NIH at the Crossroads: Myths, Realities and Strategies for the Future

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NIH Budget Facing a "Perfect Storm" in 2006

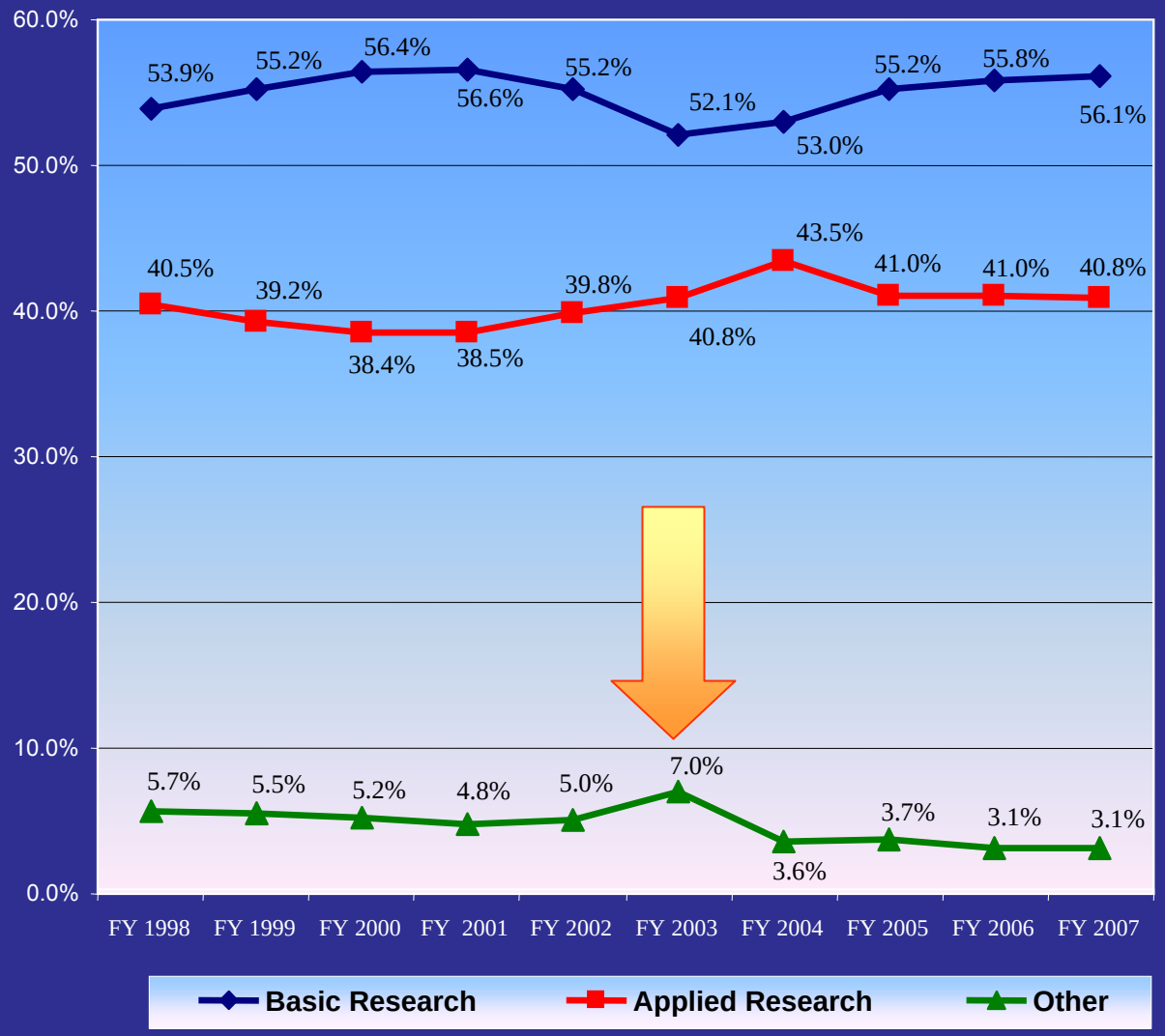
- Federal & Trade Deficits
- Defense and Homeland Security needs
- Katrina
- Pandemic flu
- Post- Doubling effects
- Physical Sciences focus
- Biomedical research inflation- 3 to 5%

NIH Budget:
Myths and Realities…

What is Driving Success Rates?

- Is NIH placing more emphasis on applied as opposed to basic science
- Is NIH shifting towards solicited research (RFAs and PAs) at the expense of unsolicited, investigator-initiated research?
- Is it due to the Roadmap?

