

# NIH Governance and Priority Setting: An Overview

Raynard S. Kington, M.D., Ph.D.  
Deputy Director, NIH

Scientific Management  
Review Board



# NIH Reform Act of 2006 Charge to the SMRB

“With respect to a specific contemplated **organizational issue**:

1. Review NIH research portfolio to determine progress, effectiveness, and value of the portfolio and of the allocation of NIH resources among the activities that comprise the portfolio
2. Determine pending scientific opportunities and public health needs with respect to the research within NIH’s jurisdiction”

# SMRB Charge, continued

3. “For any proposal for organizational change
  - Analyze budgetary and operational consequences
  - Take into account historical funding and support for research activities at national research institutes and centers established recently relative to those in existence for more than two decades
  - Estimate levels of resources needed to implement change(s)
  - Make recommendation for allocating NIH resources among institutes and centers
  - Analyze consequences for the progress of research in areas affected”

# SMRB Charge → This Presentation

**Review and  
assess NIH  
research  
portfolio**

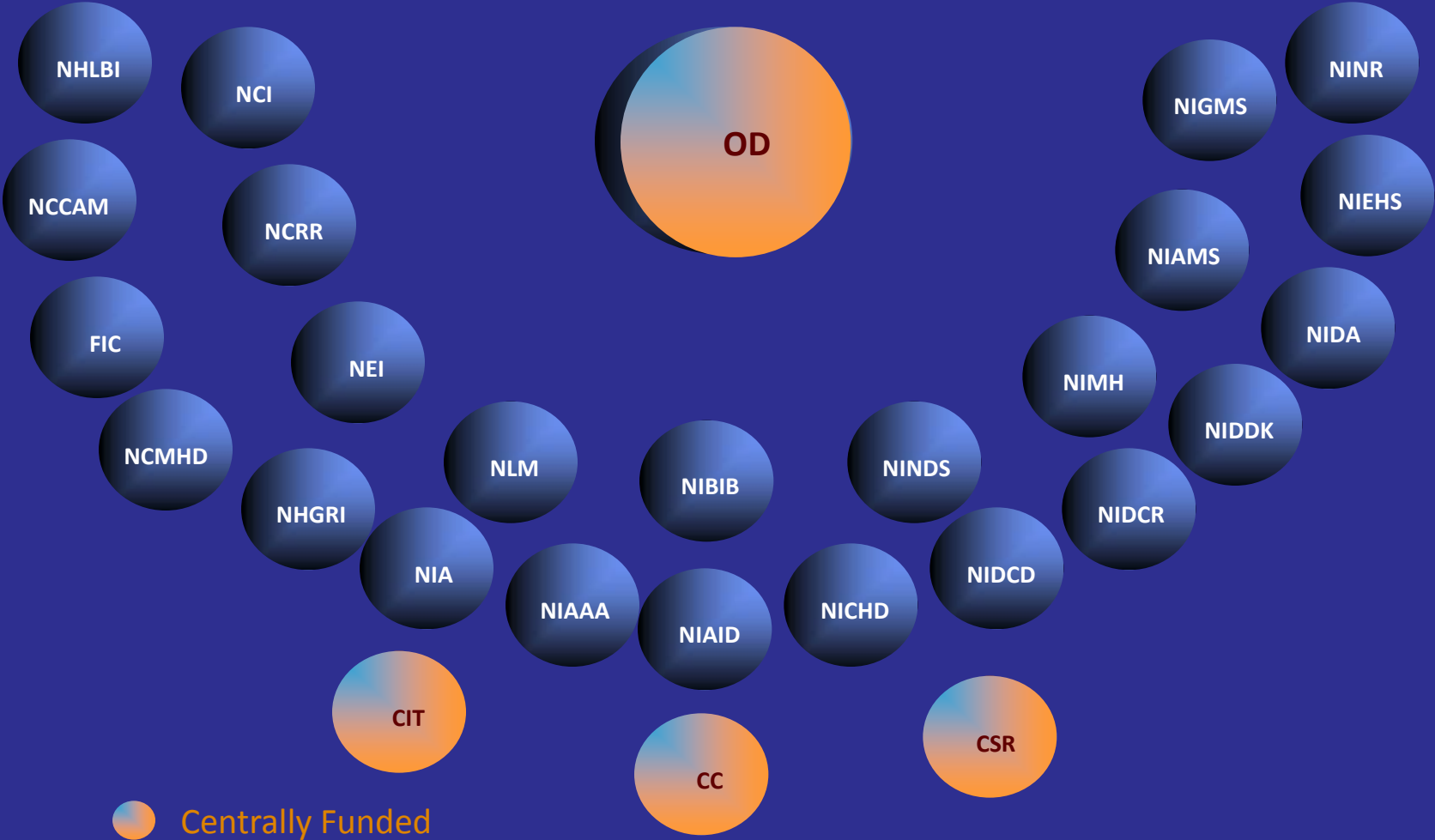
**Determine  
scientific  
opportunities &  
public health  
needs**

**Priority  
Setting  
at NIH**

# Topics

- NIH organizational governance
- NIH priority setting: principles, imperatives, current initiatives and future directions

# NIH Organizational Structure



# Governance: NIH Steering Committee

- Established in July 2004 in response to growth in the size of NIH, complexity of its mission, and the requisite resources
- Has governance purview for all corporate functions, resources, or policies **other than the setting of corporate scientific direction and priorities**
- Brings operational issues of highest significance to all IC Directors

# NIH Organizational Governance

**Steering Committee**

**Management & Budget**

**Extramural**

**Working  
Groups**

**Intramural**

**Facilities**

**Information Technology**



# Governance:

## Membership of the Steering Committee

- 10 Members
- Chaired by NIH Director
- 3 permanent members: Directors of NCI, NHLBI, and NIAID
- 7 rotating members from other small to mid-size institutes and centers
- NIH Deputy Director is ex-officio member

# Governance:

## Membership of the Working Groups

Each working group is co-chaired by a Steering Committee member and a corresponding senior functional head in the Office of the Director:

1. Management and Budget
2. Extramural
3. Intramural
4. Facilities
5. Information Technology

# Governance:

## Purposes of the Working Groups

- Provide oversight for—but not manage—functions common to ICs
- Make corporate policy and resource recommendations to the Steering Committee
- Issues coordinated by NIH Deputy Director and brought directly to Steering Committee:
  - Science Policy
  - Legislation
  - Communication

