

# FY 2012 NIH Budget Roll-out

Francis S. Collins, M.D., Ph.D.

Director, NIH



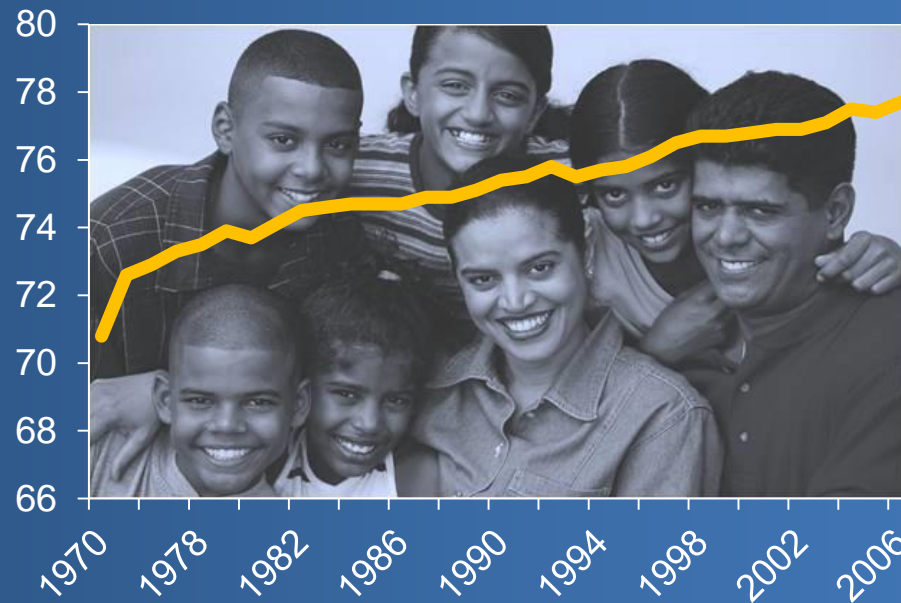
WINNING  
*the*  
FUTURE



“To win the future, America needs to out-educate, out-innovate, and out-build the rest of the world.”

— President Barack Obama, Weekly Address  
February 5, 2011

# The Benefits of Biomedical and Public Health Advances: *U.S. Life Expectancy*



**Life expectancy gains worth ~\$3.2 trillion annually**

## **NIH Accomplishments**

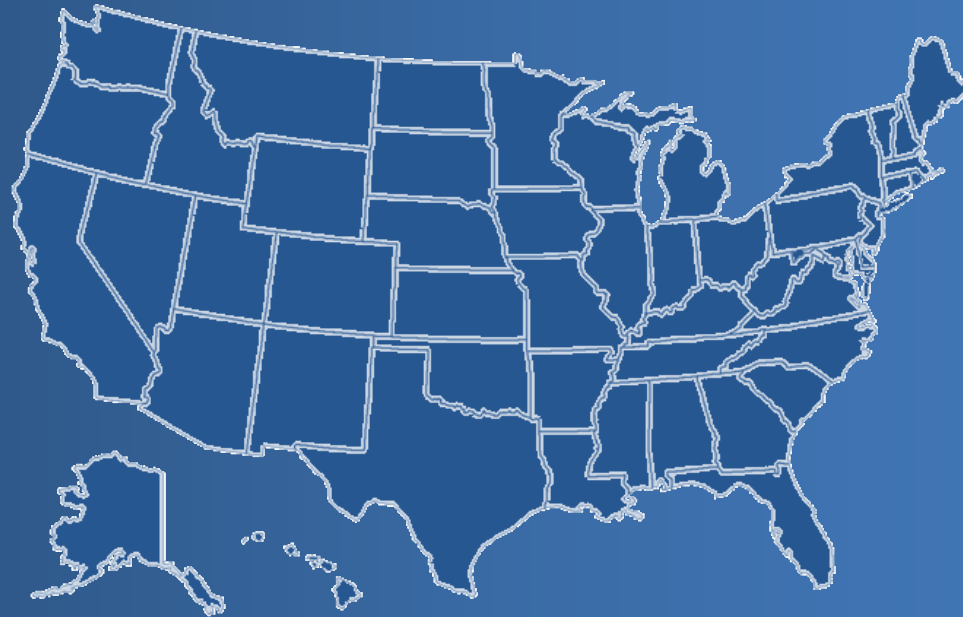
Reduction in deaths from:

- Heart disease
- Stroke
- HIV/AIDS

Increased survival rates for:

- Breast cancer
- Cervical cancer
- Colon cancer

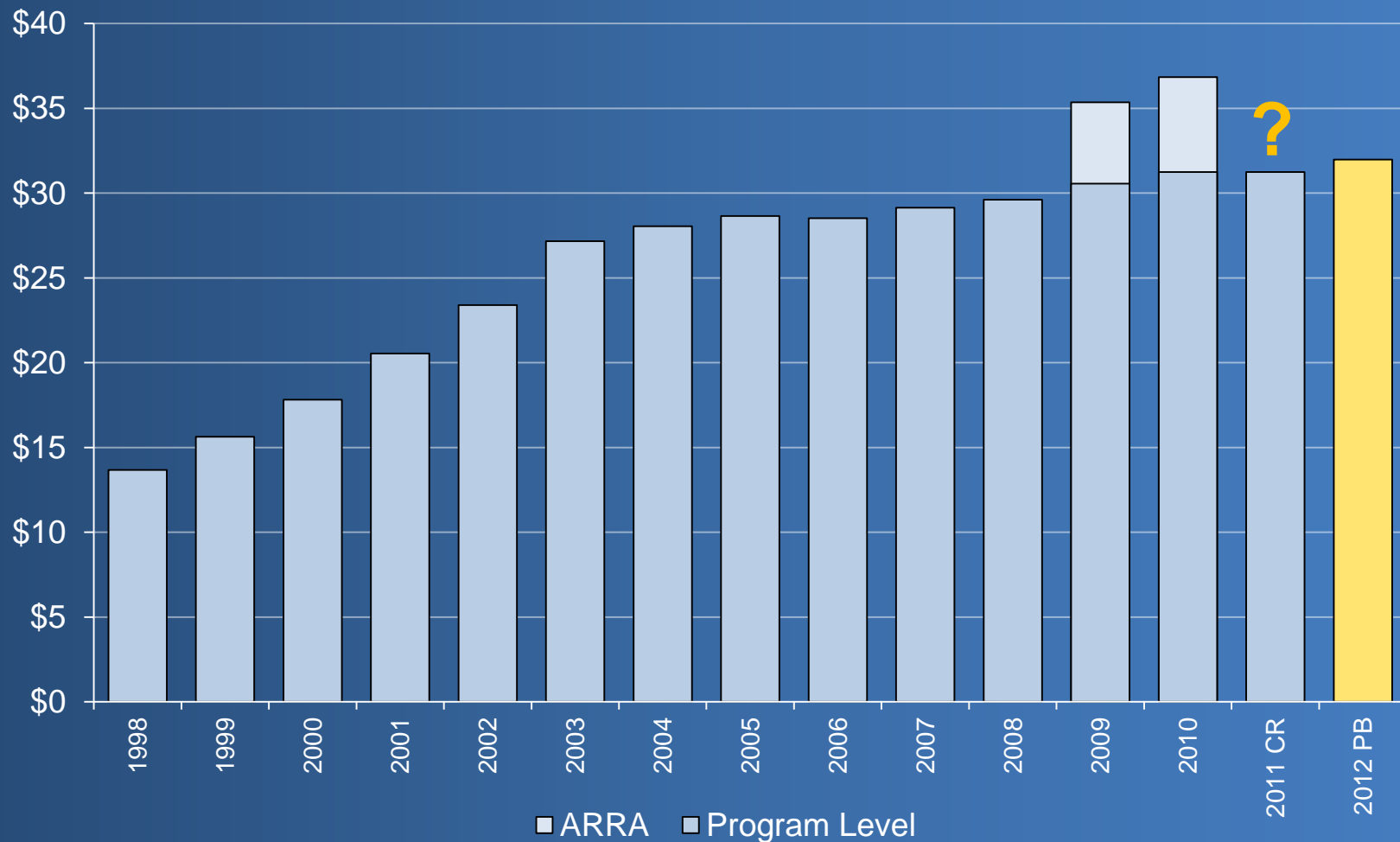
# Impact of NIH Funding



# NIH FY 2012 President's Budget Request

## \$31,987 Million

*Increase of \$ 745 M or 2.4% over FY 2010 Actuals*

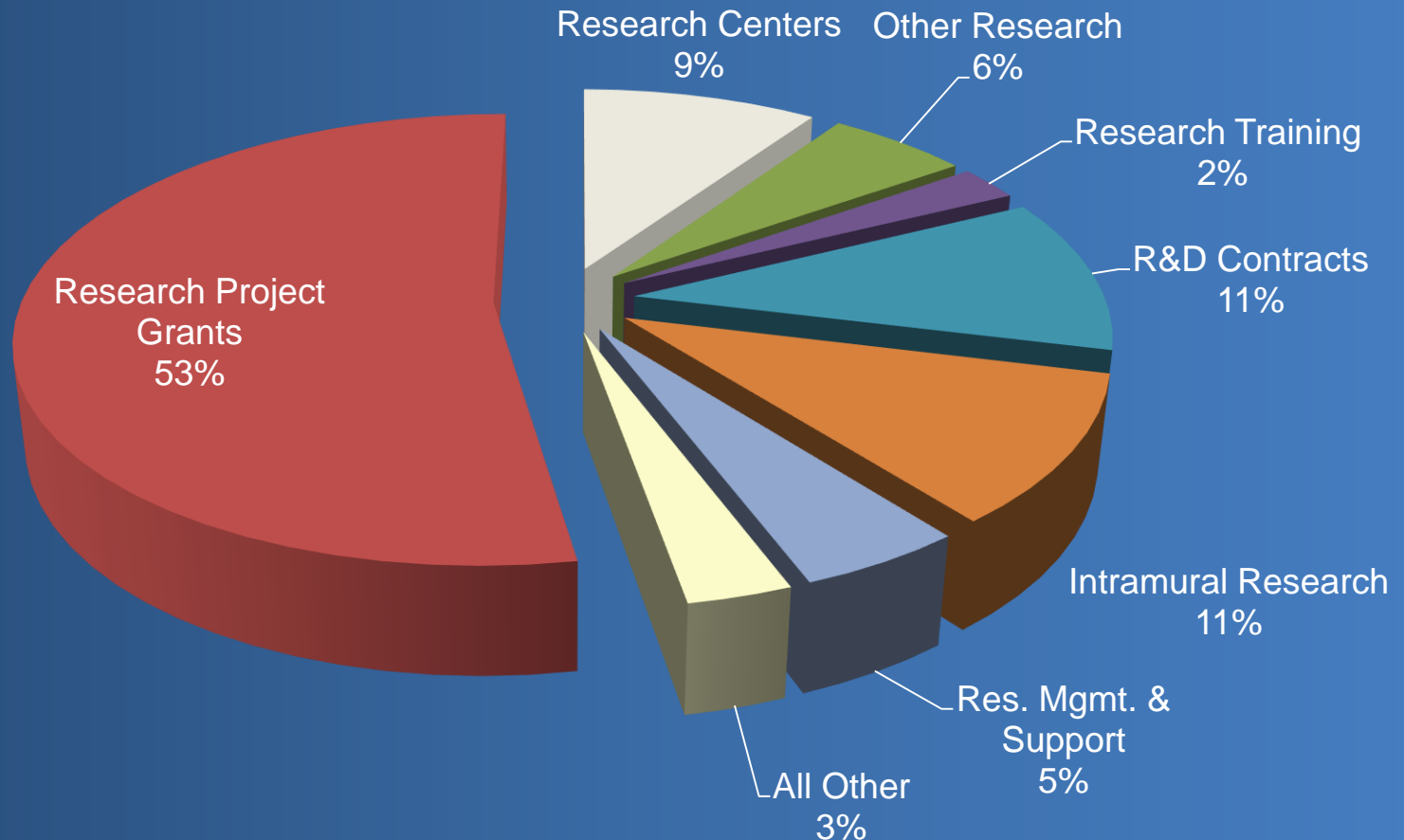


