

# NIH at the Crossroads: Strategies for the Future

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# NIH Budget Facing a “Perfect Storm” in 2006



- Federal & Trade Deficits
- Defense and Homeland Security needs
- Katrina
- Pandemic flu
- Post- Doubling effects
- Physical Sciences focus
- Biomedical research inflation- 3 to 5%

*Competition for funds from the NIH and other sponsors, intensifying year by year, now stands at an unprecedented level, and shows no sign of abating. Never before have so many established investigators faced so much uncertainty about their longevity as active scientists. Never before have so many novices faced so many disincentives to entering or continuing a research career.*

Dr. William F. Raub, NIH Associate Director for Research and Training, strategy paper, 1982



# What Is Really Happening?

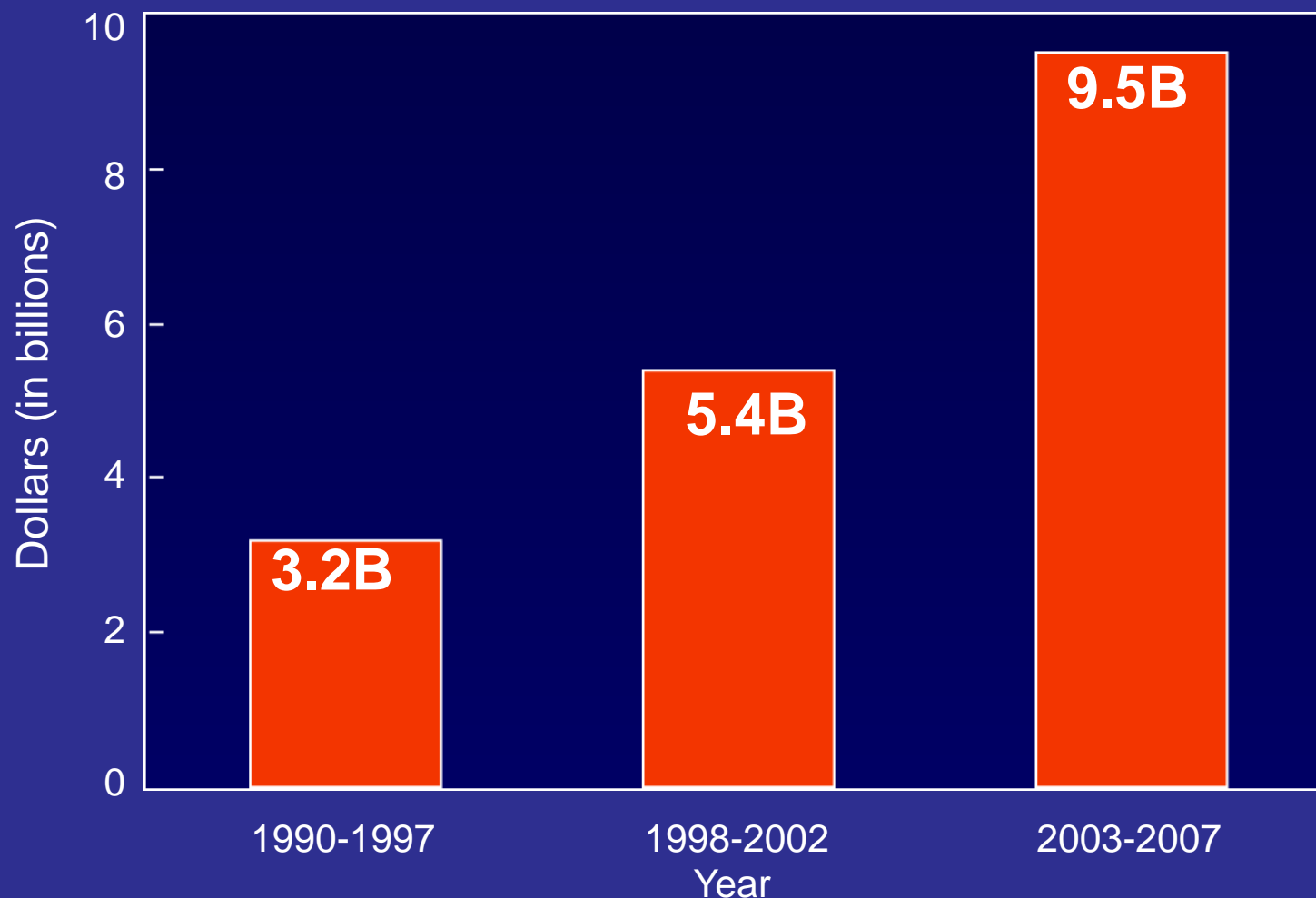
## 3 Fundamental Drivers

- Large capacity building throughout U.S. research institutions and increase in number of new faculty
- Appropriations below inflation after 2003
  - Increases of 3 % in '04, 2% in '05 and 0% in 06
  - Biomedical Inflation in 2004 was ~ 5%
- Budget cycling phenomenon