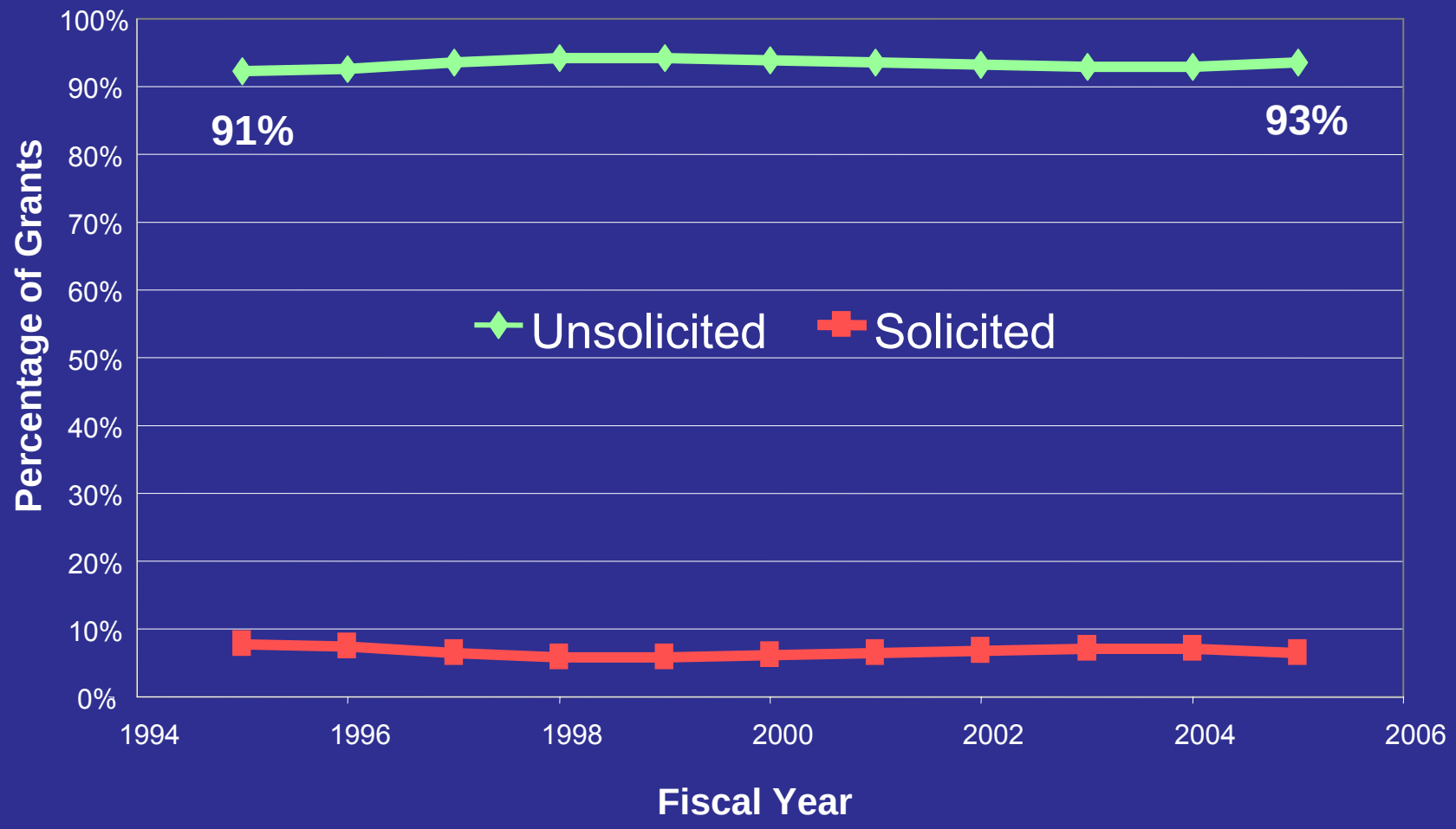
Basic and Applied Research



What is Driving Success Rates?

- Is NIH placing too much emphasis on translational science at the expense of basic research?
- Is NIH shifting towards solicited research (RFAs and PAs) at the expense of unsolicited, investigator-initiated research?
- Is it due to the Roadmap?

Grants: Unsolicited Far Outnumber Solicited



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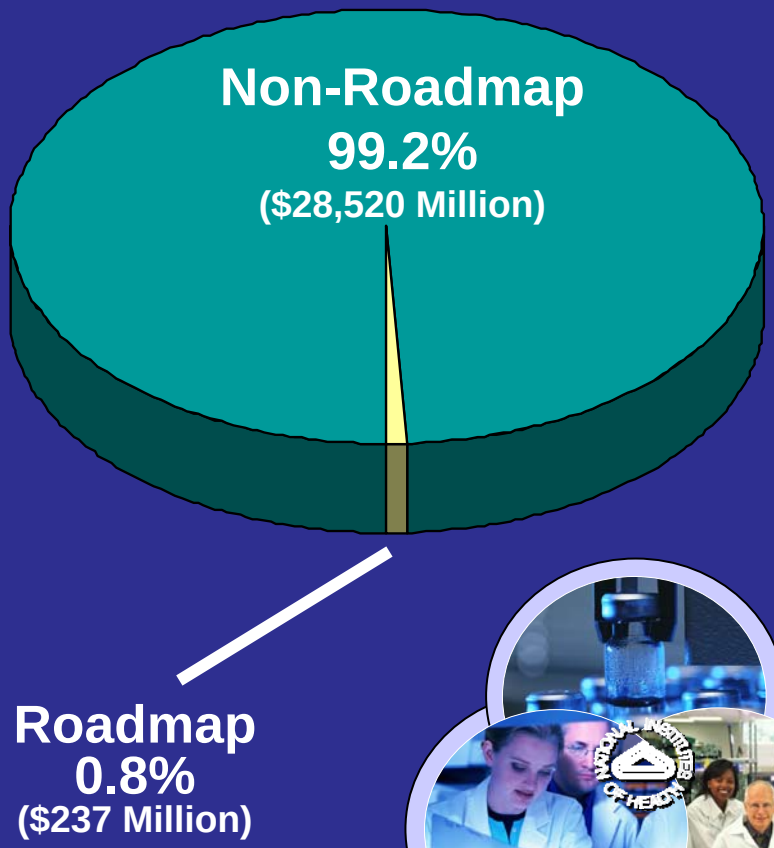
NIH Roadmap for Medical Research

