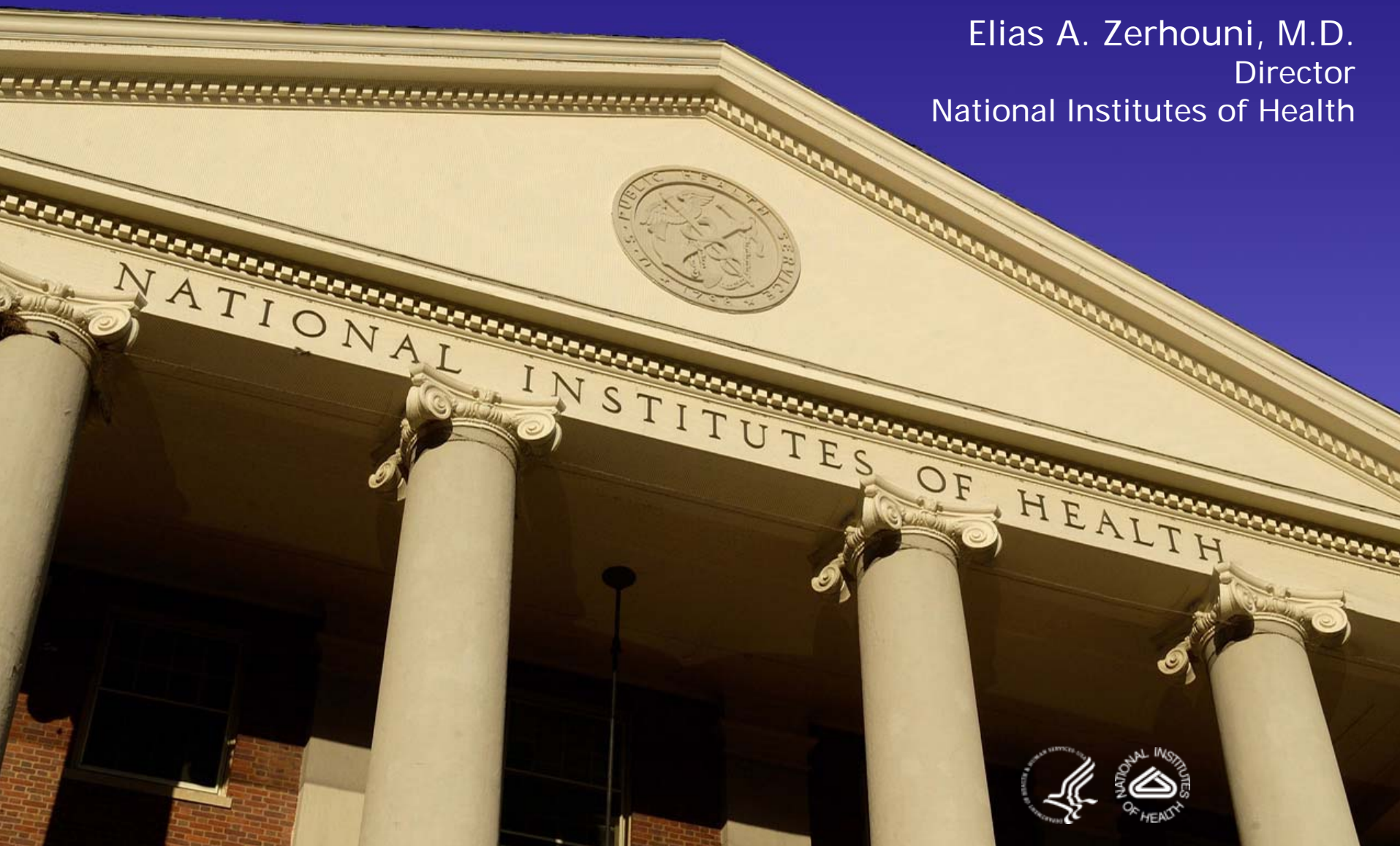


NIH at the Crossroads: Myths, Realities and Strategies for the Future

Elias A. Zerhouni, M.D.
Director
National Institutes of Health



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**





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...





