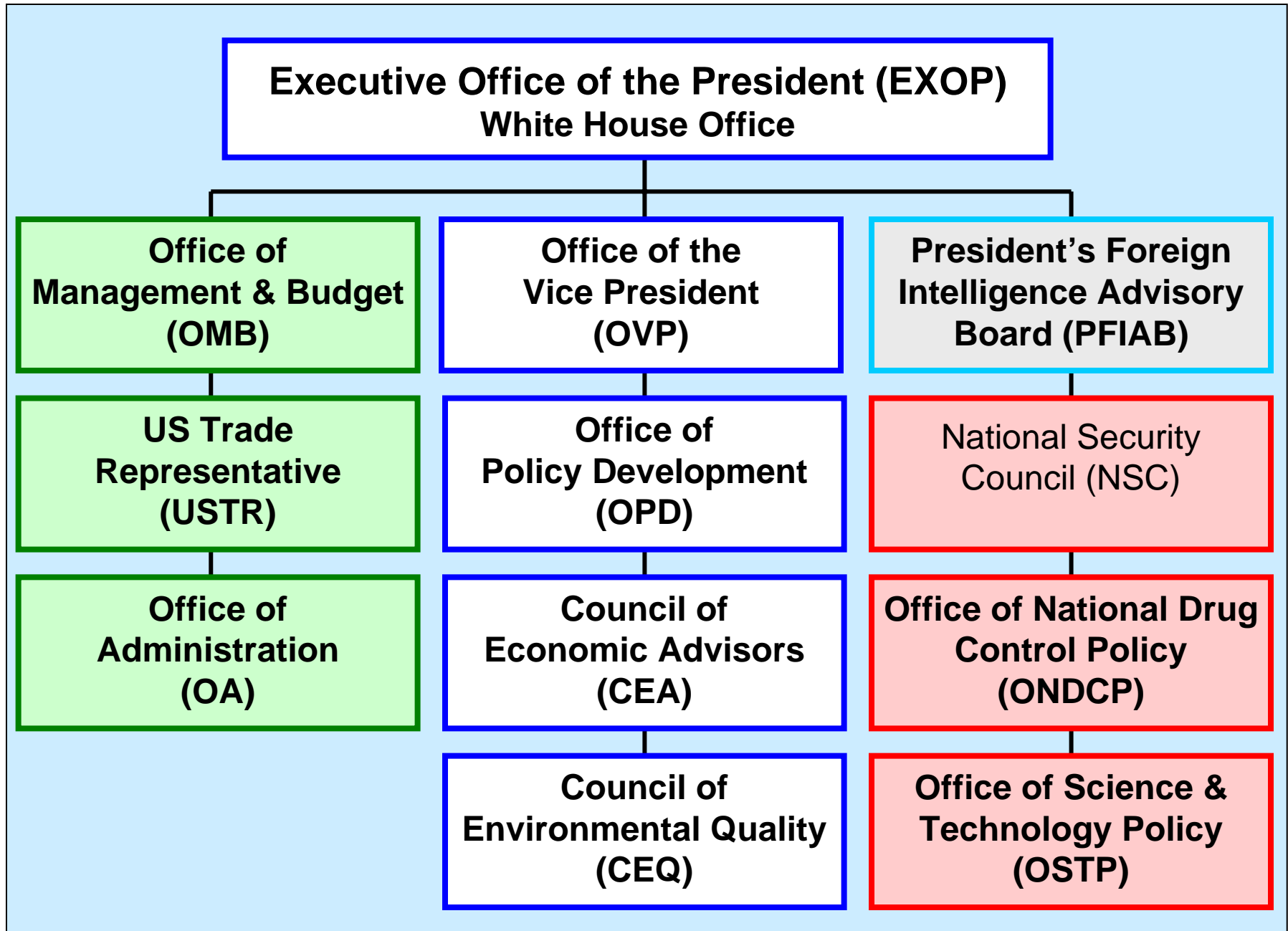
Increasing at Alarming Rate,  
Undermining Competitive, Merit-Based Efforts