# Governance: Review and Revision

- Two reviews completed to date
- Conclusions of internal evaluation of Working Groups:
  - Overall governance structure has improved the decision-making process
  - Potential areas for improvement:
    - Unclear role of Legacy Committees, particularly Scientific Directors
    - Enhancing coordination among working groups for cross cutting issues
    - Unclear scope of “authority” for Working Groups
- NIH Director currently reviewing governance

# Background on NIH Research Priority Setting

- Focus on extramural research
- Peer review to drive decision-making
- Importance of investigator-initiated research: the “Invisible Hand” in the free market of scientific ideas
- Congress defers to the rigorous process driven by the scientific community
  - *“... the day we decide which grants are going to be approved... is the day we will ruin science research in this country. We have no business making political judgments about those kinds of issues.”*

**~ Representative David Obey  
House Appropriations Committee Chairman  
July 11, 2003**

# Priority Setting: Current Processes

Multi-leveled, multi-focal

**Priority setting occurs within every  
institute/center**

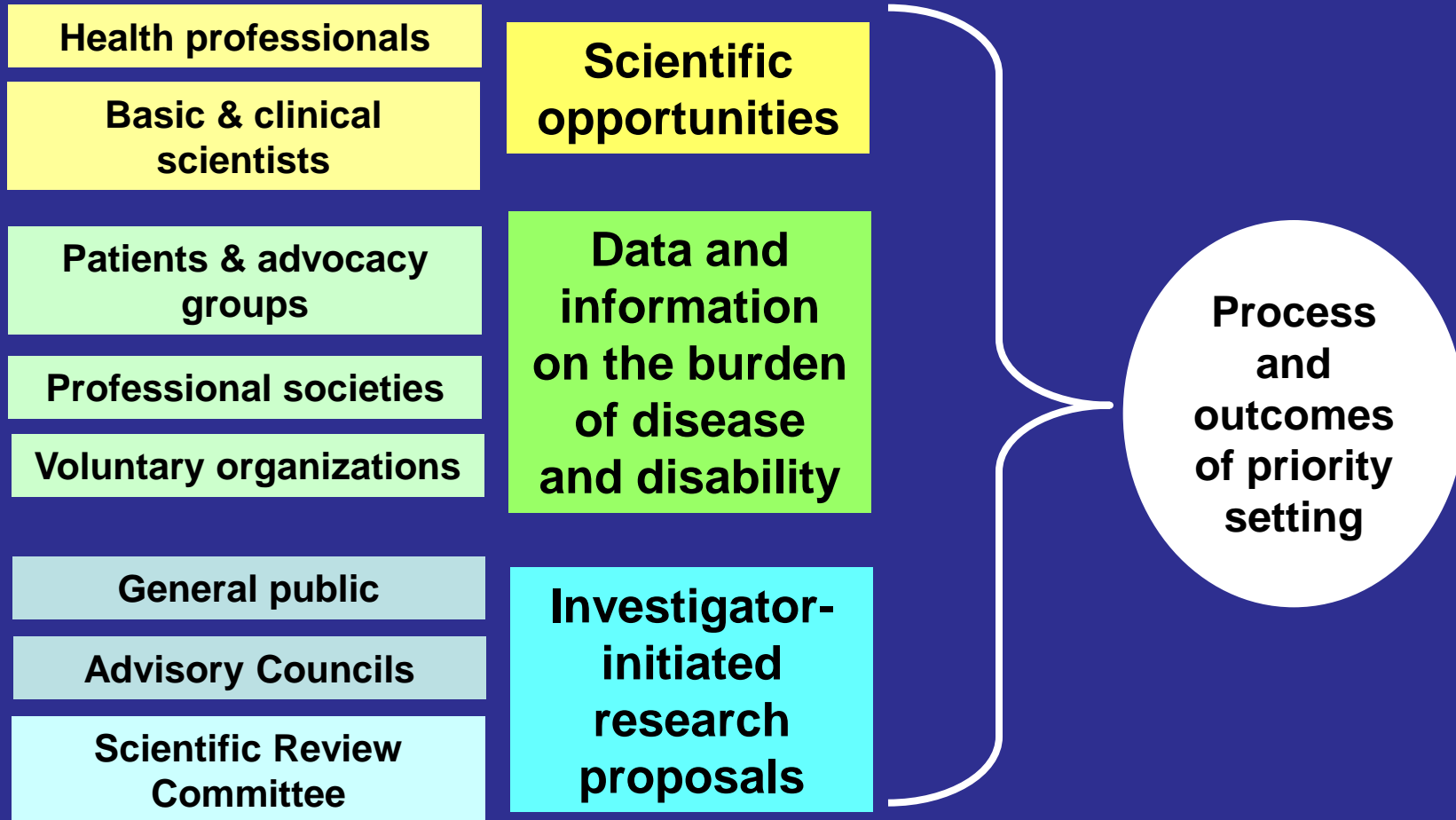
**Priority setting occurs within the Office of the  
Director**

**Priority setting occurs beyond NIH in the  
executive and legislative branches of the  
federal government**

**Priorities reflected in resource allocations, especially budget**

# Priority Setting: Current Processes

Multiple “inputs”:  
stakeholders, data, and information



# Setting Research Priorities – Many Stakeholders





# Priority Setting: Current Processes

*... complex and multifaceted ...*

“Some of the variables in choosing resource allocations include public health needs such as the burden of disease, new scientific opportunities, the quality of research proposals, the experience of applicants, and the ability to sustain research through adequate staffing and infrastructure...”

~ Dr. Elias Zerhouni  
Testimony before the Committee on Energy and Commerce,  
Subcommittee on Health, United States House of  
Representatives  
March 17, 2005

# Priority Setting: Current Processes

## *Executive and Legislative Branches*

- U.S. Congress
  - NIH authorization and appropriations
  - Sets NIH and IC funding levels and directs NIH attention to particular areas of research interest or emphasis
  - Historically influential in organizational change at NIH, e.g., through creation of new ICs
- Executive Branch, White House, OMB, HHS
  - NIH appropriations process
  - Establishes priorities for improving health, e.g. Healthy People 2010

# Priority Setting: Current Processes

## *Institutes and Centers*

- Primary locus of research priority setting
- Priorities partially driven by scientific community through investigator-initiated research applications
- Two-tiered peer review process:
  - Assessment of scientific and technical merit
  - Review by Advisory Councils

# Priority Setting: Current Processes

## *IC Advisory Councils*

- Comprised of senior scientific experts and members of the public
- Advise and recommend programmatic relevance of applications and areas of science to emphasize to the ICs
- Vet ideas for scientific initiatives that receive set-aside funds
- Advise ICs on scientific priorities