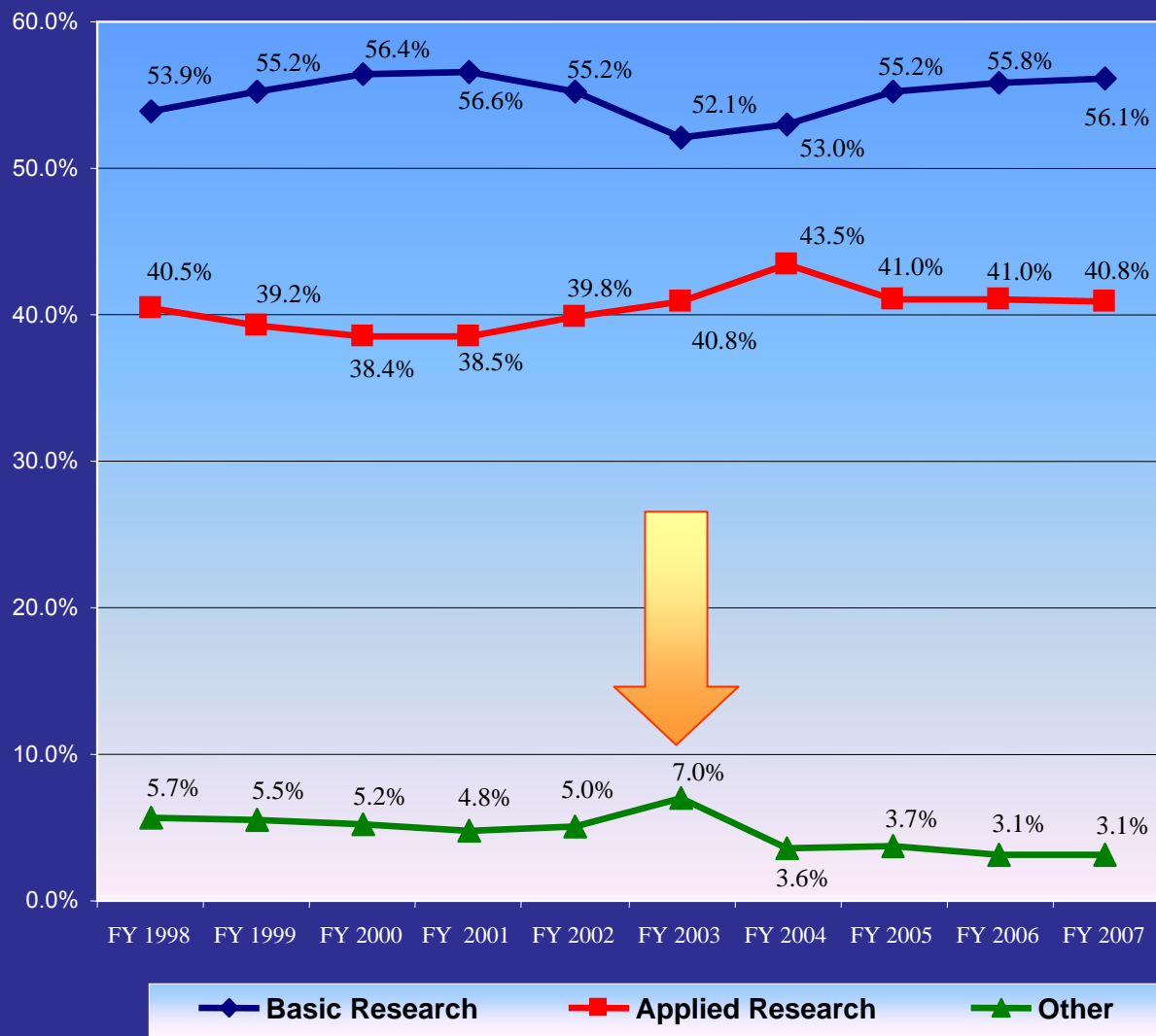
What is Driving Success Rates?

- 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





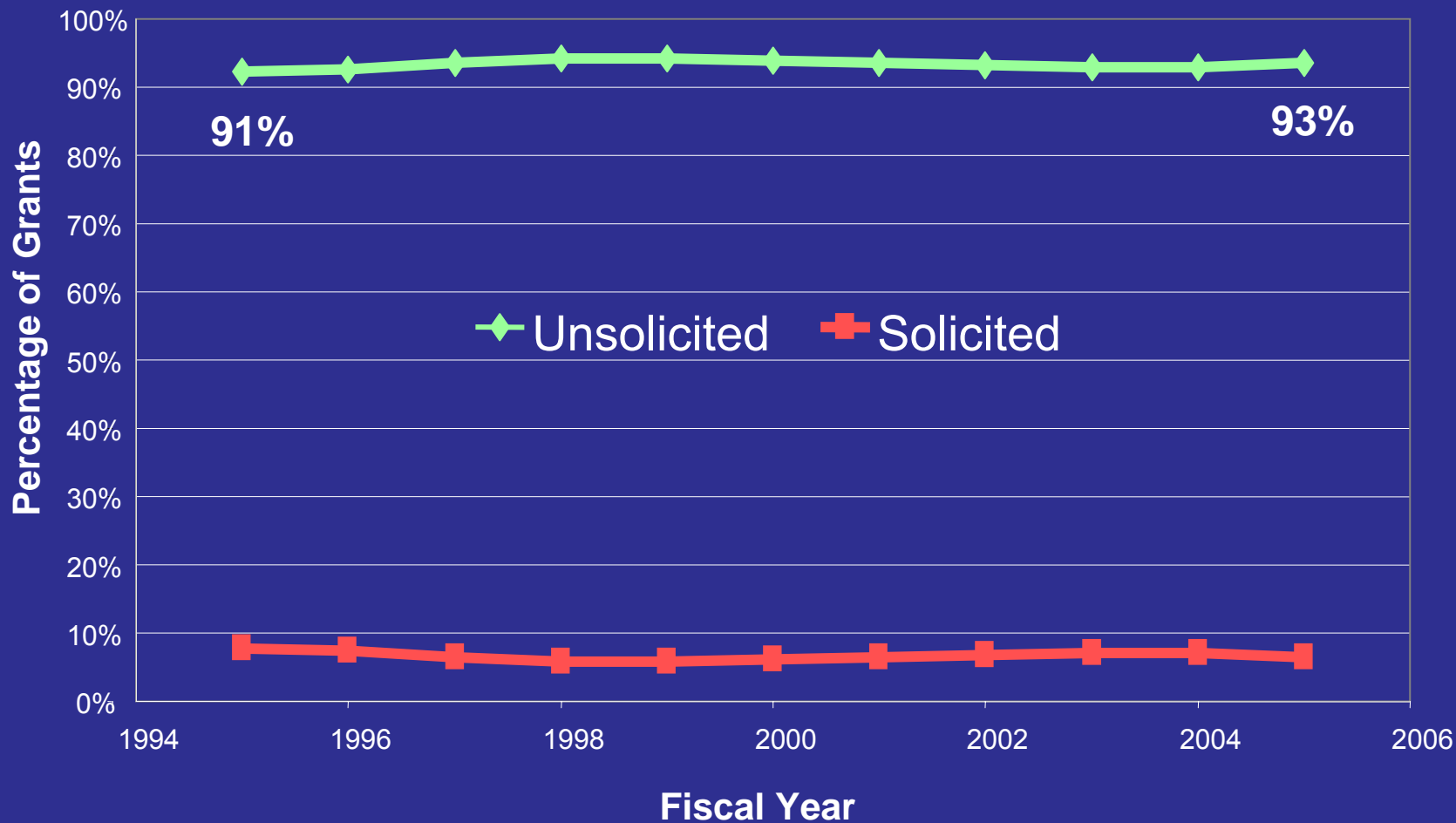
What is Driving Success Rates?