FY2005 Request = $28,757M

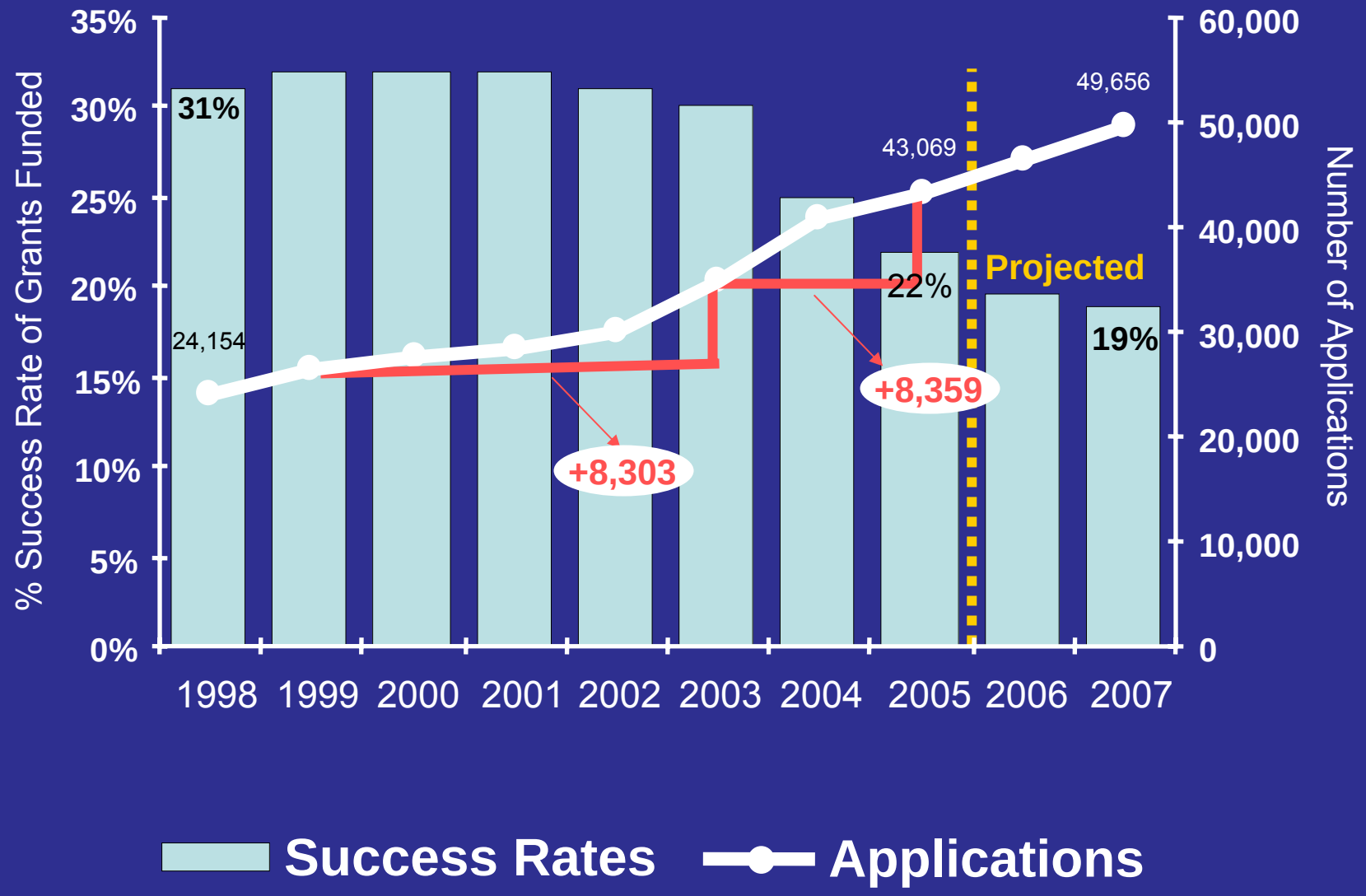


- Developed to increase synergy across NIH
- Not a single initiative but over 345 individual awards in FY05:
  - 40% basic
  - 40% translational
  - 20% high risk

What Is Really Happening? 3 Fundamental Drivers

- Large capacity building throughout U.S. research institutions and increase in number of tenure-track faculty
  - Large increase in applicants and applications occurring *after* 2003
- Budgets:
  - Appropriations below inflation after 2003 (+3 % in ‘04, 2.2% in ‘05 and 0% in 06) while BRDPI in 2004 was ~ 5%
  - Budget cycling phenomenon

New Grant Applications and Success Rates *During and After Doubling Period*



As Many New *Applicants* in the <u>Last 2 years</u> as during the previous 5 years!