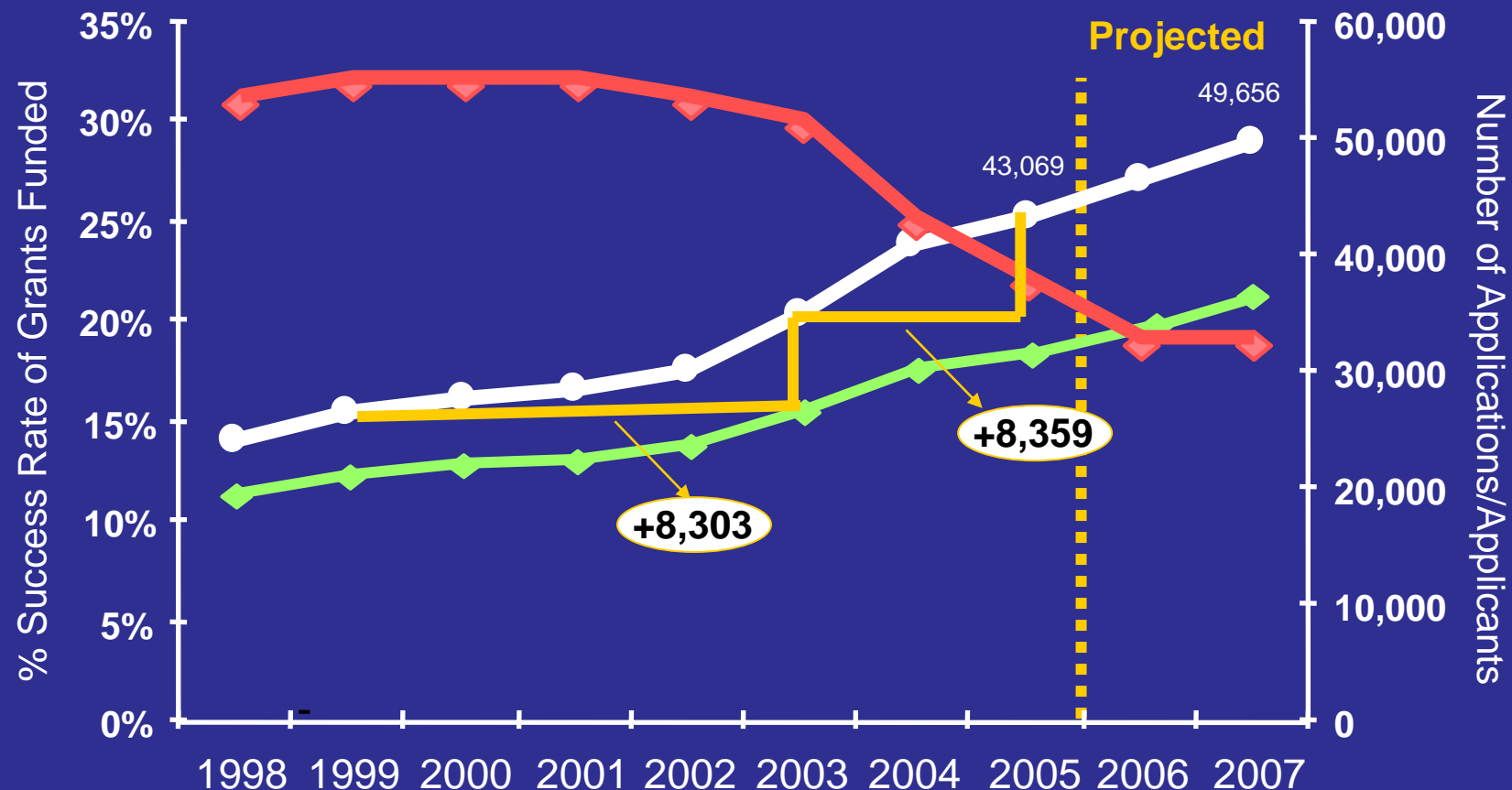
# Investment in Research Facilities at U.S. Medical Schools



AAMC – Survey of Research Facility Investments (99 of 125 AAMC Member Schools)  
\* Data Based on AAMC Faculty Roster