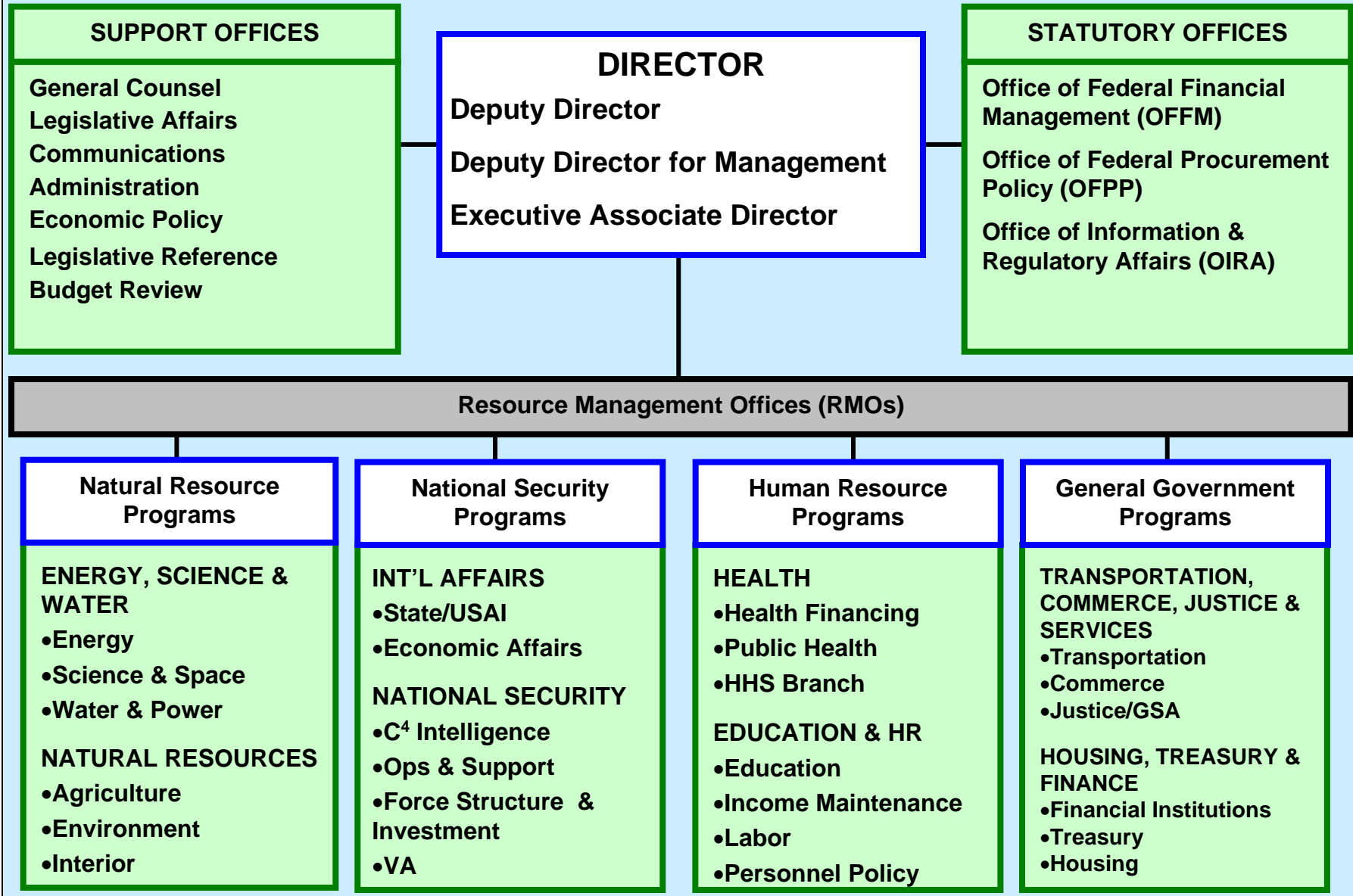
Source: Chronicle of Higher Education

# R&D Budget Summary

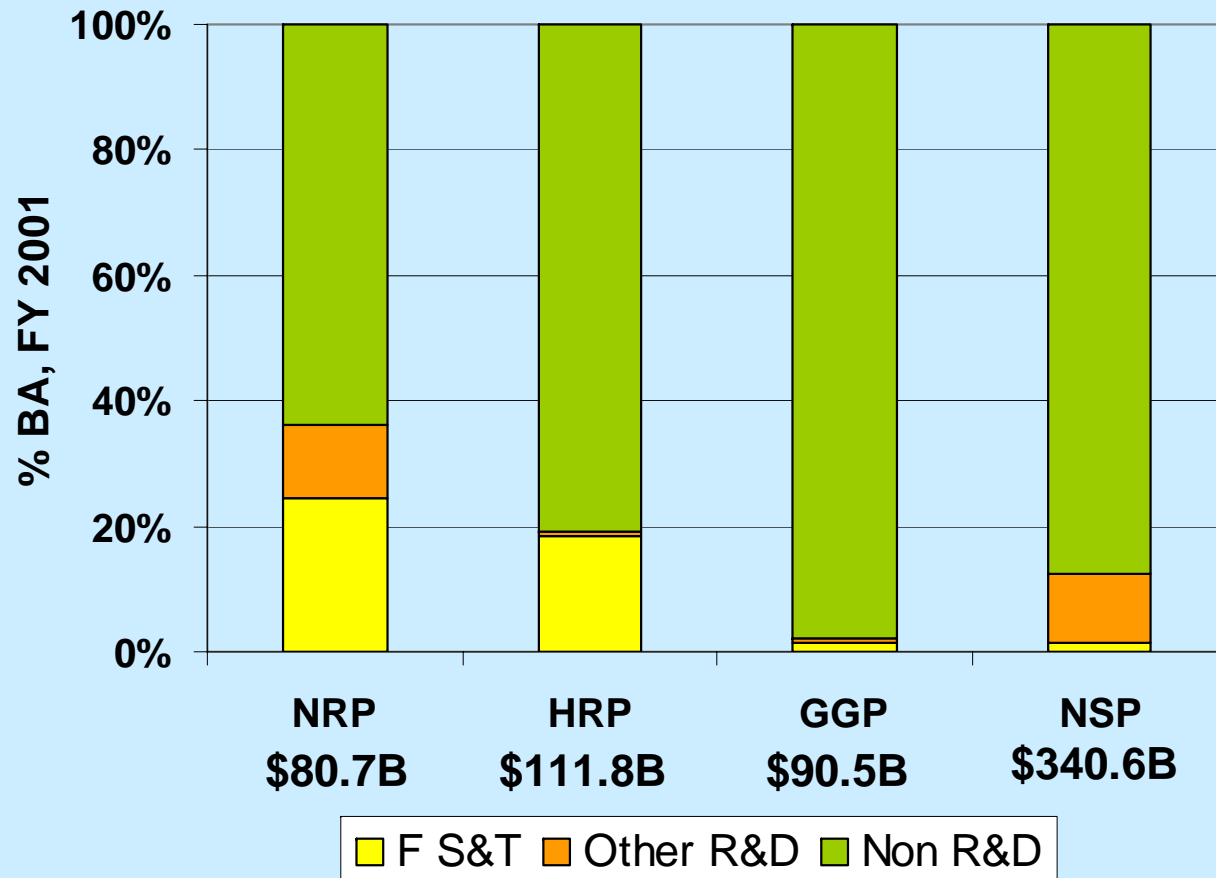
- Spurs Private R&D investments
  - R&E Tax Credit
- Sets Federal R&D as Priority
  - 6% growth (vs. 4% discretionary growth)
- Establishes commitment to health research
  - Doubles NIH by FY 2003
- Addresses Math/Science Education Needs
  - at least \$1 Billion over five years