5334 ≈ 5208

26583 - 21249

(2003) – (1999)

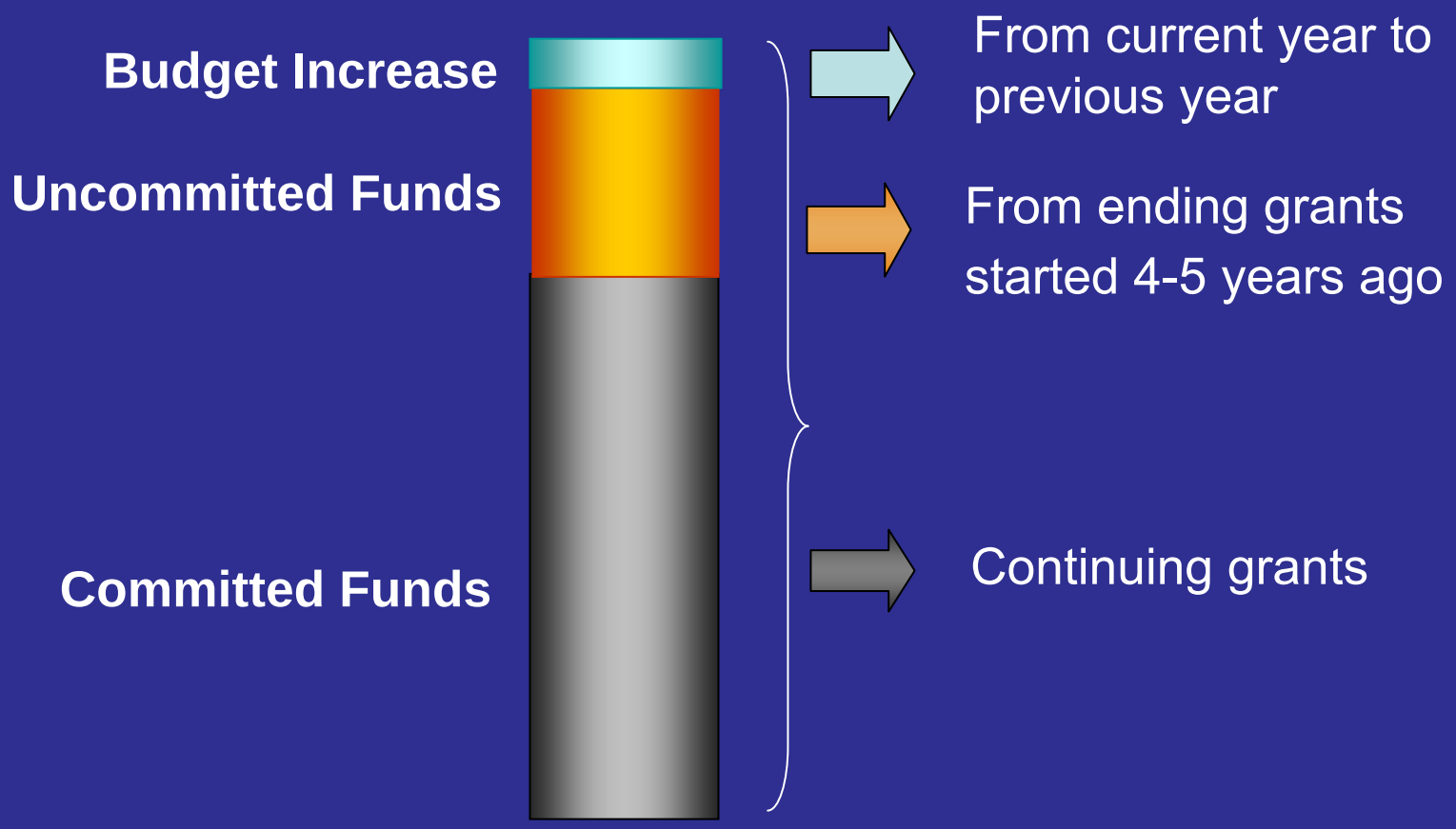
Period of doubling

31791 - 26583

(2005) – (2003)