# Priority Setting: Current Processes

## *Trans-NIH Planning*

- Creation of the Division of Program Coordination, Planning and Strategic Initiatives (DPCPSI) in 2007
  - In the Office of the NIH Director
  - Created to identify important areas of emerging scientific opportunity, rising public health challenge, and gaps in knowledge that deserve special emphasis
  - Home of the NIH Roadmap and Common Fund

# Priority Setting: Current Processes

## *Trans-NIH Planning – Roadmap and Common Fund*

- Programs are developed via highly dynamic strategic planning process
- Provides NIH with flexibility to respond quickly to new ideas, challenges, and gaps
- Involves broad stakeholder input from multiple scientific and public sources as well as NIH leadership

# Priority Setting: Current Processes

## *Trans-NIH Planning – Roadmap and Common Fund*

- NIH solicited ideas for new initiatives from intramural and extramural scientific community, health professionals, patient advocates, and general public
  - (RFI in NIH Guide: <http://grants.nih.gov/grants/guide/notice-files/NOT-RM-08-014.html>)
- Programmatic review of submitted ideas, assessment in light of current NIH portfolio, vetting by Council of Councils, and final review by NIH leadership

# Priority Setting: Current Processes

## *Trans-NIH Planning – Roadmap and Common Fund*

Proposed initiatives must:

1. Be truly transforming
2. Promote and advance the individual missions of the Institutes and Centers (IC) to benefit health
3. Require participation from NIH as a whole and/or address an area(s) of science that does not clearly fall within the mission of any one IC or program office
4. Be unique



# Priority Setting: Current Processes

## Trans-NIH Planning – DPCPSI

- Coordinate development of tools to enhance portfolio analysis and priority setting
  - Create better information systems to analyze the entire NIH portfolio of research and provide modern decision support systems to all Institutes and Centers
    - Research, Condition, and Disease Categorization (RCDC) system
    - Portfolio Analysis Pilot Projects
    - Institute and Center-developed efforts, e.g., NIAID electronic Scientific Portfolio Assistant (eSPA)

# Priority Setting: Current Processes

## Trans-NIH Planning – DPCPSI

- Enhance efforts to report on outputs, outcomes, and return on investment
  - Research Portfolio Online Reporting Tool (RePORT)
  - Expand measures of Scientific Opportunity vs. Public Health burden and societal demands within each IC and across NIH

# Priority Setting: Current Processes

“Some of the variables in choosing resource allocations include public health needs such as the burden of disease, new scientific opportunities, the quality of research proposals, the experience of applicants, and the ability to sustain research through adequate staffing and infrastructure. **These factors are often lost in the public debate about NIH funding, in which the discussion is sometimes simplified by focusing attention on apparent differences between the toll of certain diseases and the amount spent on research about those diseases.**”

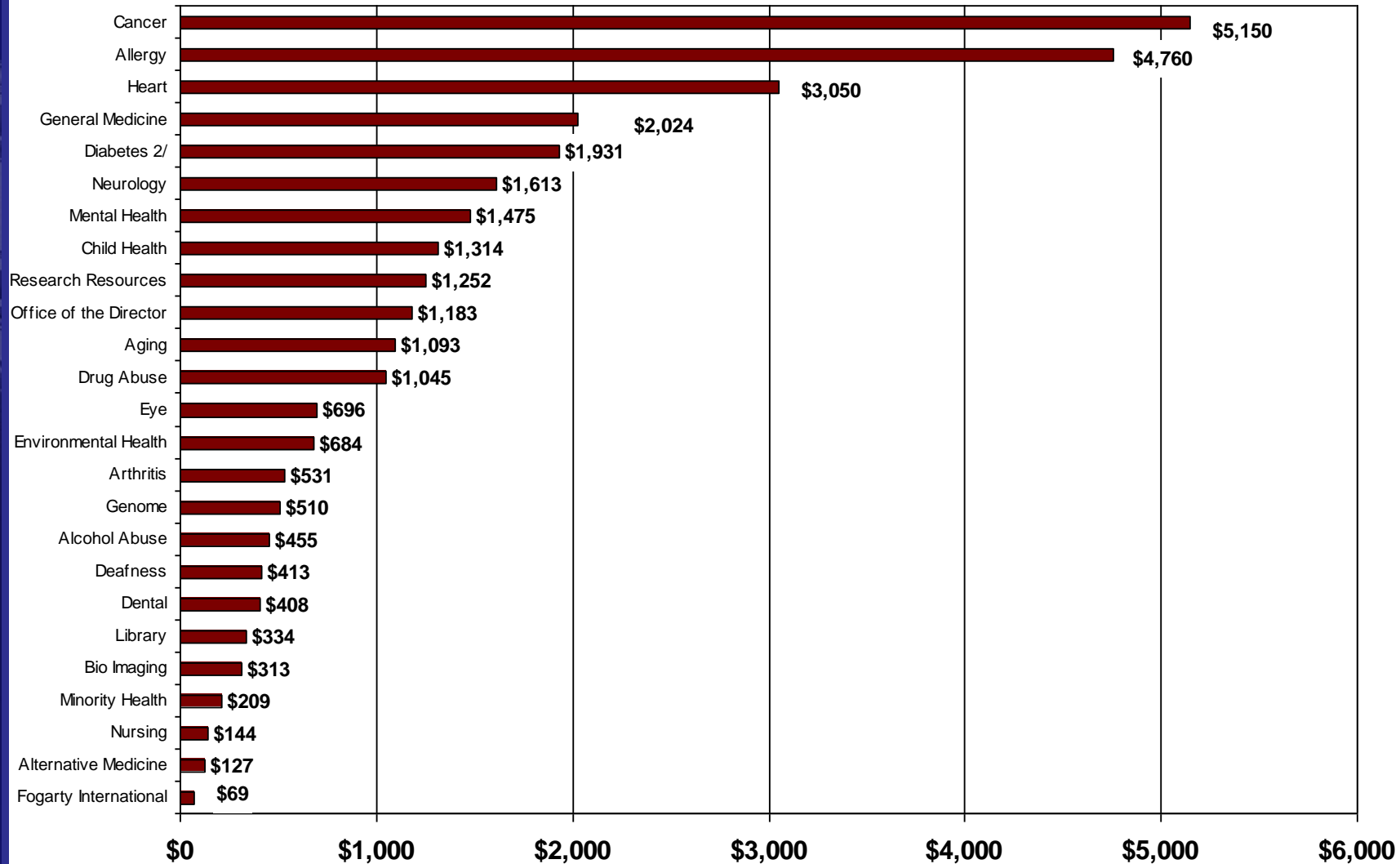
~ Dr. Elias Zerhouni

Testimony before the Committee on Energy and Commerce,  
Subcommittee on Health, United States House of  
Representatives  
March 17, 2005