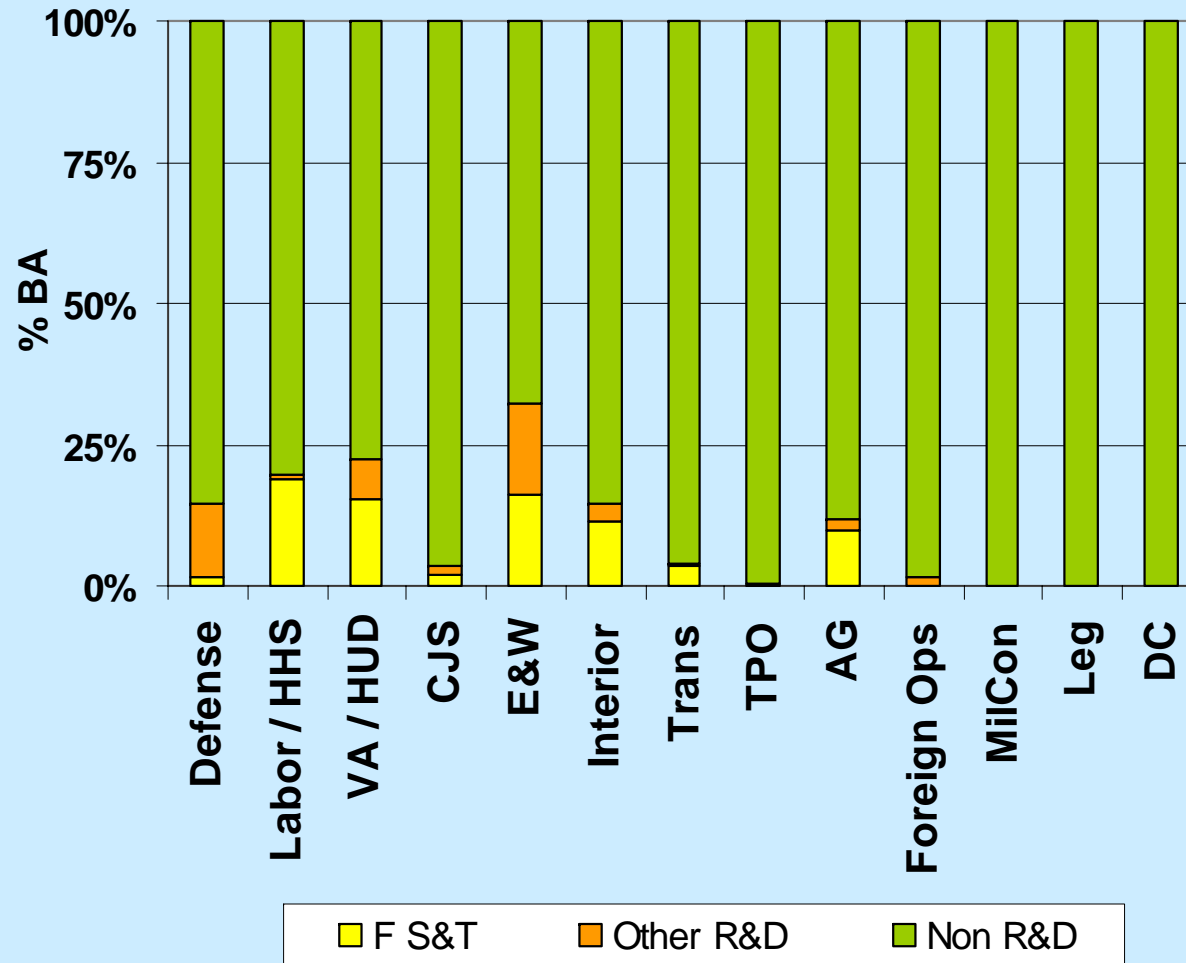
# Office of Management & Budget



# R&D by OMB PAD



# R&D by Appropriation Committee



# R&D Policy Issues for FY 2003 and Beyond

- What does “Balance” mean?
  - There will always be national priorities.
- How do policy officials know when the portfolio is balanced?
- What are the decision rules for adding new resources? Can we come up with “Raines Rules” for basic and applied research (see attached)?

## **“Raines Rules” for IT Investment**

IT Investments must:

- Support core/priority mission functions,
- Be undertaken because no alternative private sector or govt. source can efficiently support the function,
- Support work processes that have been redesigned to reduce cost, improve effectiveness and make maximum use of off-the-shelf technology,
- Demonstrate a projected return on investment that is clearly equal to or better than alternative uses of public resources
- Be consistent with existing architectures,
- Be implemented in a manner that reduces risk,
- Be implemented in phased chunks, each with independent benefits, and
- Employs a performance-based acquisition strategy that appropriately allocates risk between govt. and contractor.