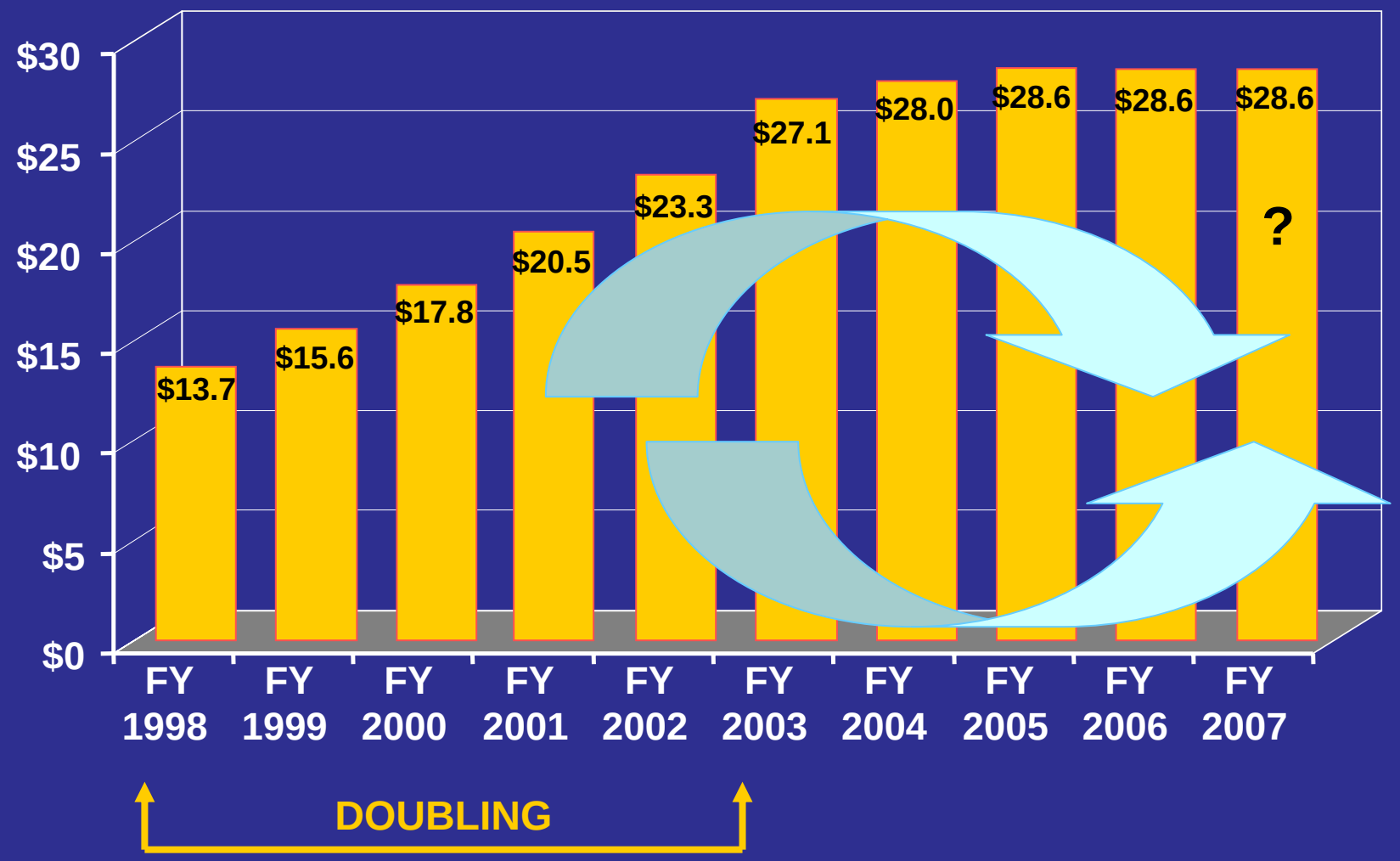
The Budget Cycling Phenomenon:

What Funds are Really Available in Any One Year?



NIH Appropriations

NIH Congressional Appropriations



The Bottom Line:

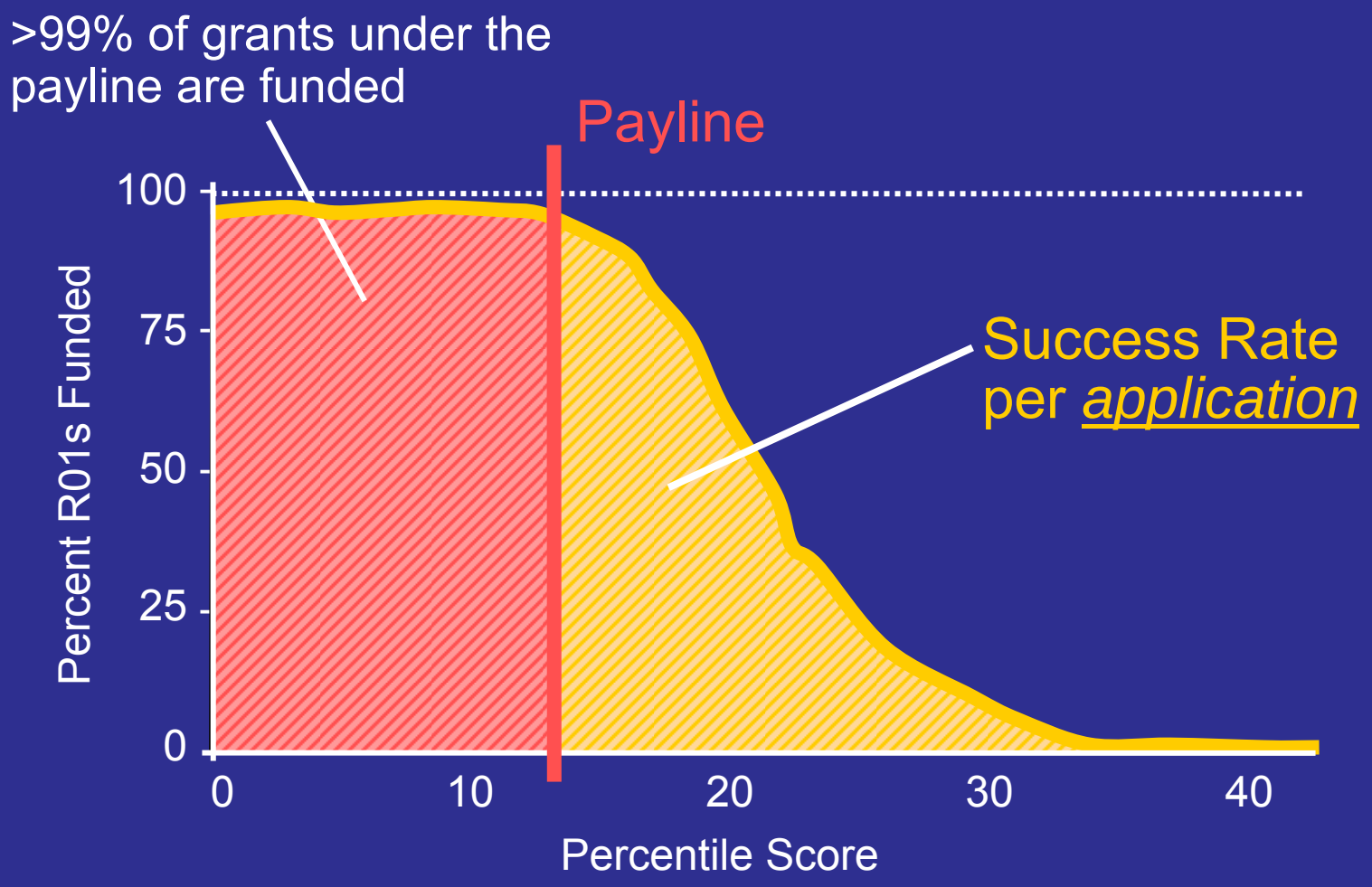
Demand for Grants "Took Off" Just as NIH Budget Was "Landing!"

- NIH managed well in 2004 and 2005 by shifting "one time" funds from 2003 to 2004, and obtaining small increases in 2004 (2.9%) and 2005 (2%)
- Katrina requirements led to a flat 2006 NIH while rest of HHS underwent a 2.5% cut
- Budget cycling effect will improve demand vs supply of grants in 2007 but *we need to educate public about need for sustainability in research*