# Budgets and Funding as Reflections of NIH's Priorities: Differing Perspectives

- By Institute, Center, Office
- By Mechanism
- By Spending at and to Entities Outside NIH
- By Research/Disease Areas
- By Likelihood of Application Being Funded
- By Disease Burden

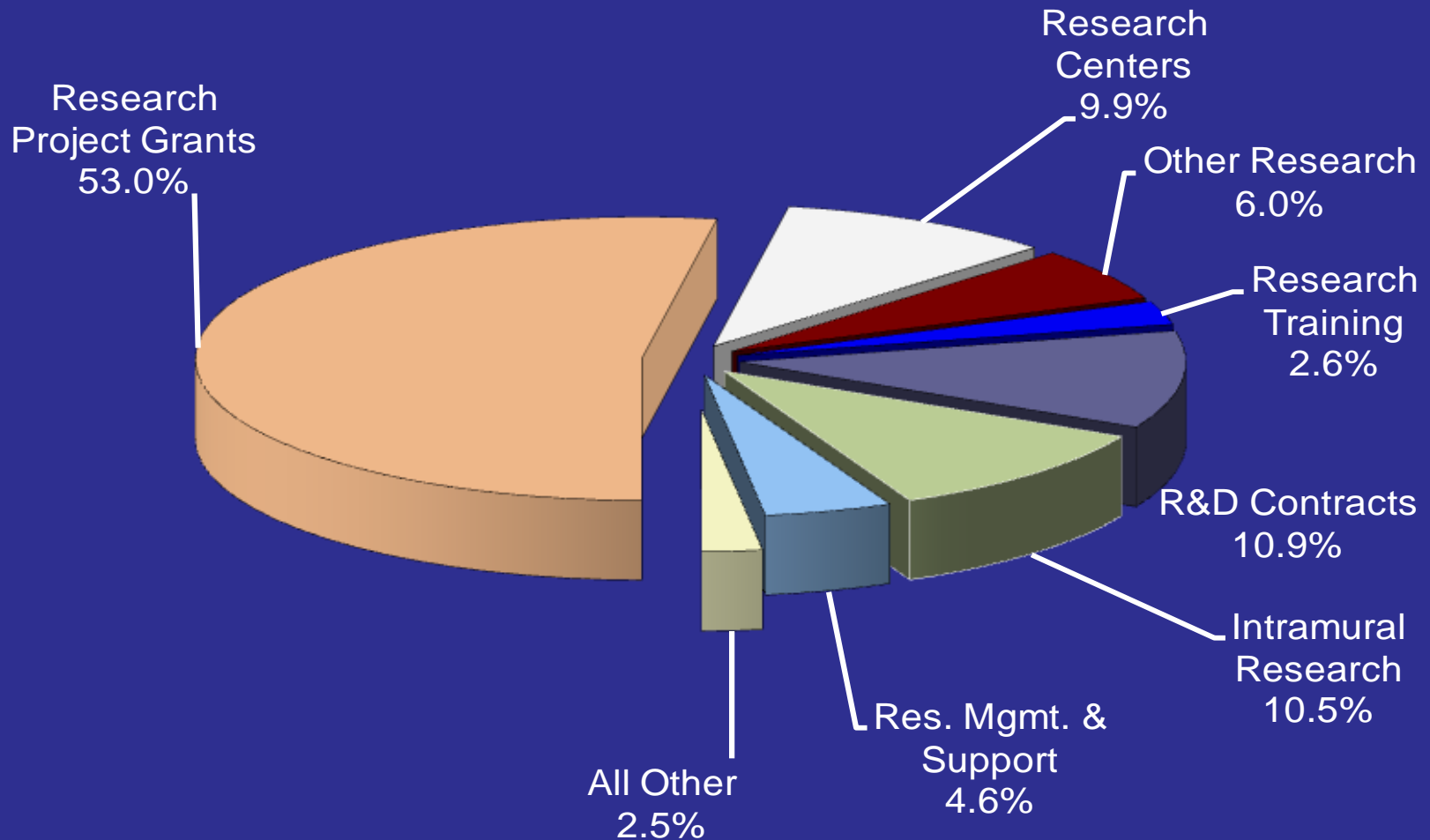
# FY 2010 President's Budget NIH Funding By Institute/Center<sup>1</sup> (\$ in Millions)