# New Grant Applications, Applicants and Success Rates

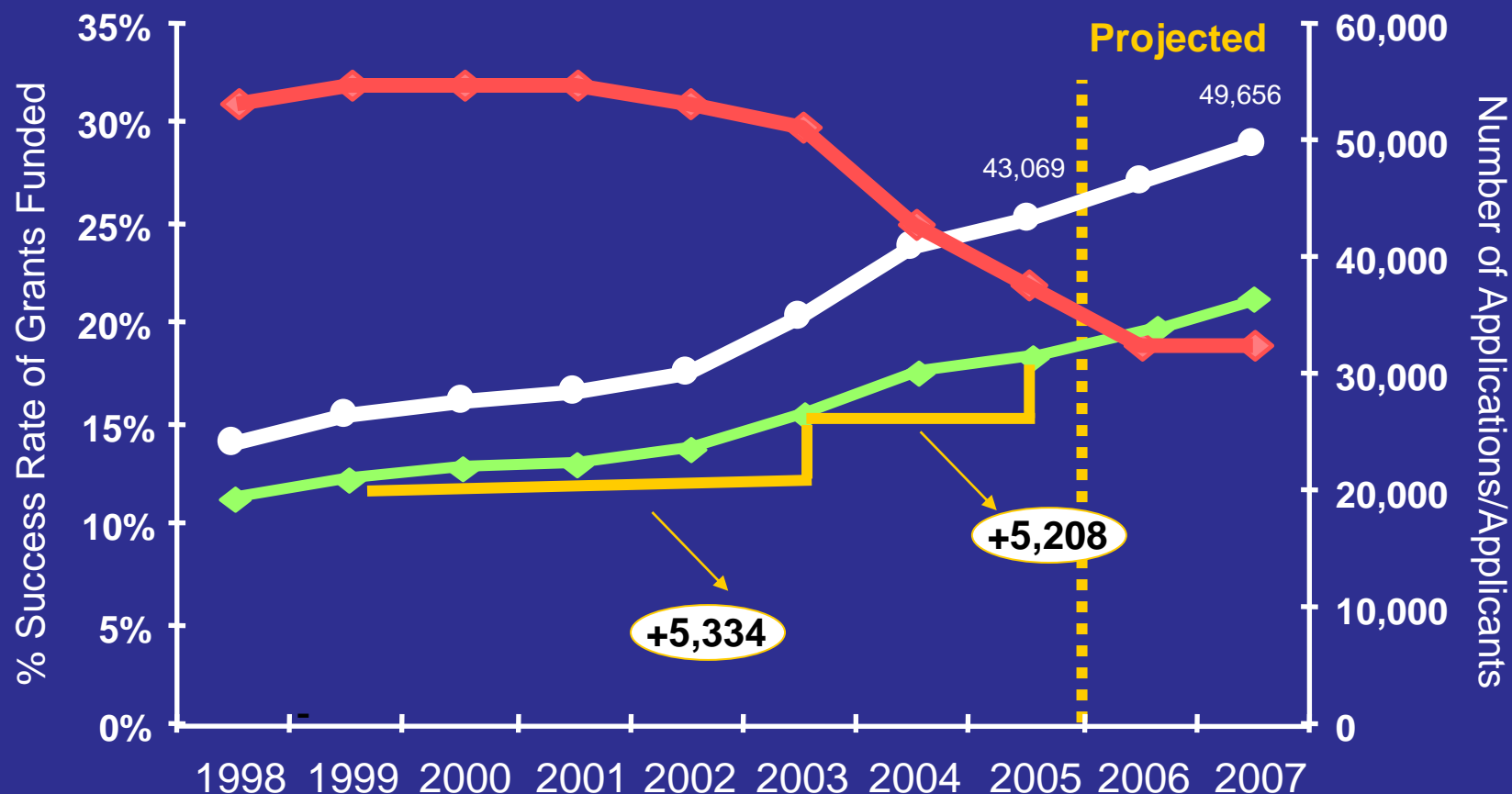
*During and After Doubling Period*



**Success Rates**
**Applications**
**Applicants**

# New Grant Applications, Applicants and Success Rates

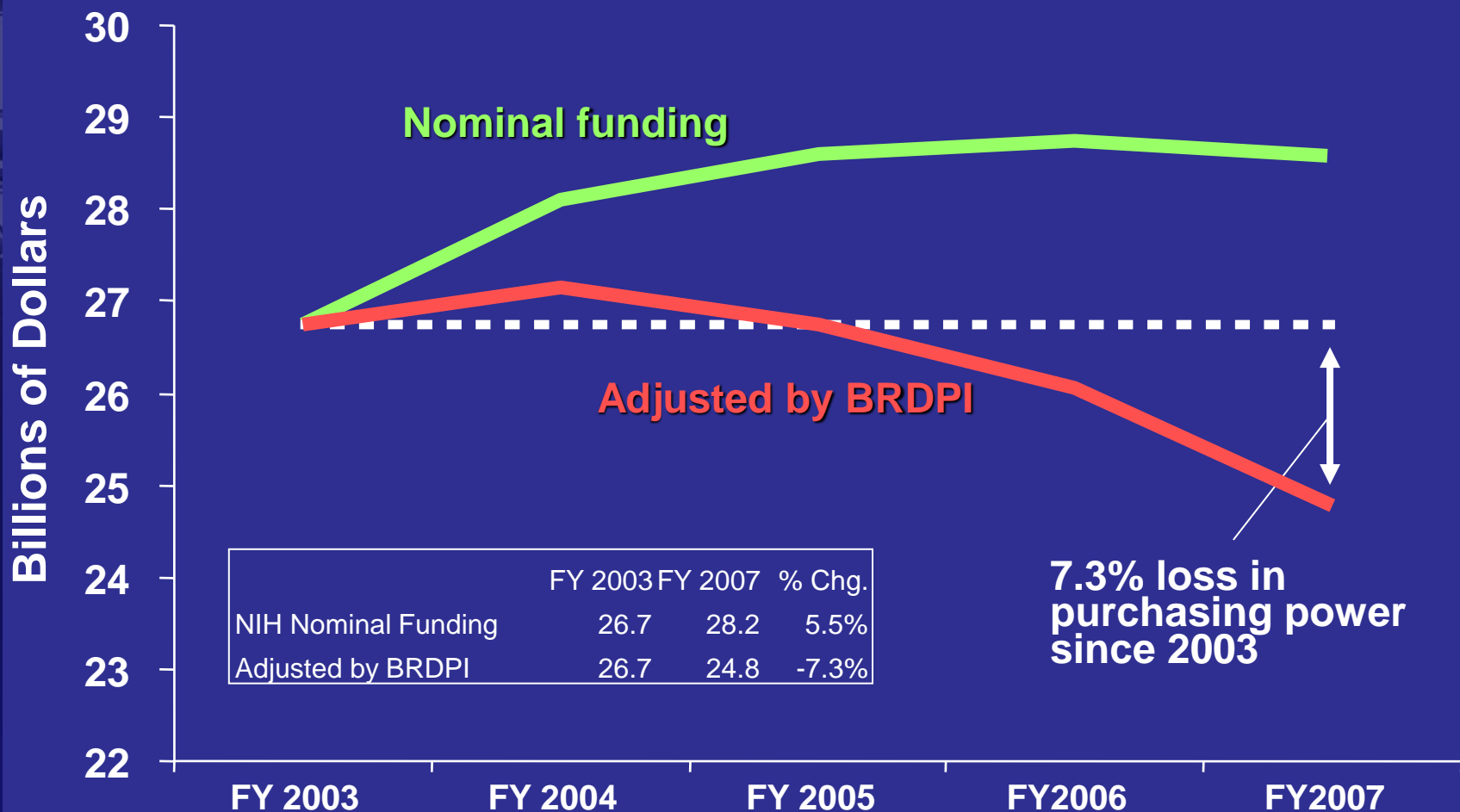
*During and After Doubling Period*