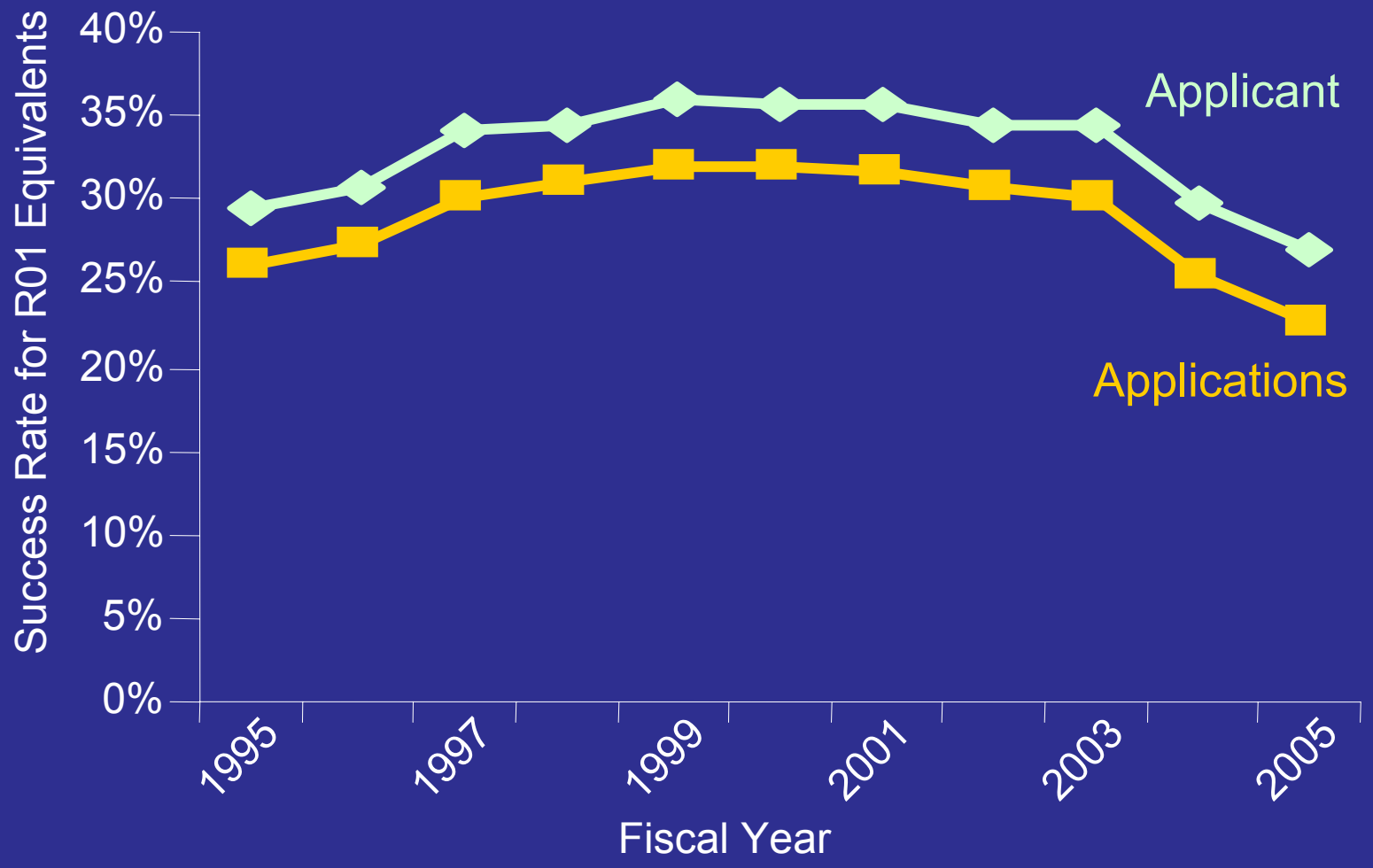
The Question on Everyone's Mind: "What are MY chances of being funded?"

- Payline is not the funding cut-off line!
- Success rate per application understates funding rate per applicant
- FY 2005- 22.3% success rate for applications, but 27.6% for applicants
- FY 2006- 19.8% for applications, but ~25% for applicants

Success Rate is Higher than the Percentile Payline



Success Rates are always higher for Applicants than for Applications



Success Rate files as of May 3, 2006. Program srf_indiv_060103_rfm
Individuals are determined using the pi_profile_person_id in IMPAC-II

Where Do We Go From Here?

Adaptive Strategies

A Vision for the Future

Strategies

- First: Know the facts
- Second: Develop adaptive strategies
  - Protect the essential: ***Knowledge and Discovery***
  - Increase number of competing grants (supply/demand management)
  - Support new investigators
    - **New Pathway to Independence Program**
    - **Institutes and Centers efforts to assist new investigators**
- Third: Convey a unified message
  - Increase communications about positive impact of NIH at local, regional and national levels
- Fourth: NIH's exciting vision for the future