- 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





What is Driving Success Rates?

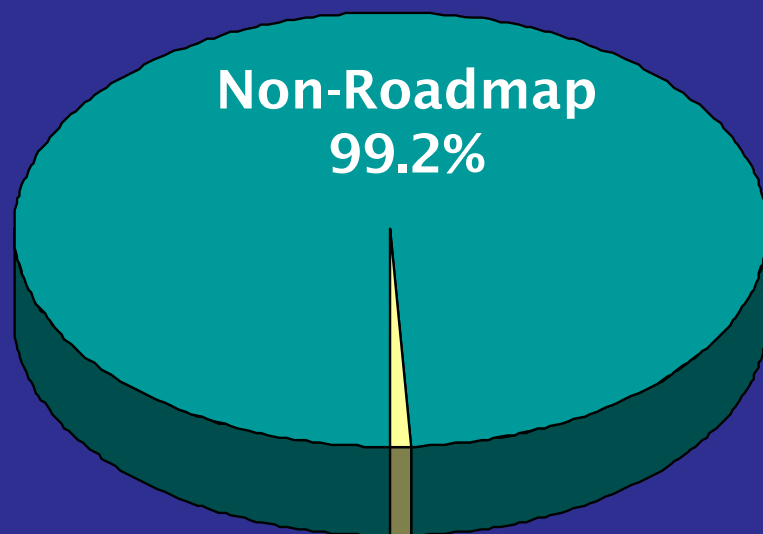
- Is NIH placing too much emphasis on translational science at the expense of basic research?
- Is NIH shifting towards solicited research (RFAs and PAs) at the expense of unsolicited, investigator-initiated research?
- Is it due to the Roadmap?





NIH Roadmap for Medical Research

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:
 - 40% basic
 - 40% translational
 - 20% high risk





Broadening the NIH Vision

FY 2004



NIH Roadmap for Medical Research

- Involves entire NIH

FY 2005



NIH Strategic Plan for Obesity Research

- Involves 19 Institutes and Centers

Image © Time magazine, June 2004

FY 2006



NIH Neuroscience Blueprint

- Involves 15 Institutes and Centers

National Institute of Dental and Craniofacial Research
is part of each of these *trans*-NIH initiatives





What Is Really Happening?