1. Includes funding for Type 1 Diabetes.

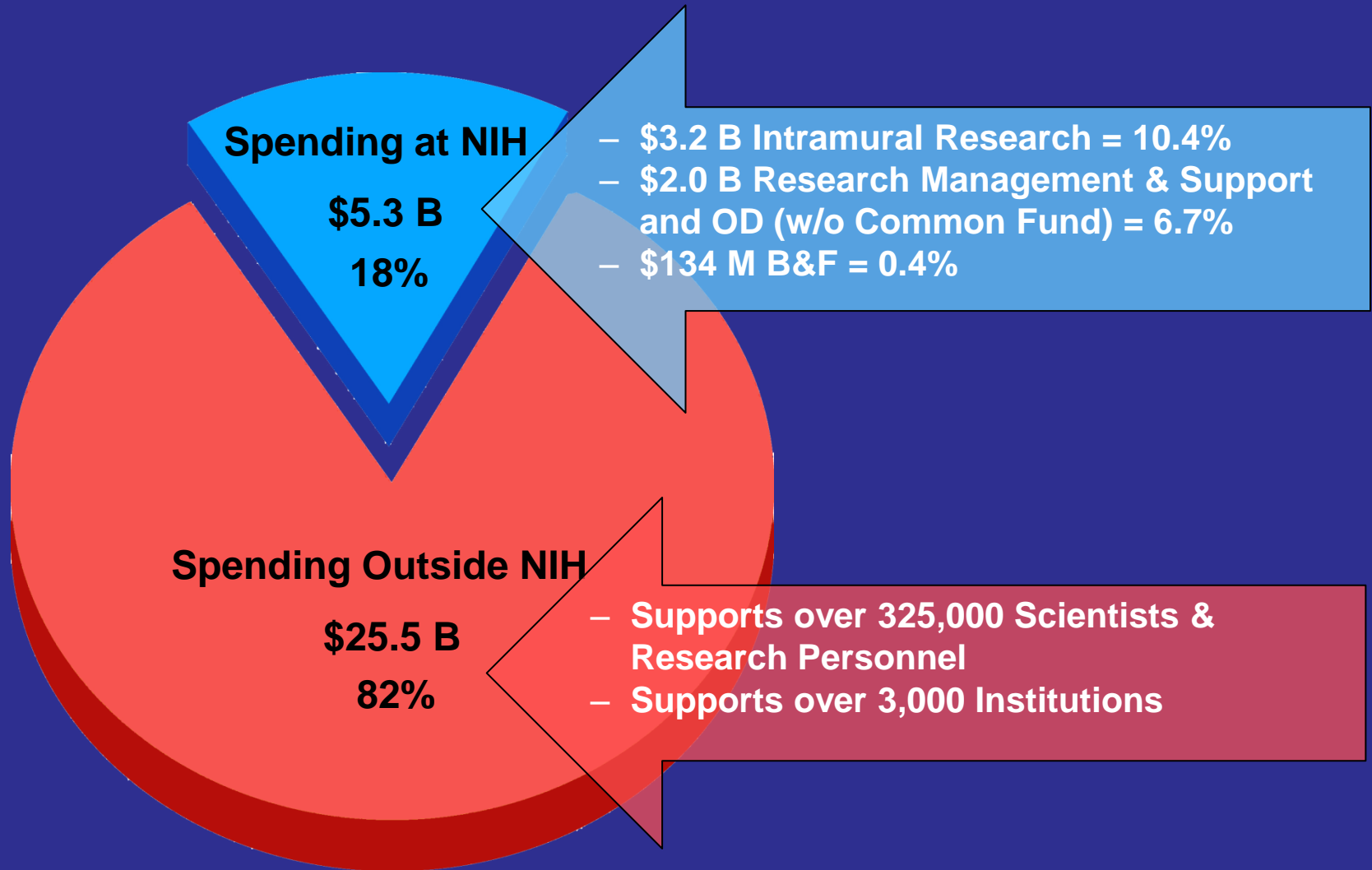
# FY 2010 President's Budget Request

## NIH Budget Authority \$30,759M

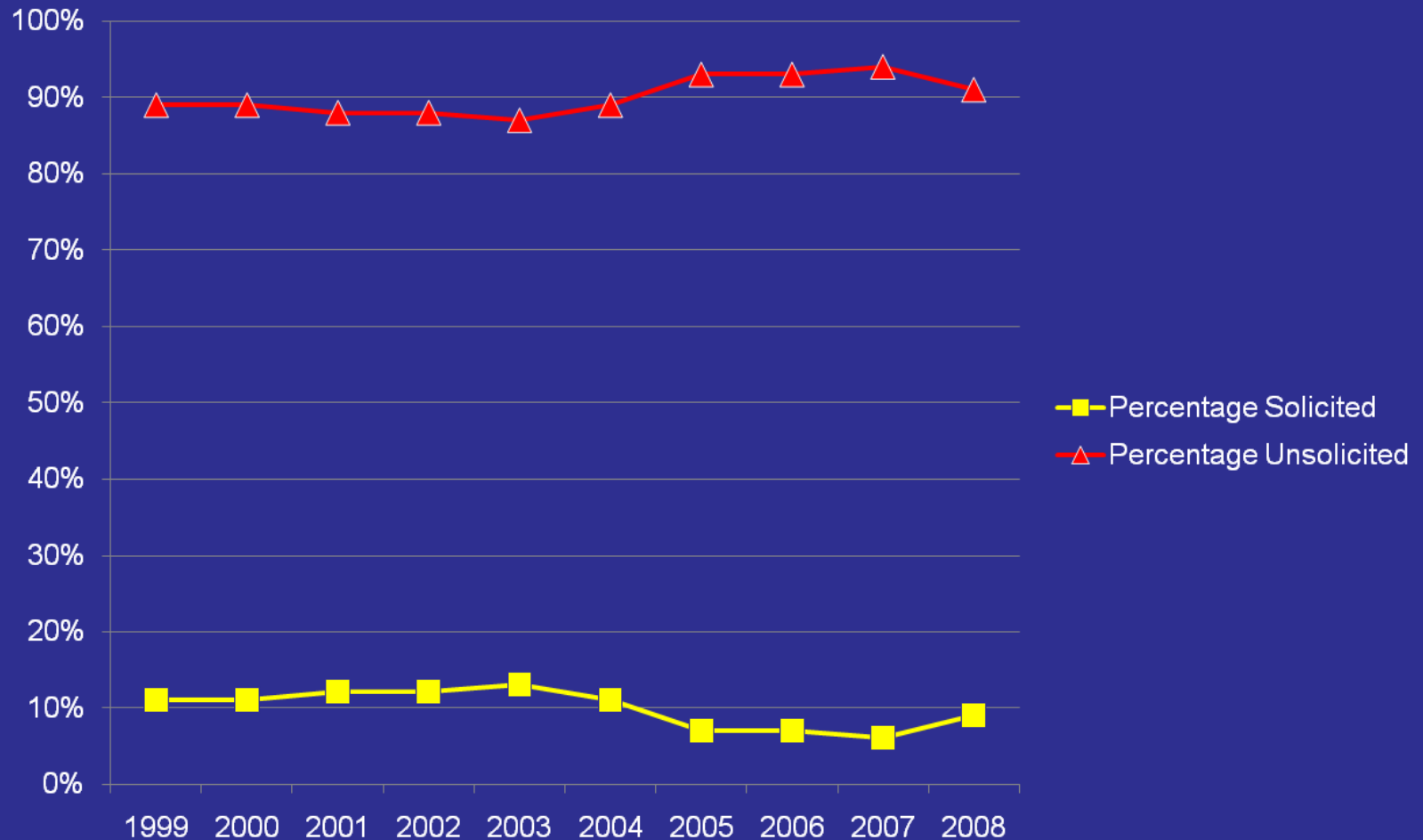


# NIH Funding by Mechanism

## FY 2010: \$30.759 B

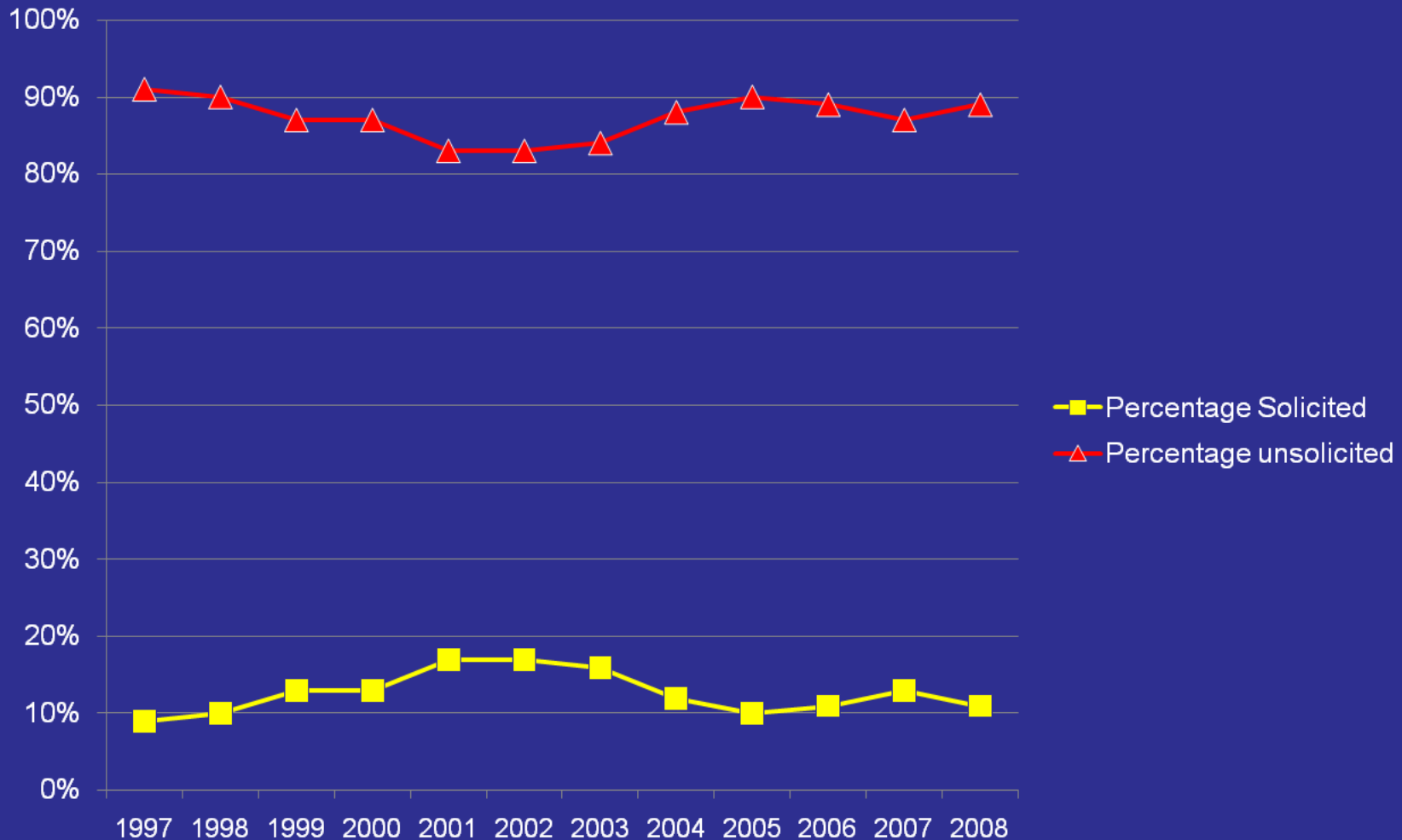


# Trends in investigator-initiated (RO-1 equivalents) vs. NIH targeted research funding





# Trends in investigator-initiated (Research Project Grants) vs. NIH targeted research funding

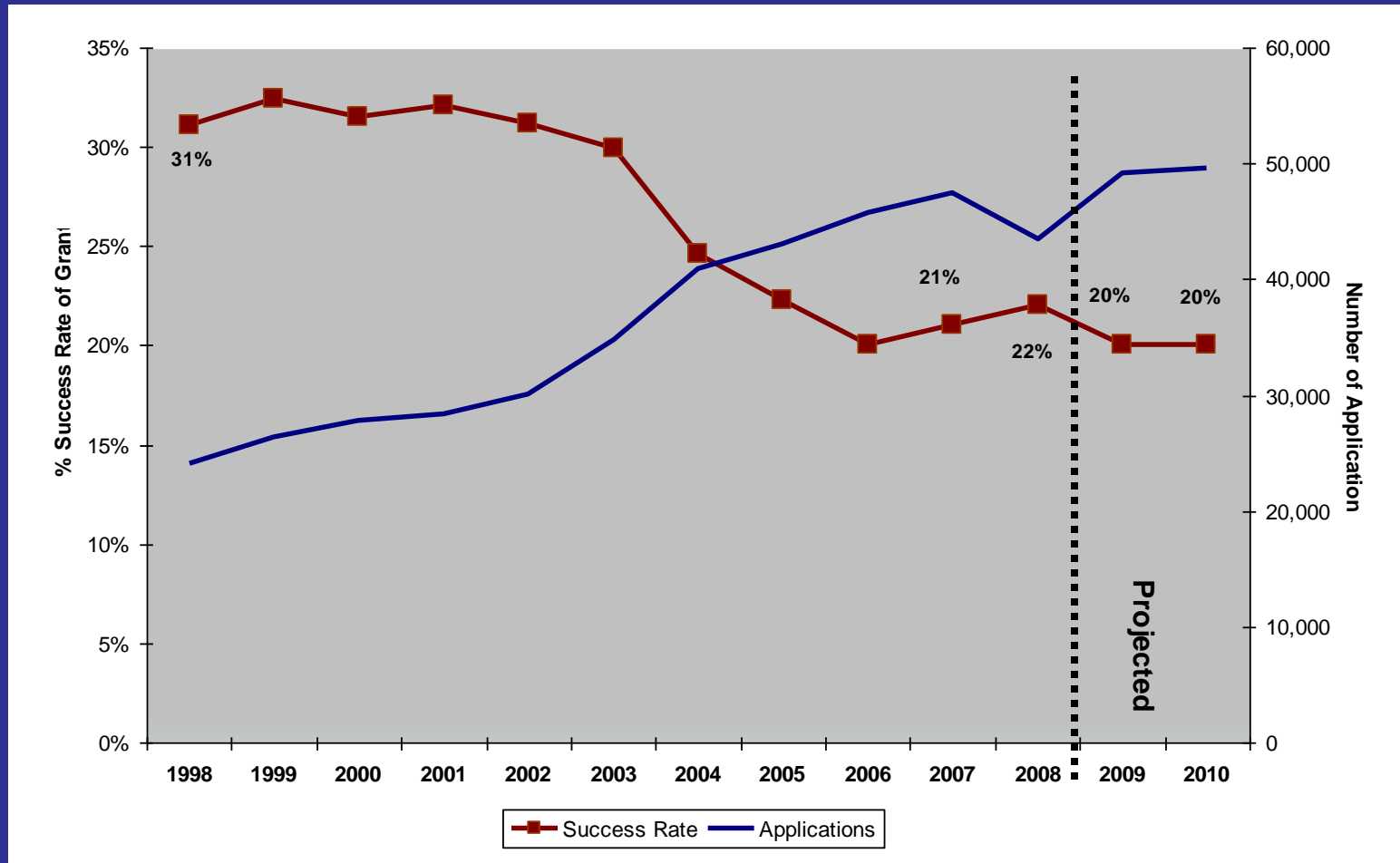