*Note: ARRA funds were appropriated in FY 2009*

# FY 2012 President's Budget Request

NIH Total Program Level

\$31,987 Million

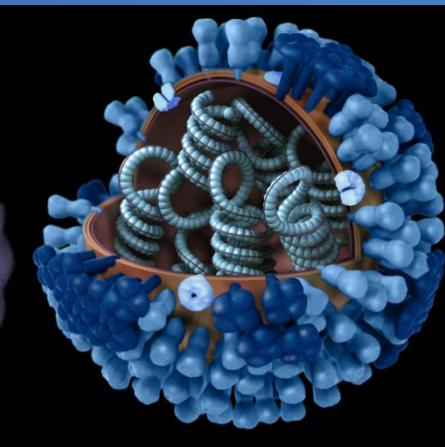
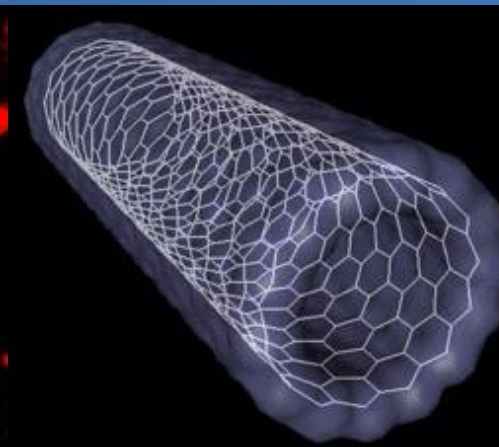
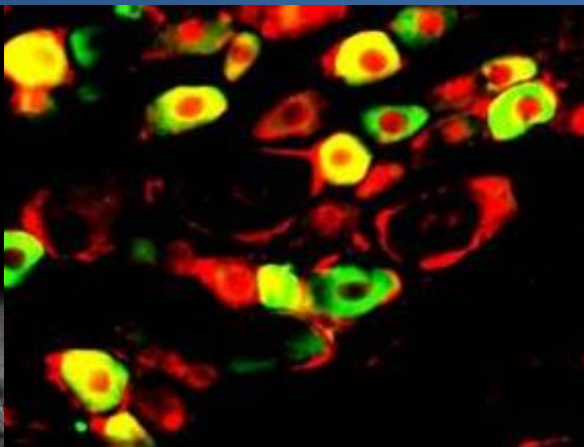
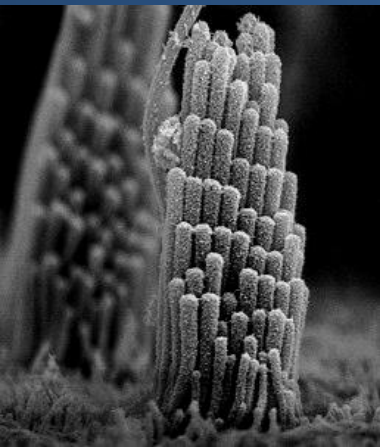


# NIH Advances in Basic Research 2010

*132 grantees or trainees have become Nobel Laureates  