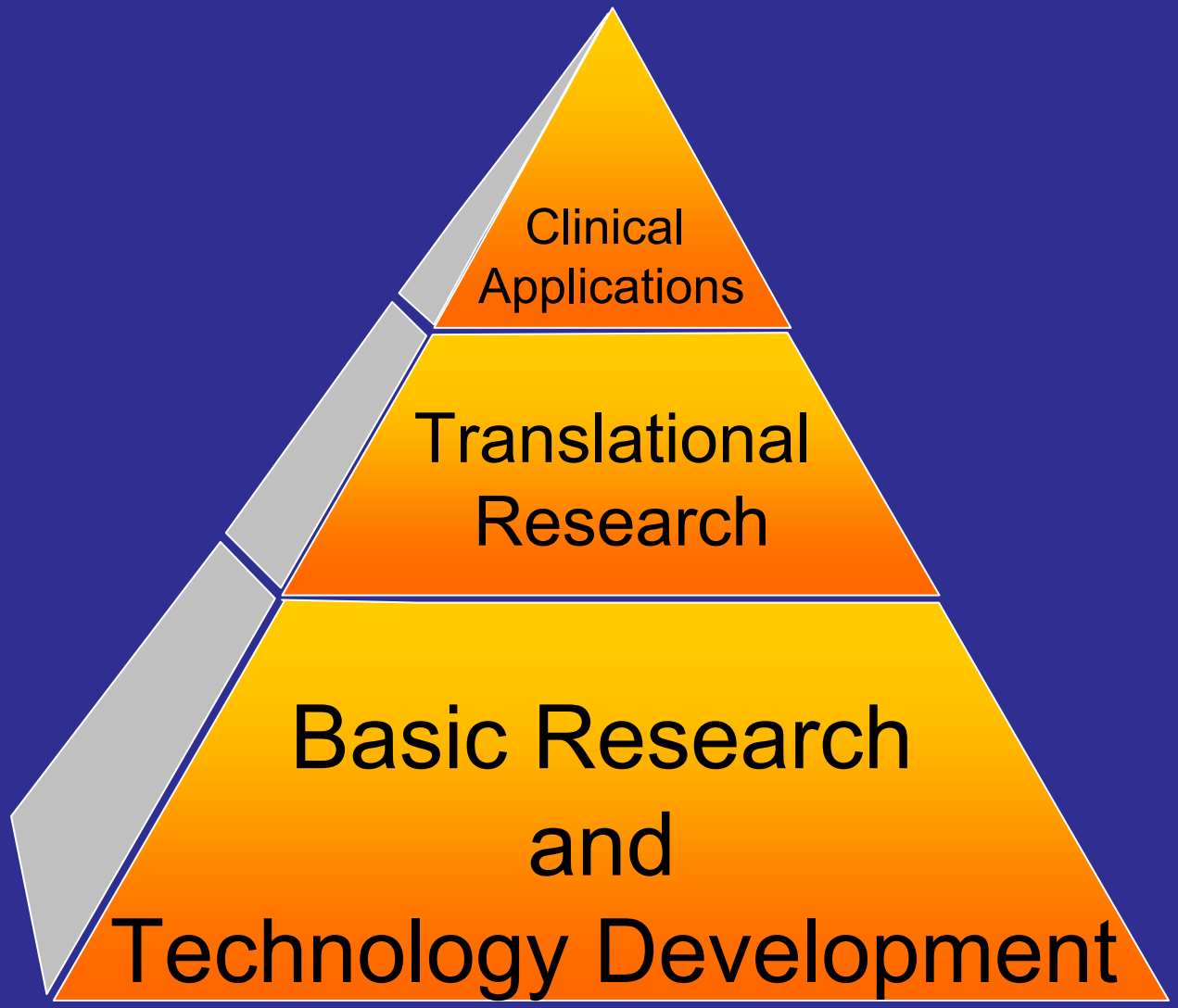
America Is Living Longer
And Healthier

Average investment per American in NIAMS
~$1.10
per year

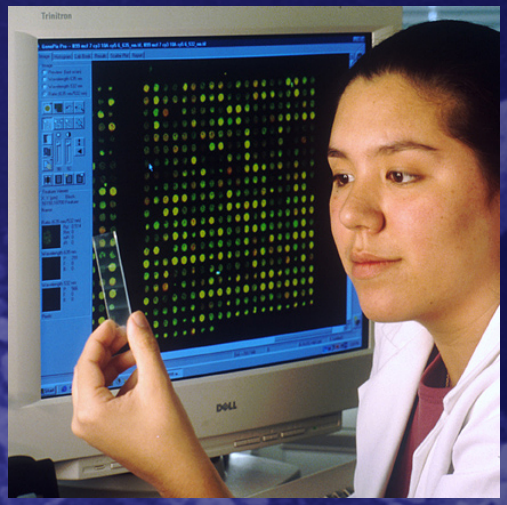
20-year investment per American in NIAMS:
~$22
Total

- Since 1982, disability rate for elderly Americans declined by 30%
- Improvements in:
  - Recovery from heart disease, stroke
  - Deafness
  - Vision impairment
  - Osteoporosis
- Bone and joint health
  - New, more effective classes of drugs for arthritis
  - Improvements in joint replacement technology

Basic Discovery Today Provides the Foundation for Tomorrow's Medicine

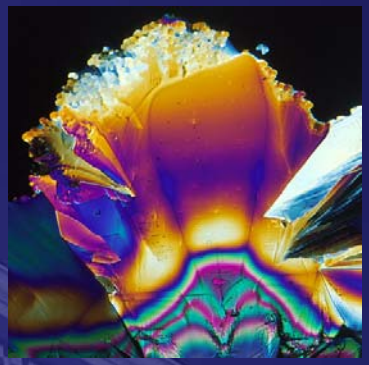
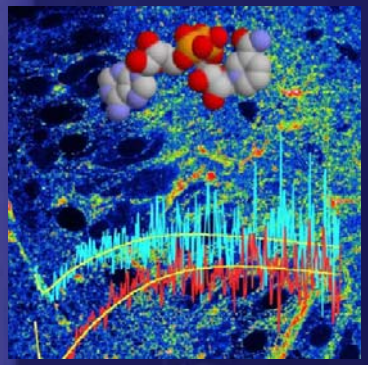
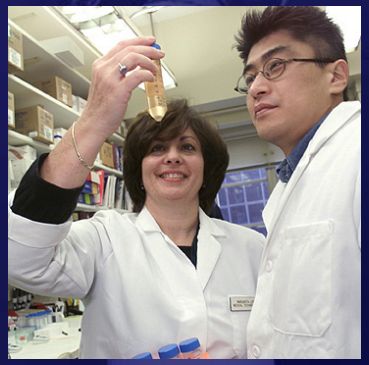


The Future Paradigm: *Transform Medicine from Curative to Preemptive*



Predictive ⟷ Personalized ⟷ Preemptive

Participatory



NIH *Transforming medicine through discovery*