# NIH Funding in 2008-2010: Sample of Disease/Research Area

Research/Disease Areas (Dollars in millions and rounded)	FY 2008 Actual	FY 2009 Estimated	FY 2010 Estimated
Acute Respiratory Distress Syndrome	\$82	\$84	\$85
Agent Orange & Dioxin	\$13	\$14	\$14
Aging	\$1,965	\$2,019	\$2,045
Alcoholism	\$452	\$466	\$473
Allergic Rhinitis (Hay Fever)	\$6	\$6	\$6
ALS	\$43	\$44	\$45
Alzheimer's Disease	\$412	\$423	\$428
American Indians / Alaska Natives	\$142	\$147	\$149
Anorexia	\$7	\$7	\$7
Anthrax	\$134	\$137	\$139
Antimicrobial Resistance	\$228	\$234	\$237
Aphasia	\$22	\$22	\$23
Arctic	\$22	\$23	\$23
Arthritis	\$232	\$238	\$241
Assistive Technology	\$215	\$221	\$224

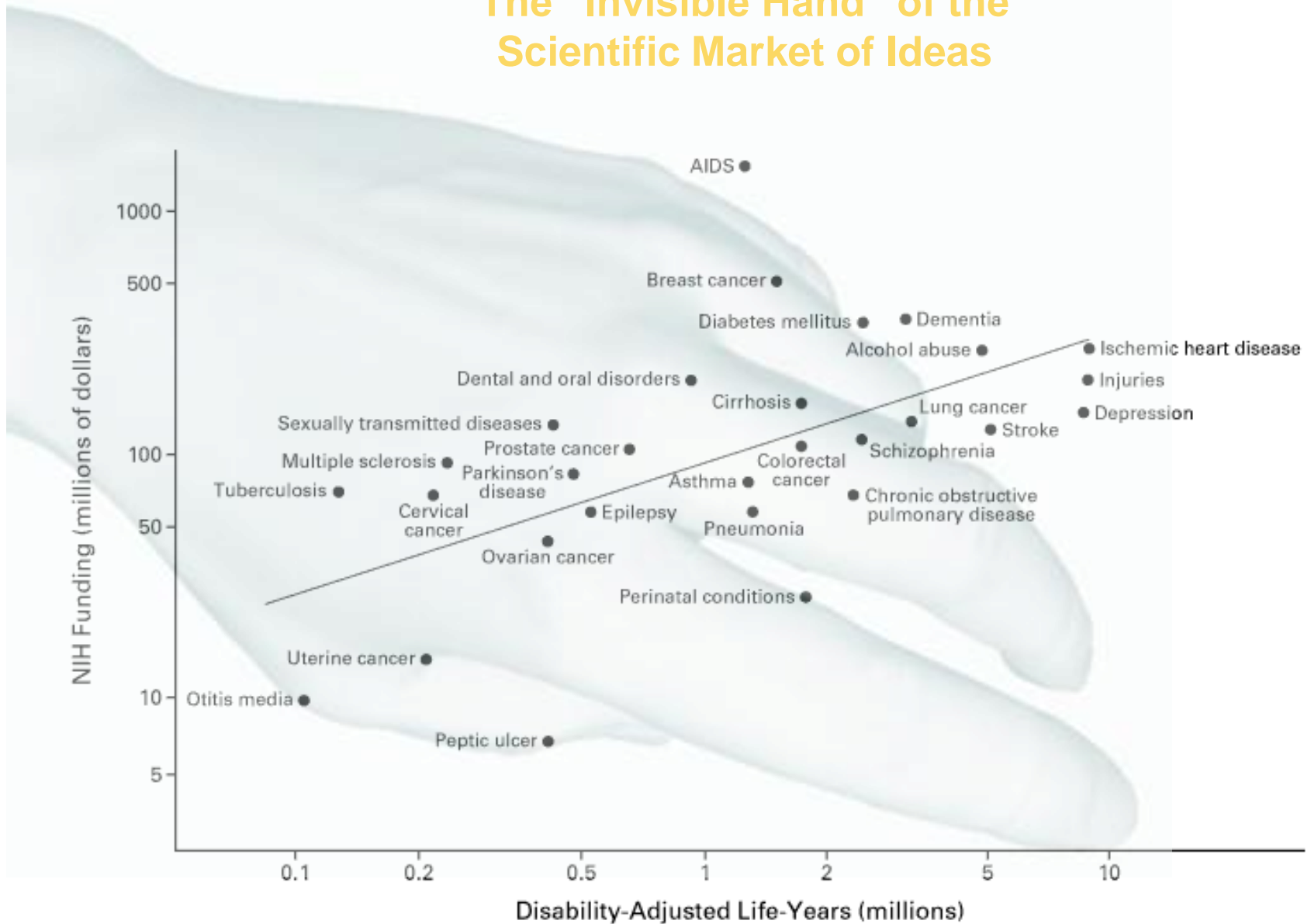
Full list can be accessed at: <http://report.nih.gov/rcdc/categories/>

# National Research Capacity and Demand for Grants Surges at End of Doubling Period, Success Rates Fall then Flatten



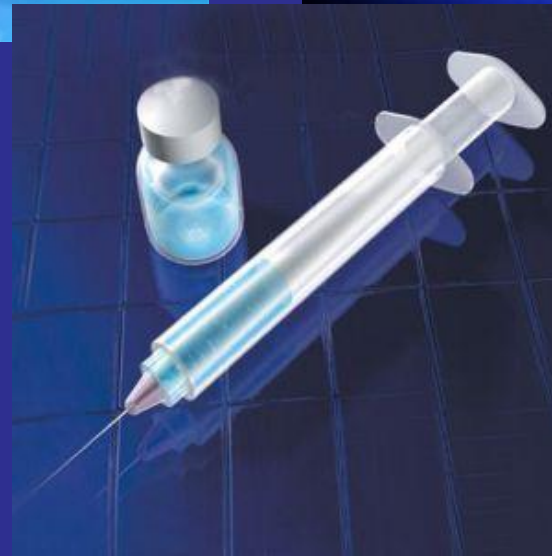
\* Not adjusted for ARRA

## The “Invisible Hand” of the Scientific Market of Ideas



Source: Gross, Cary P., M.D., et al., (1999). The relation between funding by the National Institutes of Health and the burden of disease. *New England Journal of Medicine*, 340(24); 1881-1887.