3 Fundamental Drivers

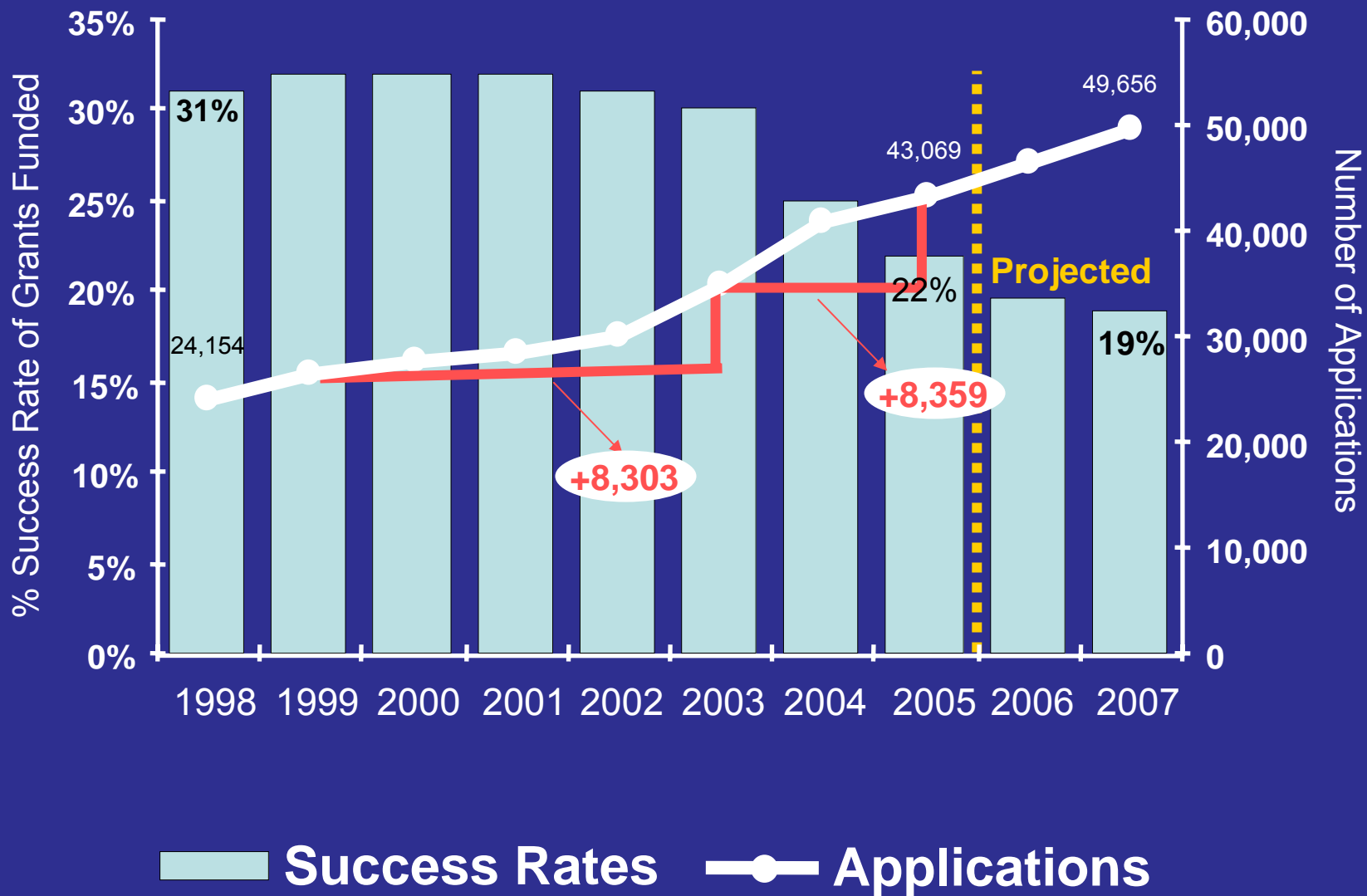
- Large capacity building throughout U.S. research institutions and increase in number of tenure-track faculty
- Appropriations below inflation after 2003
 - Increases of +3 % in '04, 2.2% in '05 and 0% in 06
 - Biomedical Inflation in 2004 was ~ 5%
- Budget cycling phenomenon





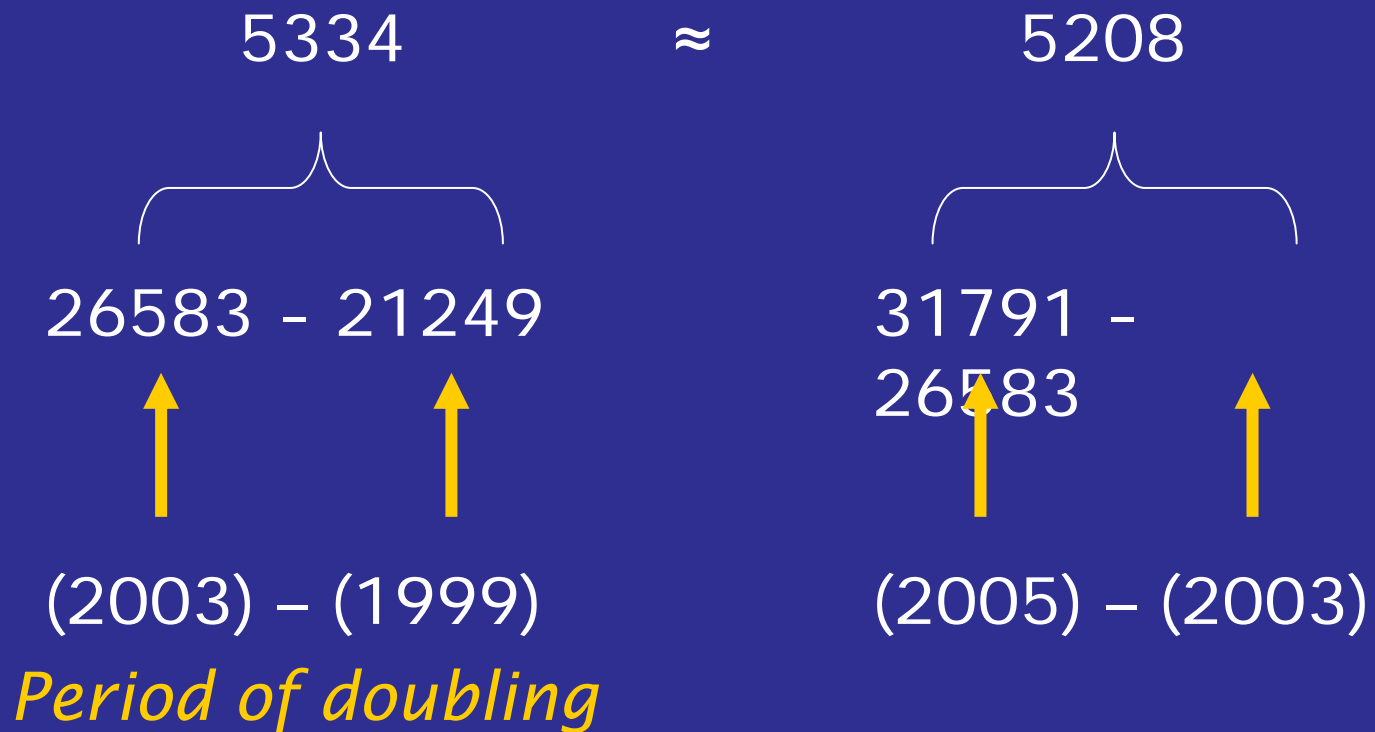
New Grant Applications and Success Rates