◆ Success Rates
 ● Applications
 ◆ Applicants

# Inflation Eroded Gains in NIH Funding

Real and Nominal NIH Funding Levels Since 2003

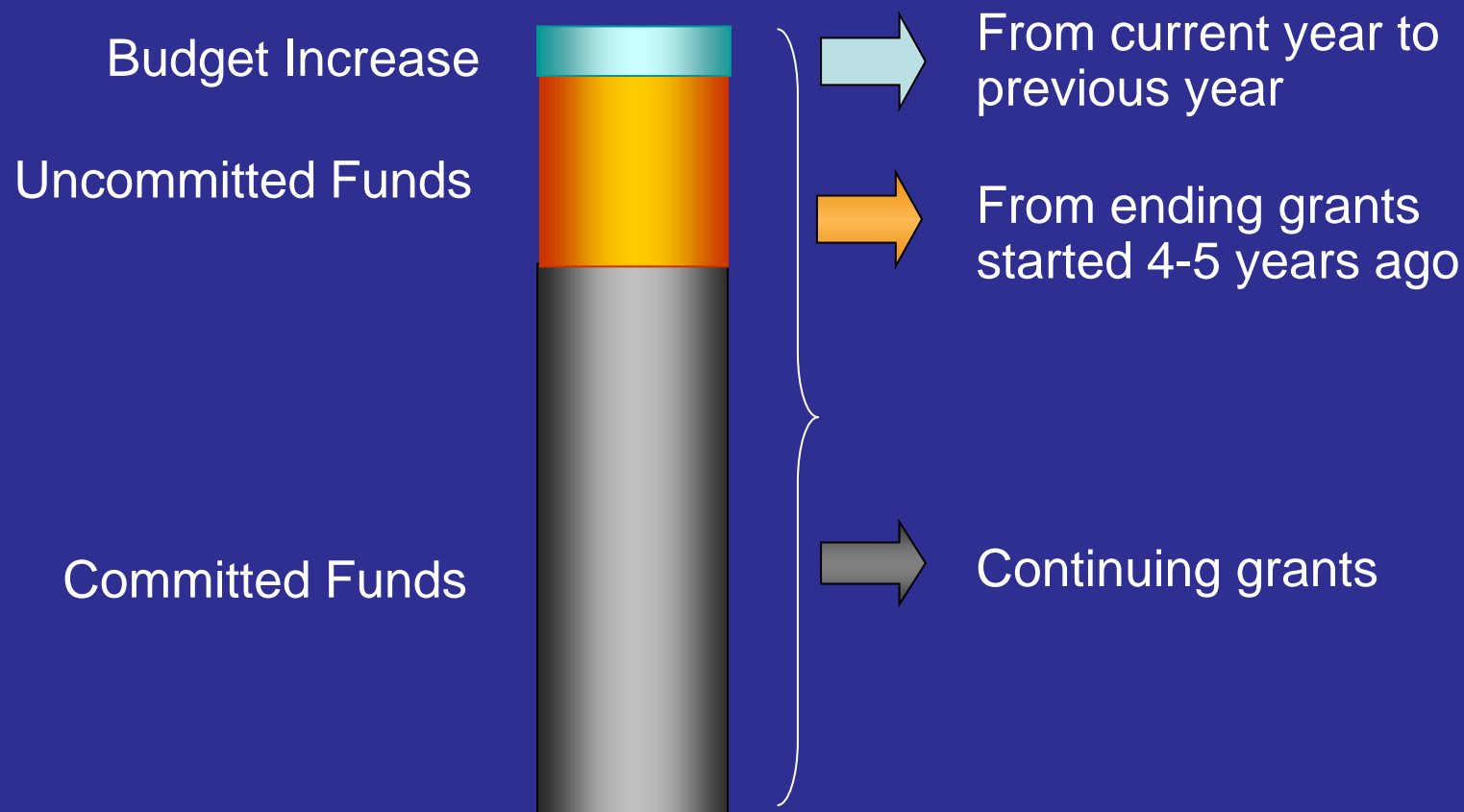


Note: BRDPI is the Biomedical Research and Development Price Index



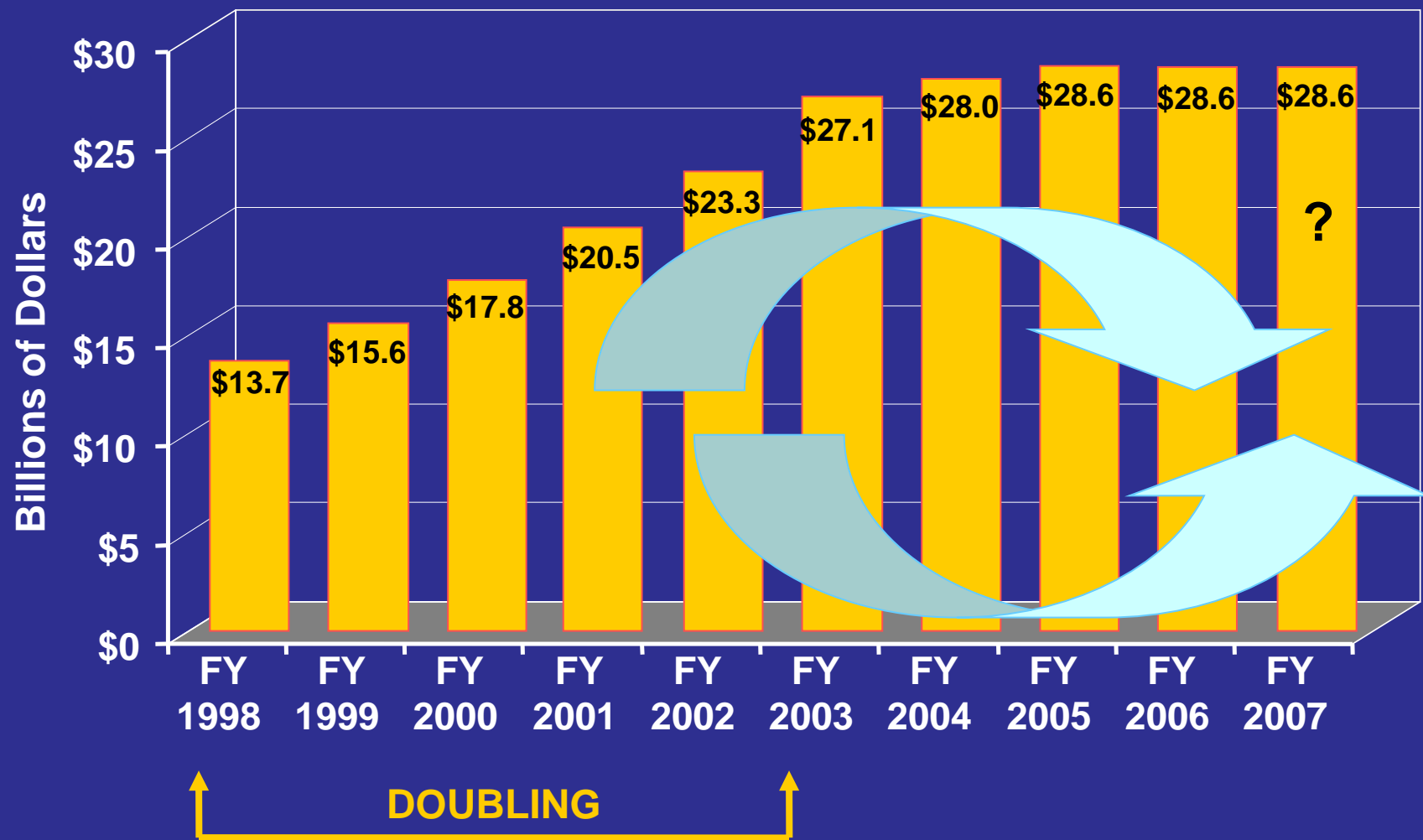
# The Budget Cycling Phenomenon:

## *What Funds are Available in any One Year?*



**NIH Appropriations**

# NIH Congressional Appropriations



# The Bottom Line:

*Demand for Grants “Took Off” Just as NIH Budget Was “Landing!”*

Applications



Budget

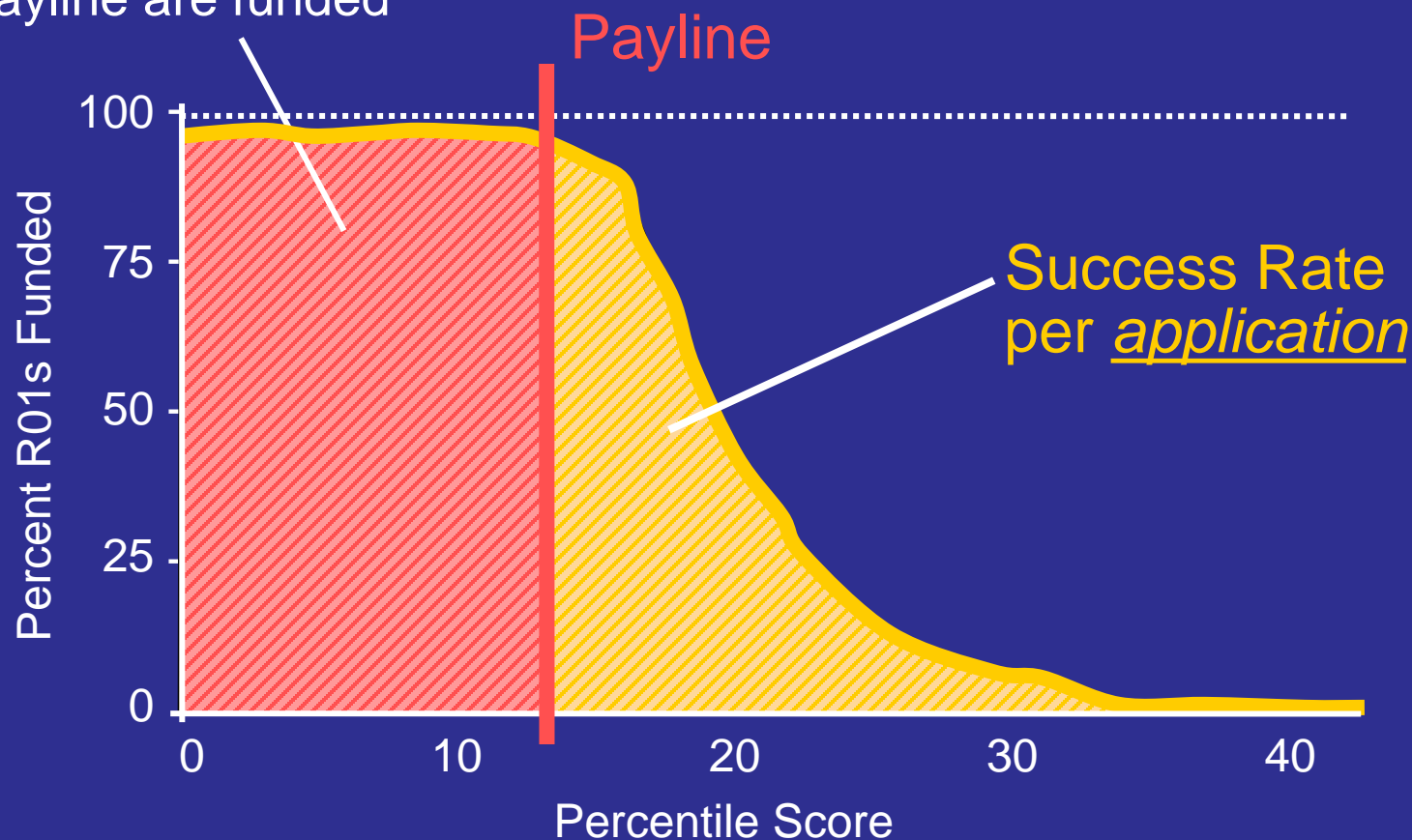


- Post doubling “boom” in applications has led to demand/supply imbalance
- NIH managed well despite small increases in 2004 (2.9%) and 2005 (2%) but flat 2006 made it difficult to adjust
- ~80% of success rate drop is due to increased demand for grants
- ~20% of drop is due to increased costs of grant and inflation effects.
- Budget cycling effect will improve demand vs supply of grants in 2007

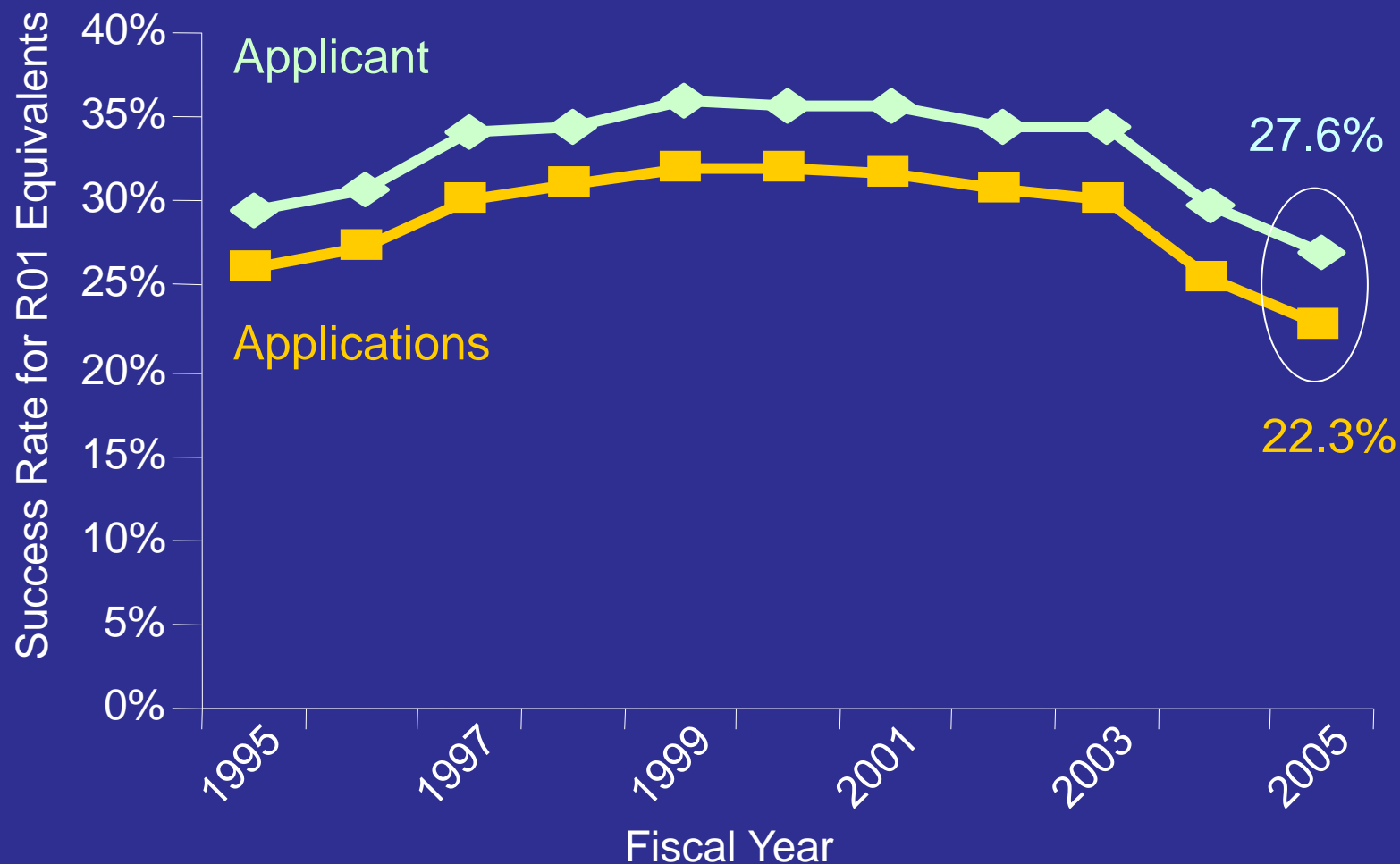
# The Question on Everyone's Mind: *What are MY chances of being funded?*