# Need to Be Able to Prepare for and Respond to Other Important Public Health Issues

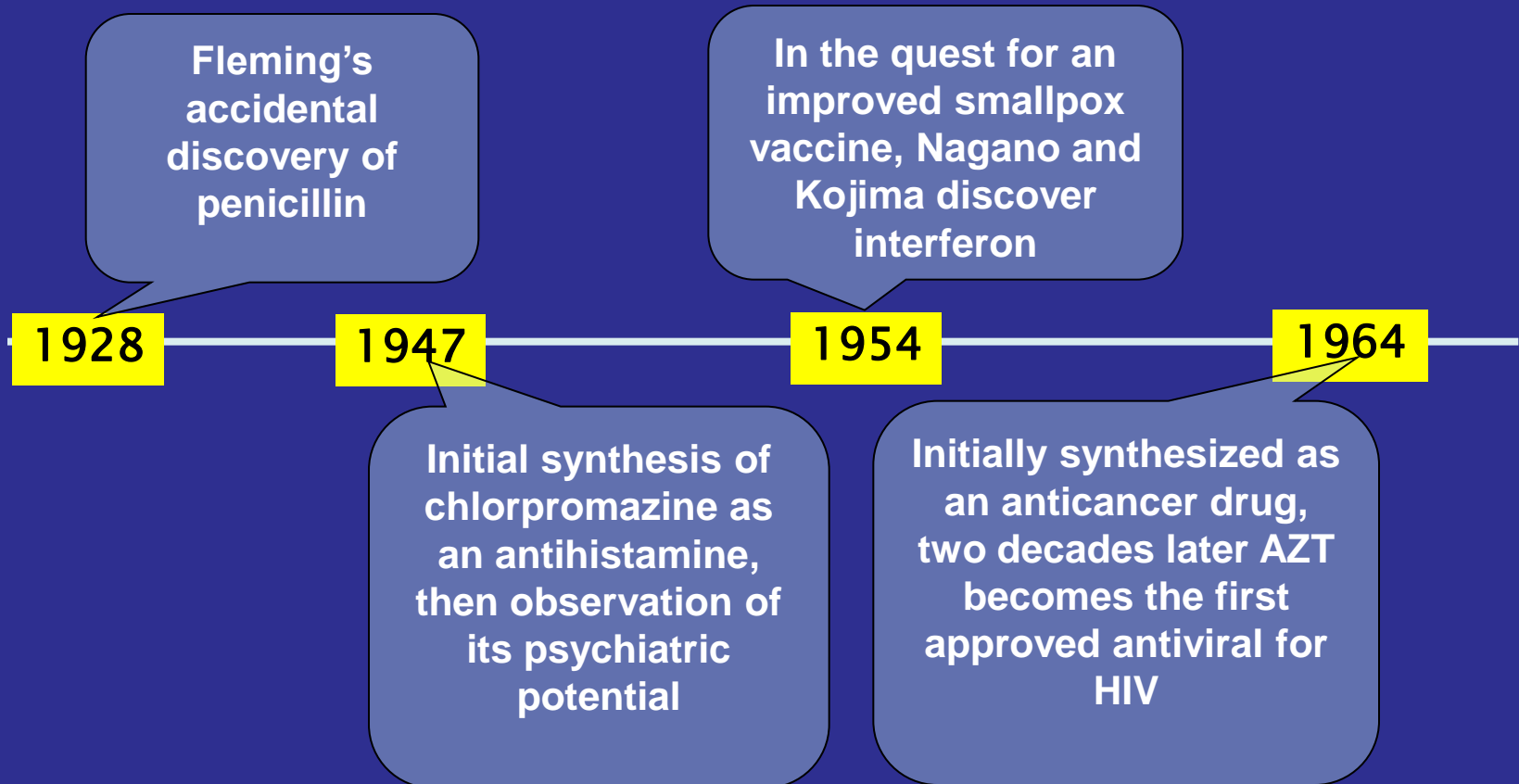


# Principles and Imperatives for Priority Setting

- Necessary to ensure that the NIH research portfolio:
  - addresses national public health needs,
  - capitalizes on important scientific opportunities,
  - addresses current and potential needs,
  - attends to research needs for rare and neglected diseases,
  - leverages common interests across IC, and
  - uses resources as effectively as possible.
- Processes for planning and priority setting must:
  - Continue to occur at multiple levels within the timeframe needed for progress in every phase and ultimately for implementation.
  - Be transparent and, along with their outcomes, effectively communicated to all necessary stakeholders.

# Principles and Imperatives for Priority Setting: Allowing for Serendipity

Planning and priority setting processes must also acknowledge and be responsive to *the phenomenon of serendipity in scientific discovery*



# Improving the Process of Priority Setting: Future Directions

- Key inputs will be better data on the research supported/conducted by NIH and on public health needs.
- Better means for comparing disease and disability burdens (current and anticipated) with information on ongoing scientific efforts and opportunities.
- Comparative analyses utilizing quantitative measures of the quality of science supported across ICs, e.g., range of priority scores, variation in levels of citation of published research.
- Better understanding of what other funders are doing (e.g., foundations, industry)

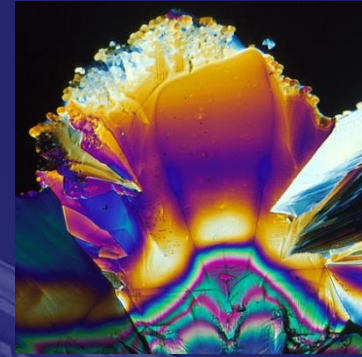


# Improving the Process of Priority Setting: Future Directions

- Trends in and comparisons across ICs in the balance of solicited vs. unsolicited research, use of program projects, center grants, cooperative agreements, contracts.
- Systematic analysis and review of the long-term outcomes of research funded by NIH.

# Measures of NIH Success

- Discoveries that improve the practice of medicine
- World leadership in science and medicine
- Improved health and life expectancy
- Strength of U.S. universities, medical centers, and industry
- Continued support of Congress and the public



# NIH

*Transforming medicine and health through discovery*