During and After Doubling Period



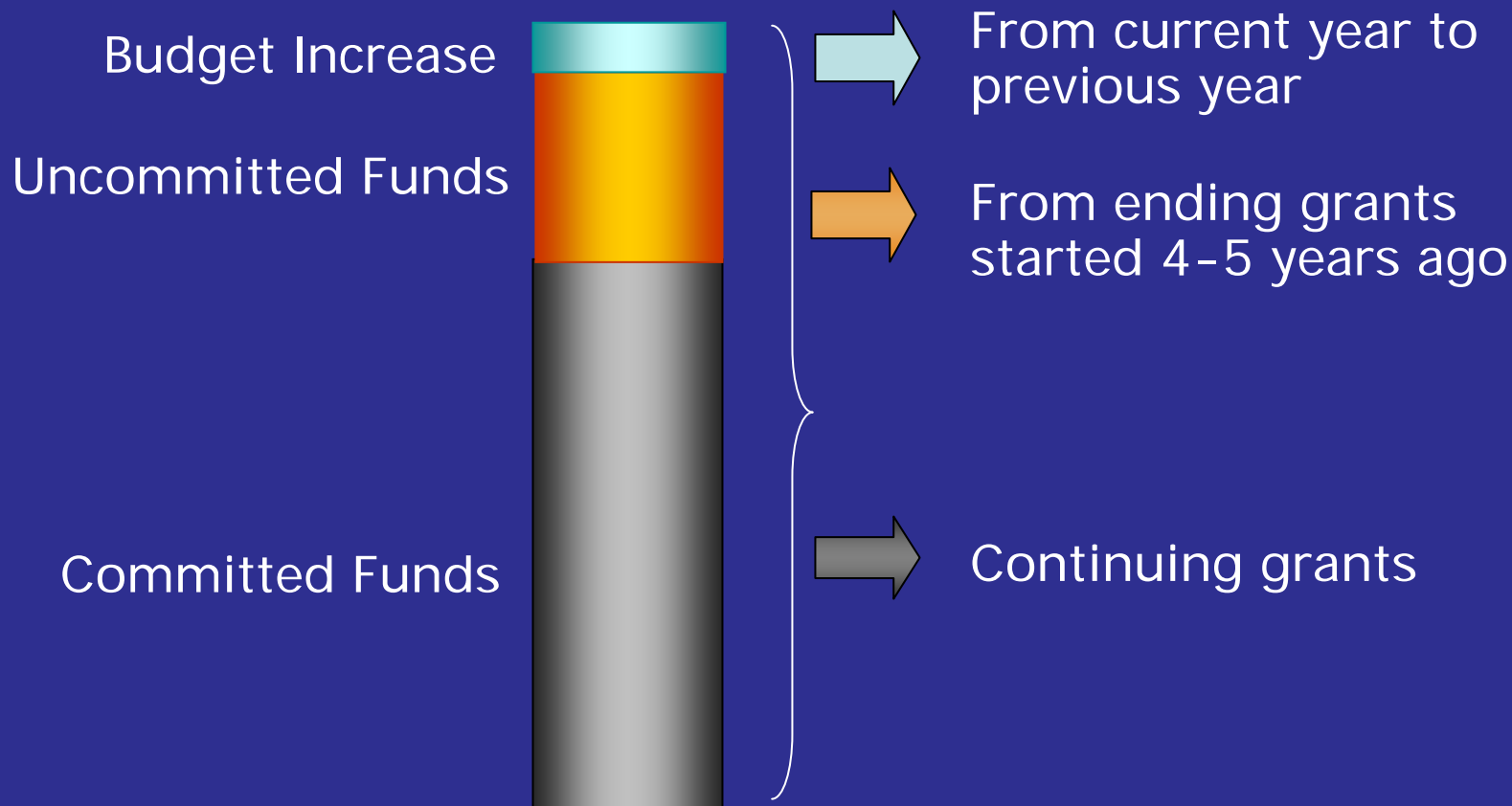


As Many New *Applicants* in Past 2 Years as During Previous 5 Years!