# Payline Is Not Funding Cut-off Line

>99% of grants under the payline are funded



# Success Rate per Application Understates Funding Rate per Applicant

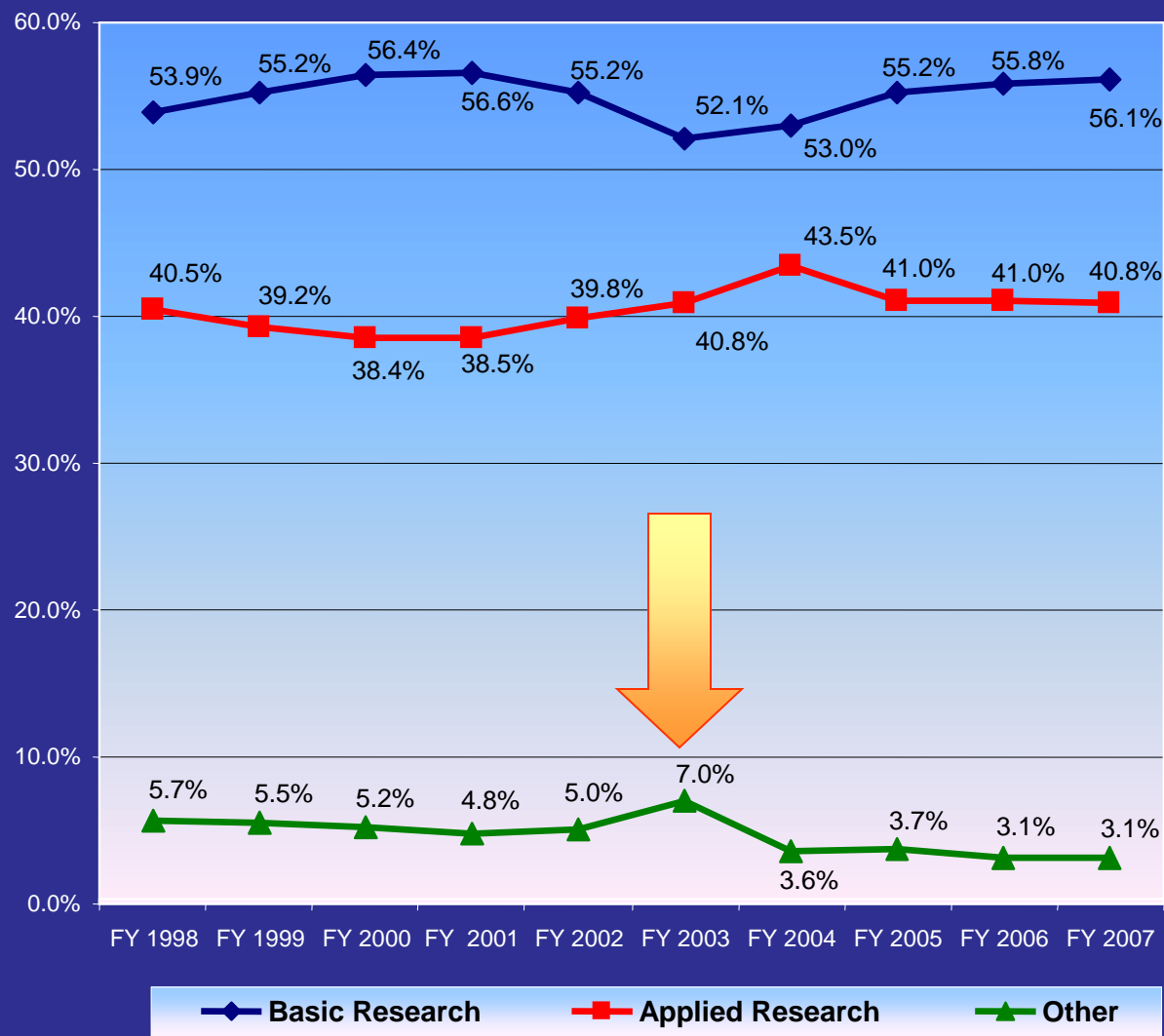




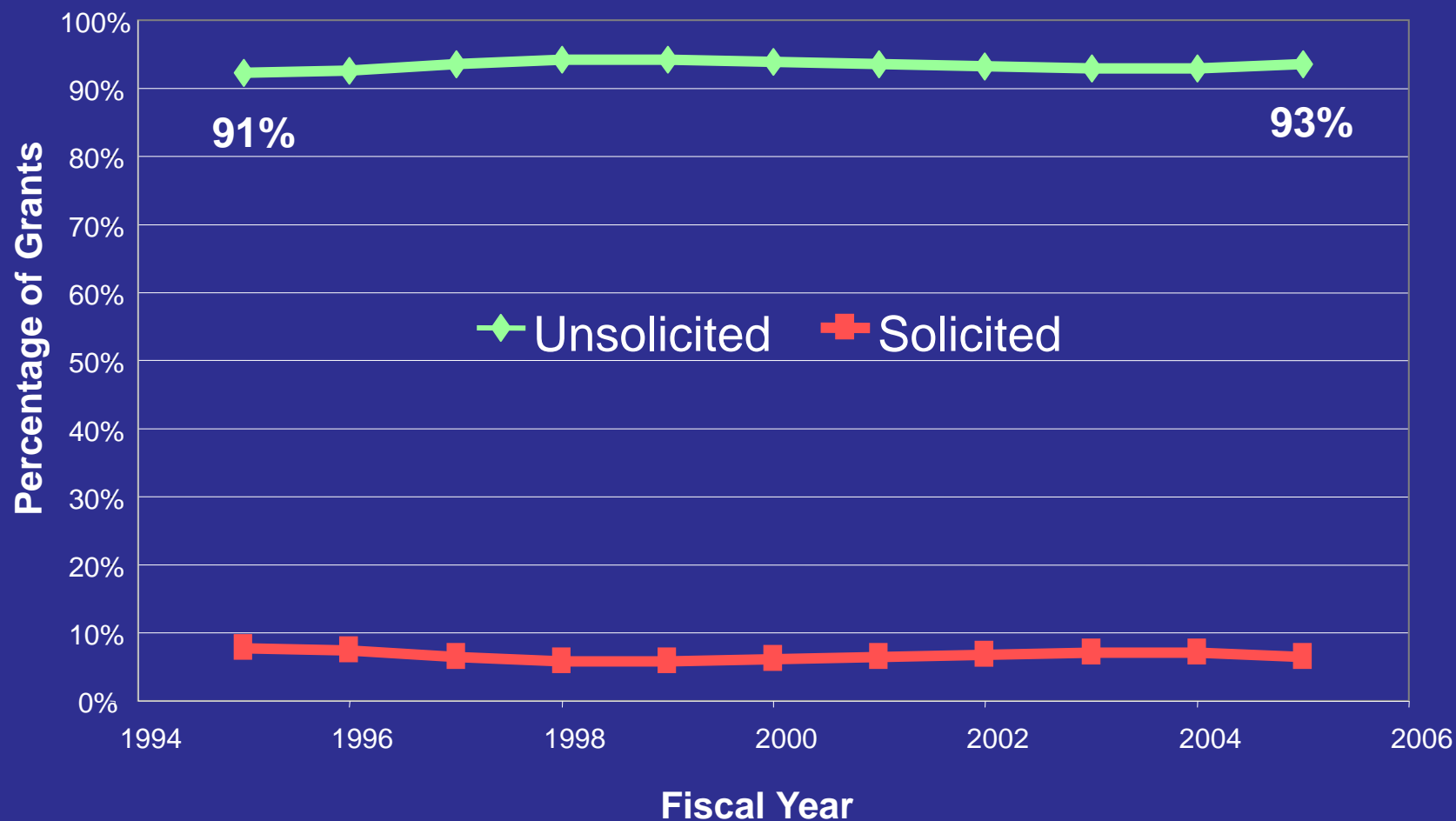
# Common Misperceptions



# Common Misperception: NIH is Over-emphasizing Applied Research

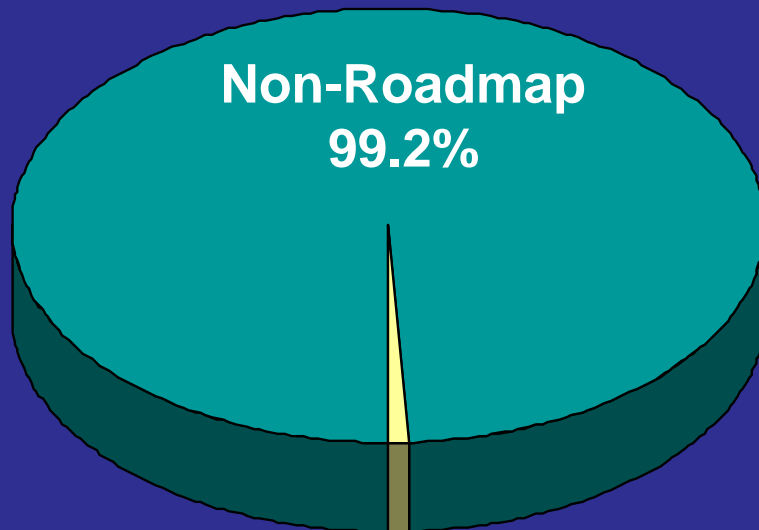


# Common Misperception: NIH Shifting Towards Solicited Research with too many RFAs



# Common Misperception: NIH Roadmap is Shifting Major Funds Away from Grant Pool

FY2005 Request = \$28.757B



Roadmap  
0.8%

- Developed to increase synergy across NIH
- Not a single initiative but over 345 individual awards in FY 2005, 133 institutions, 33 states:
  - 40% basic
  - 40% translational
  - 20% high risk



# But Roadmap takes resources away from Us!

- Because NCI is the largest institute we contribute the most and it is a tax on Cancer Research!