The Budget Cycling Phenomenon: *What Funds are Available in any One Year?*



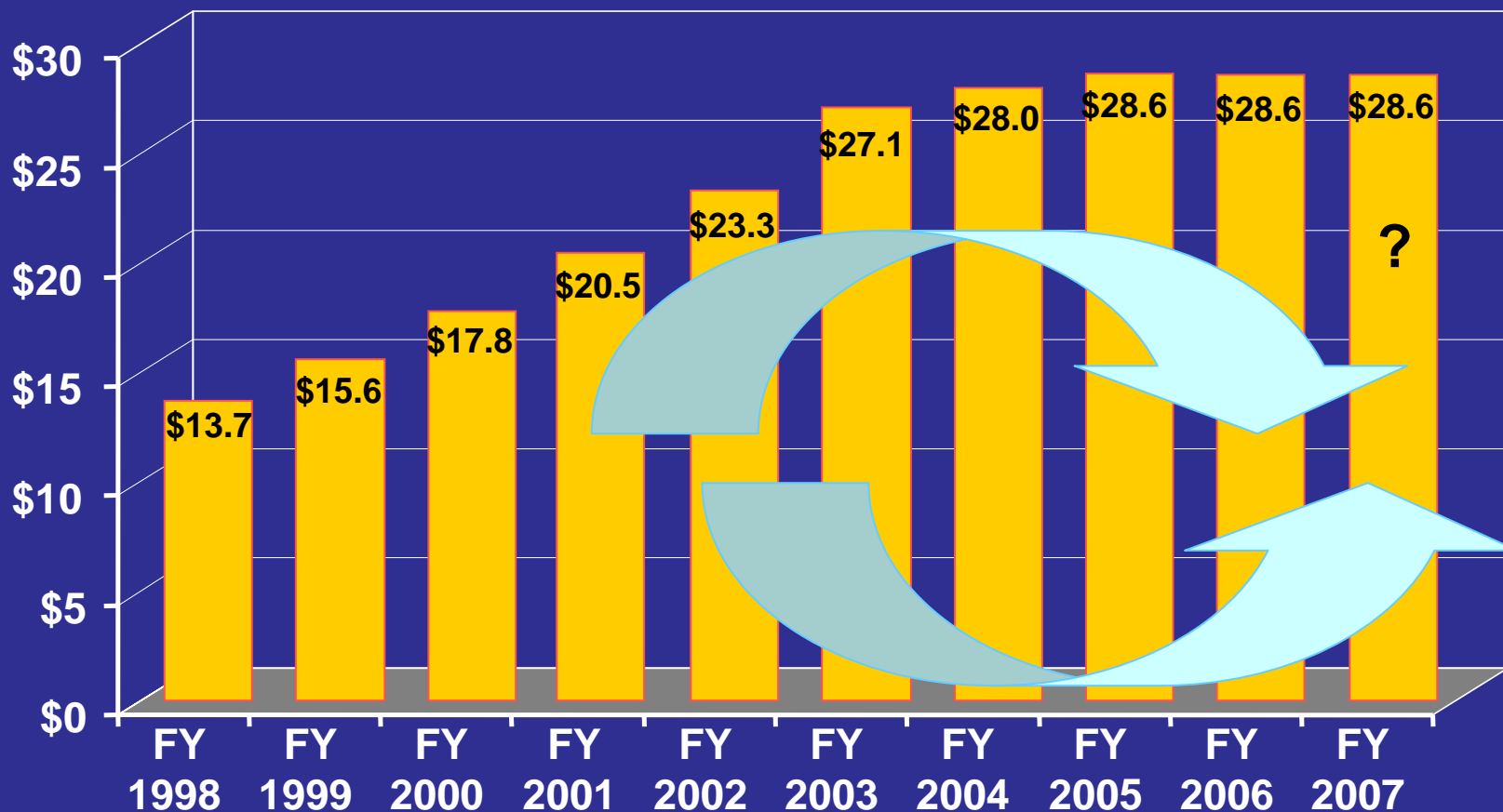
NIH Appropriations





NIH Congressional Appropriations

Billions of Dollars



DOUBLING





The Bottom Line:

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



- NIH managed well despite small increases in 2004 (2.9%) and 2005 (2%) by shifting “one time” funds from 2003 to 2004
- Budget cycling effect will improve demand vs supply of grants in 2007 but *we need to educate public about need for sustainability in research*



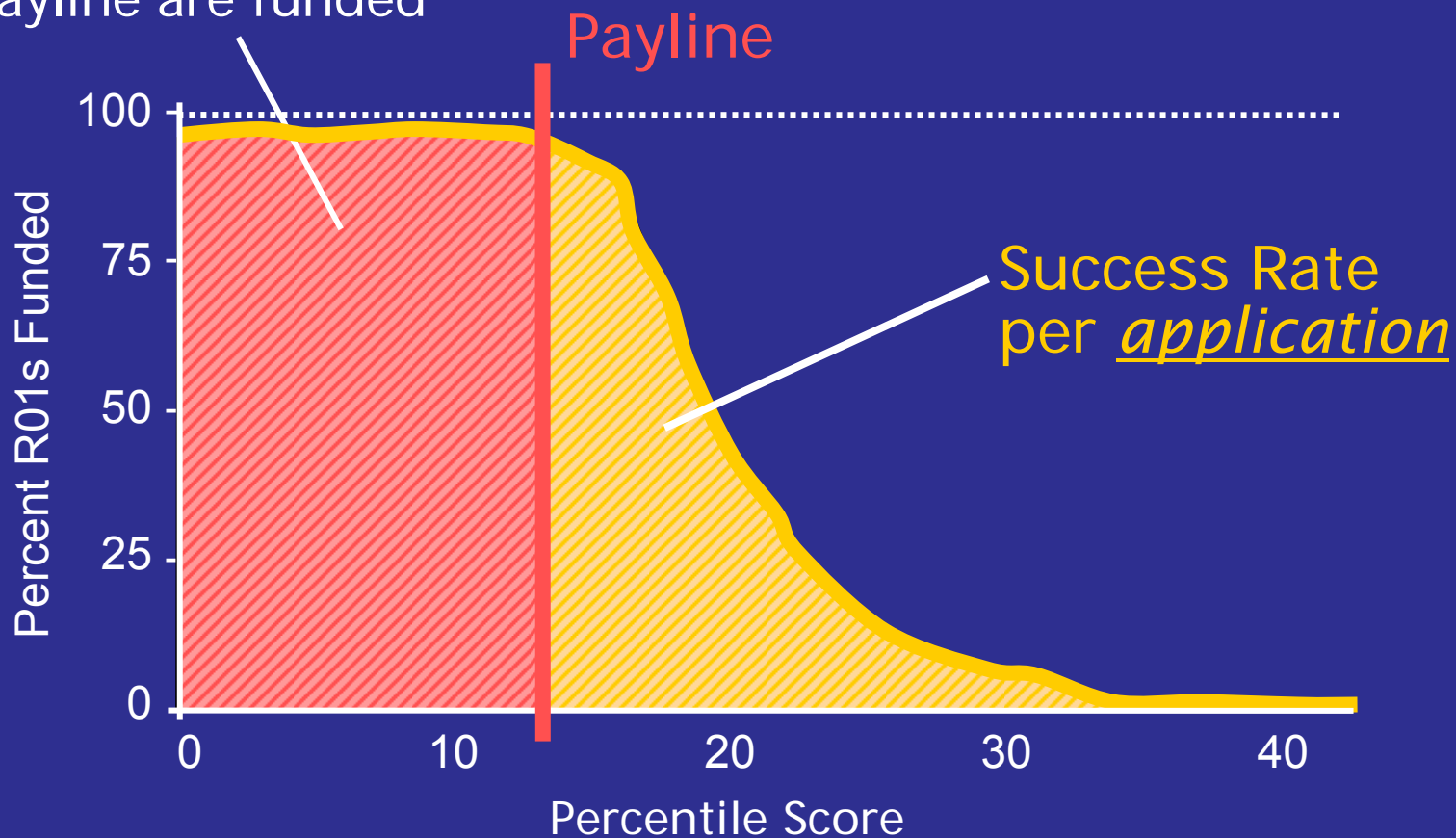
The Question on Everyone's Mind:
*What are MY chances
of being funded?*





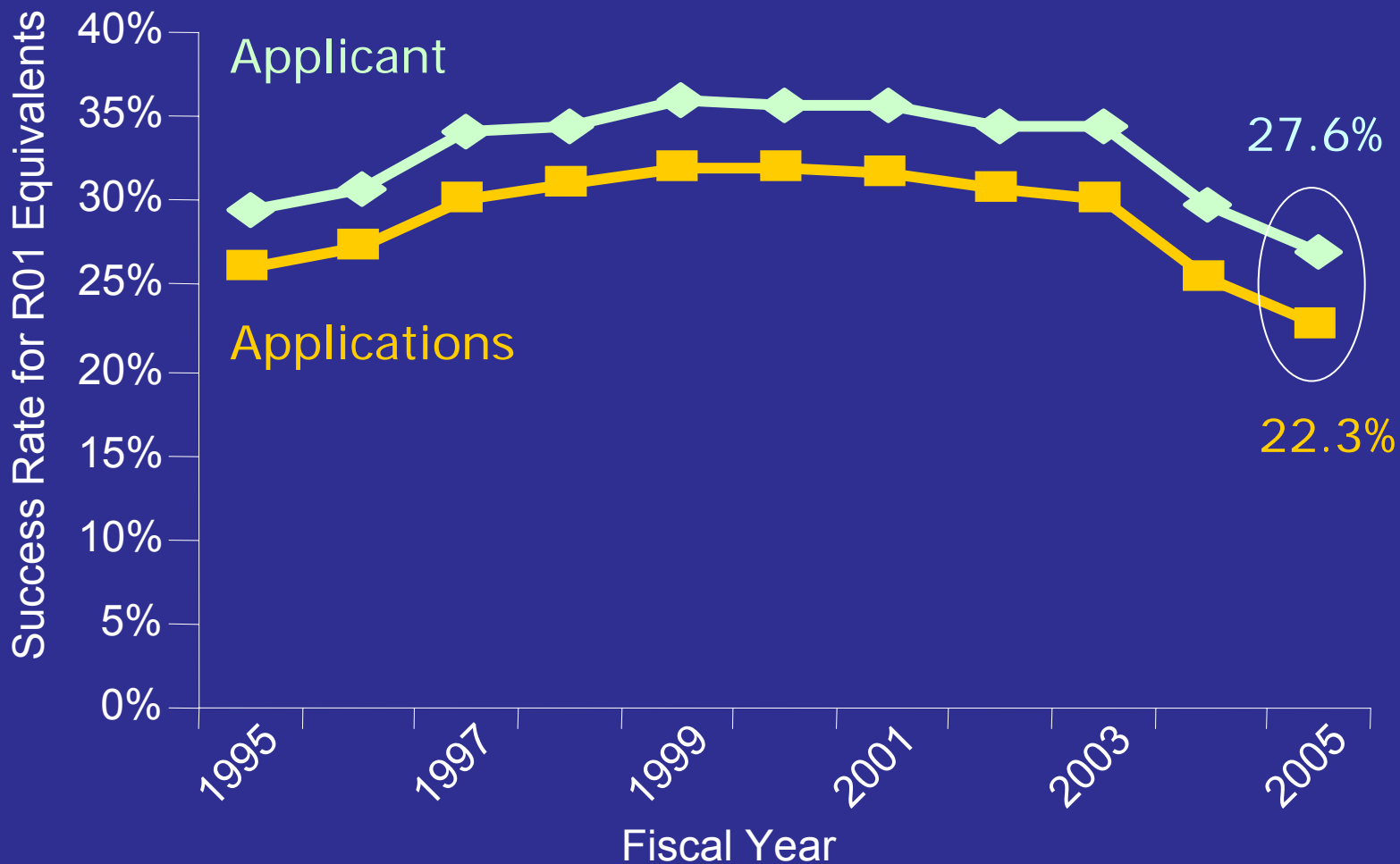
Payline Is Not Funding Cut-off Line

>99% of grants under the payline are funded





Success Rate per Application Understates Funding Rate per Applicant





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
~70¢
per year



30-year investment
per American:
~\$21
Total

- Dental and oral health

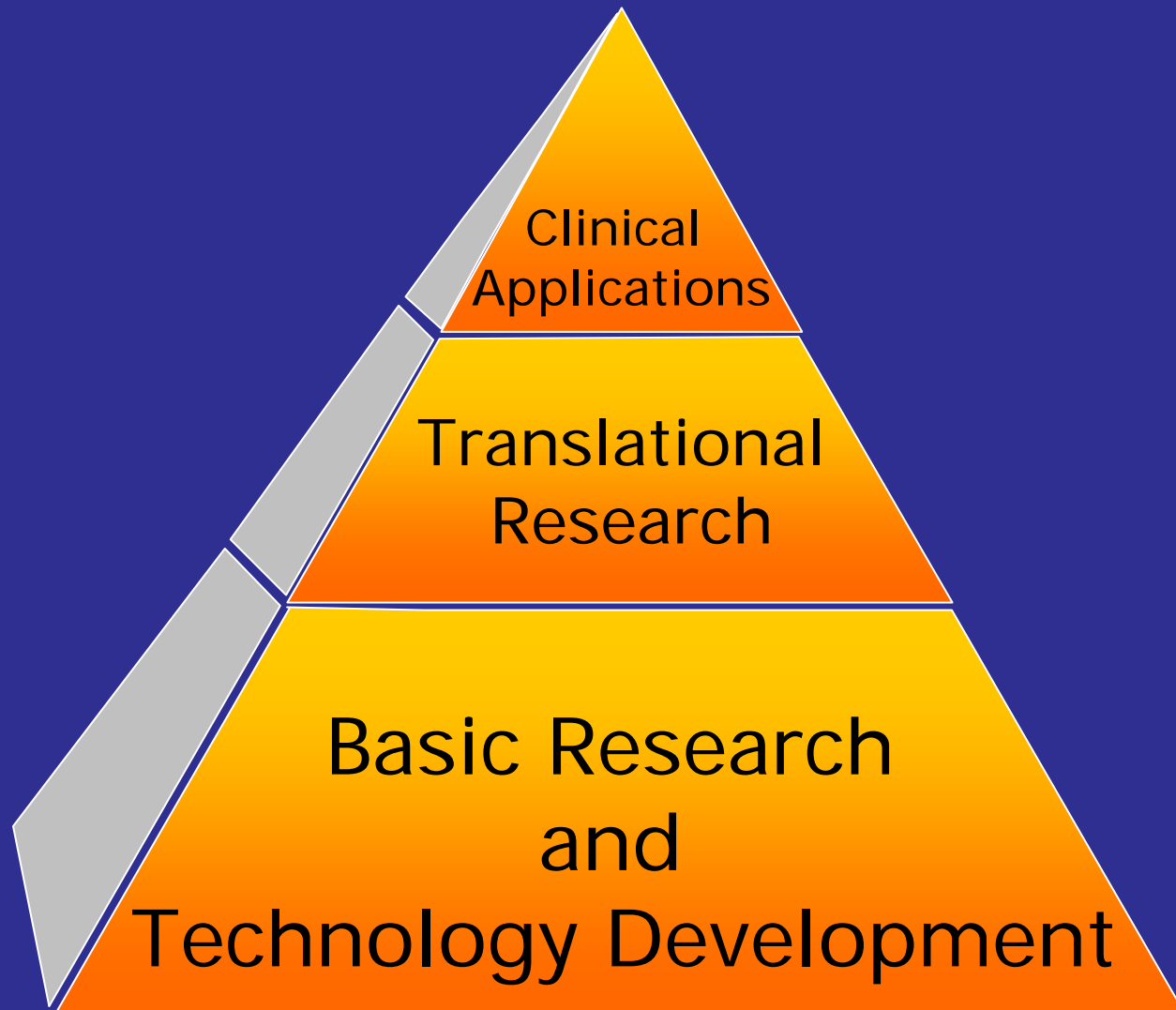
- *In 1979 to 1989*: The American public saved **\$39 billion in dental bills** due to preventive measures that improved oral health

Today: 17.6 million adults are spared the consequences of losing all of their teeth

Proportion of caries-free schoolchildren increased 33% from 1980 to 2002

- *Tomorrow*: Saliva is a promising biomarker tool

Basic Discovery Today Provides the Foundation for Tomorrow's Medicine





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

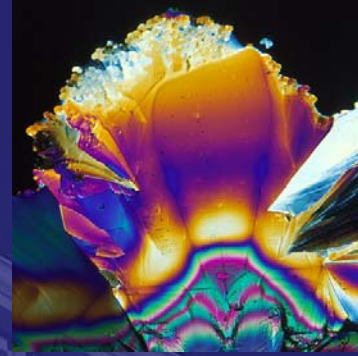


Predictive ↔ Personalized ↔ Preemptive



Participatory





NIH *Transforming medicine through discovery*