- Both NIH and NCI have analyzed that issue and found that NCI grantees have consistently received more than NCI contributed to the Roadmap
- This is not including cancer research performed by non NCI grantees



# FY 2005 Roadmap Awards to NCI Grantees

	Total Number of Awards	Total Amount of Awards
Total 2005 Roadmap	352	\$240M
TOTAL (NCI grantees)	53 (15%)	\$42.1M (18%)
Pathways to Discovery	30	\$28.8M
Research Teams	17	\$8.2M
Clinical Research	6	\$5.1M

**NCI 2005 Investment in Roadmap =  
\$30.5M (13%)**



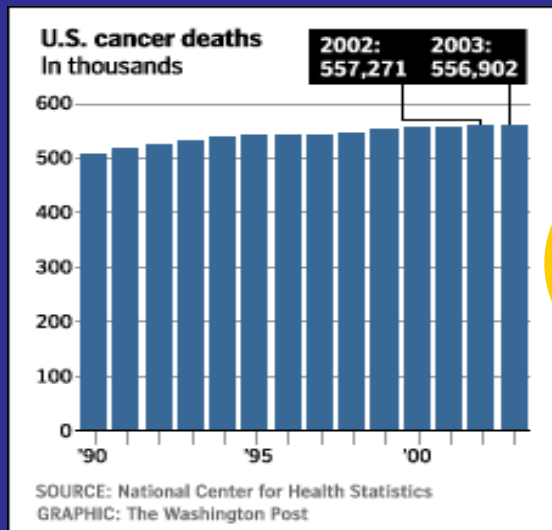


# Where Do We Go From Here?

# NIH Must Develop Adaptive Strategies: Key Principles

- Protect core values and mission: *Discovery and New Knowledge*
- Protect the future: New Investigators
  - Pathway to Independence Program
  - Institutes and Centers efforts to assist new investigators
- Manage the key drivers
  - Supply/demand of grants
- Proactive communications
  - A unified message about value of NIH's investment and need for sustainability
- Promote NIH's vision for the future

# Cancer



- For the first time in recorded history, annual cancer deaths in the United States have fallen

Average investment  
per American  
**~\$8.60**  
per year

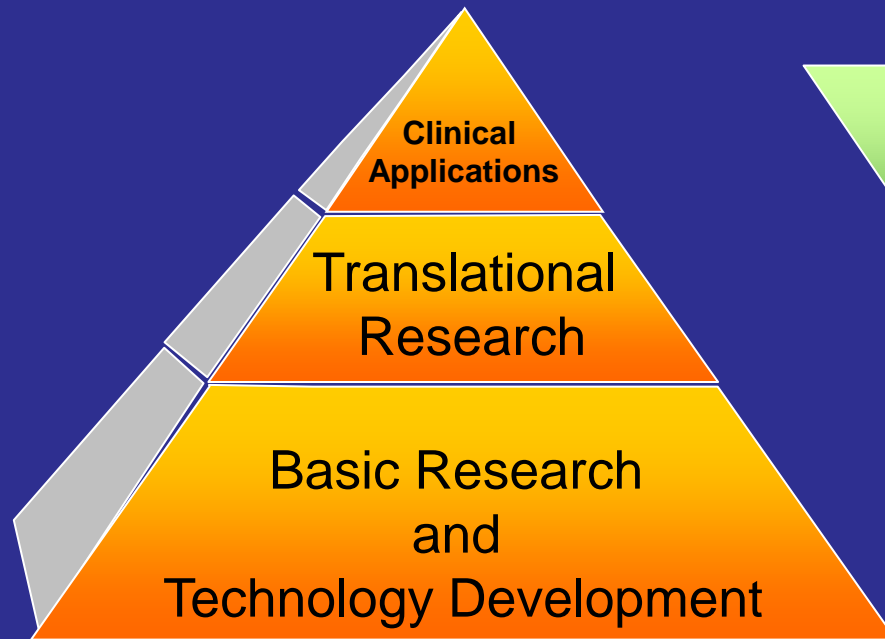
- Improved effectiveness of early detection and screening

30-year investment  
per American:  
**~\$260**  
Total

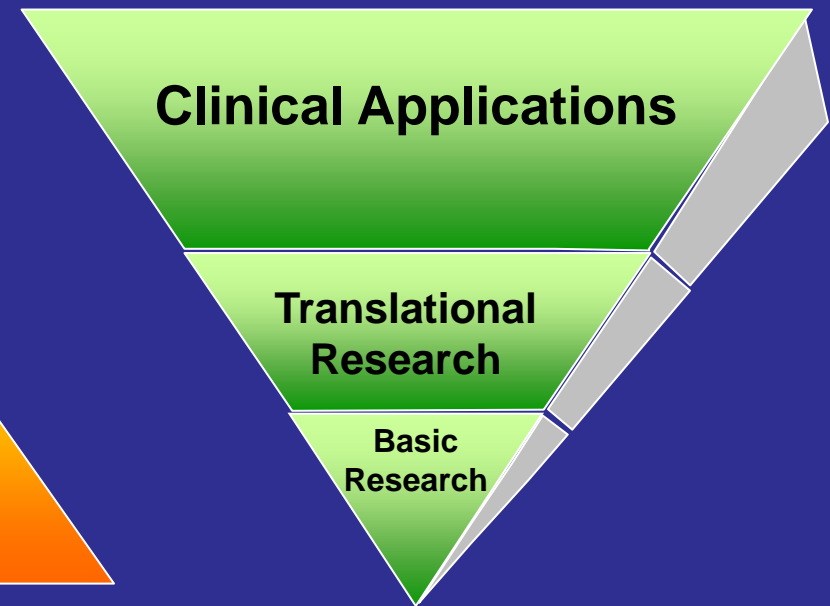
- While the number of new cancer diagnoses is doubling, new minimally invasive treatments for cancer multiplied

- New drugs developed for cancer prevention

# Balanced National Biomedical Research Portfolio



NIH



Private Sector

# Protecting the Future: Pathway to Independence Award



## Enhanced Support for New Investigators- PATHWAY TO INDEPENDENCE AWARD

- Five years of support consisting of two phases
- Phase I provides 1-2 years of mentored support for advanced post doctoral fellows- 90k per year
- Phase II provides up to 3 years of independent RO1 equivalent research support- 250k per year

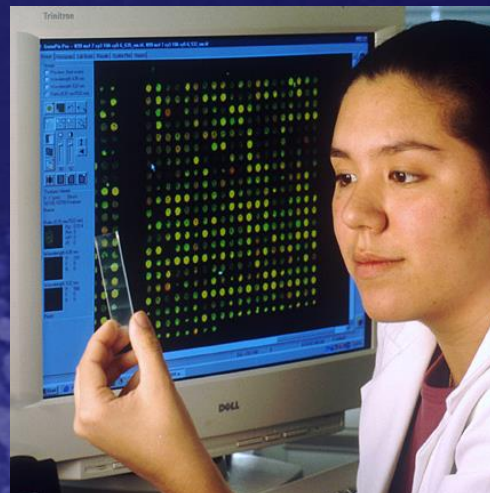


# Central Themes in NIH Communications: *A Vision for the Future*





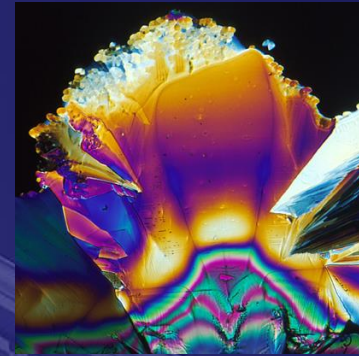
# The Future Paradigm: *Transform Medicine from Curative to Preemptive*



Predictive ↔ Personalized ↔ Preemptive



*Participatory*



# NIH

*Transforming medicine and health through discovery*