Most Recent: Ei-ichi Negishi of Purdue University*

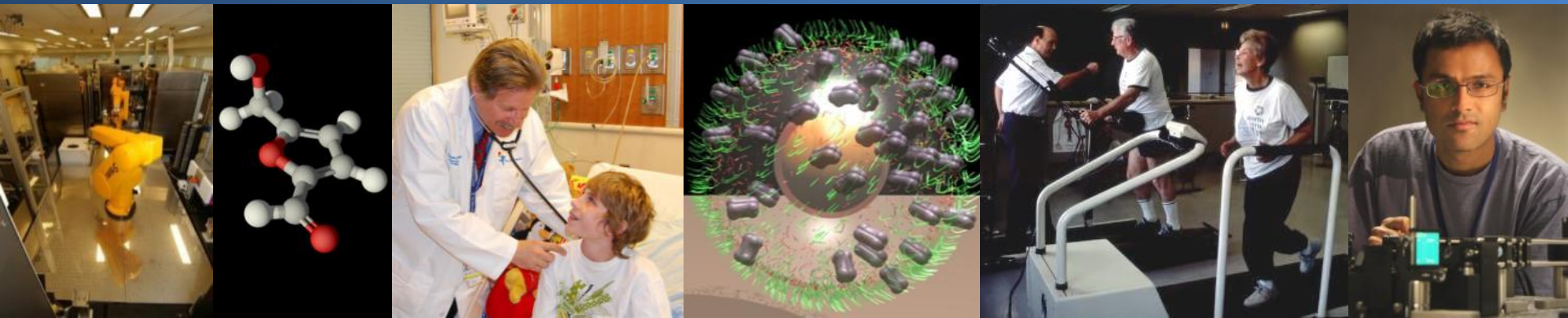


- Generation of “hair cells” essential for hearing
- Demonstration of the power of resolvins to control pain
- Creation of better nanotubes for drug delivery
- Identification of target for universal flu vaccine



# NIH Investments in Innovation — FY 2012

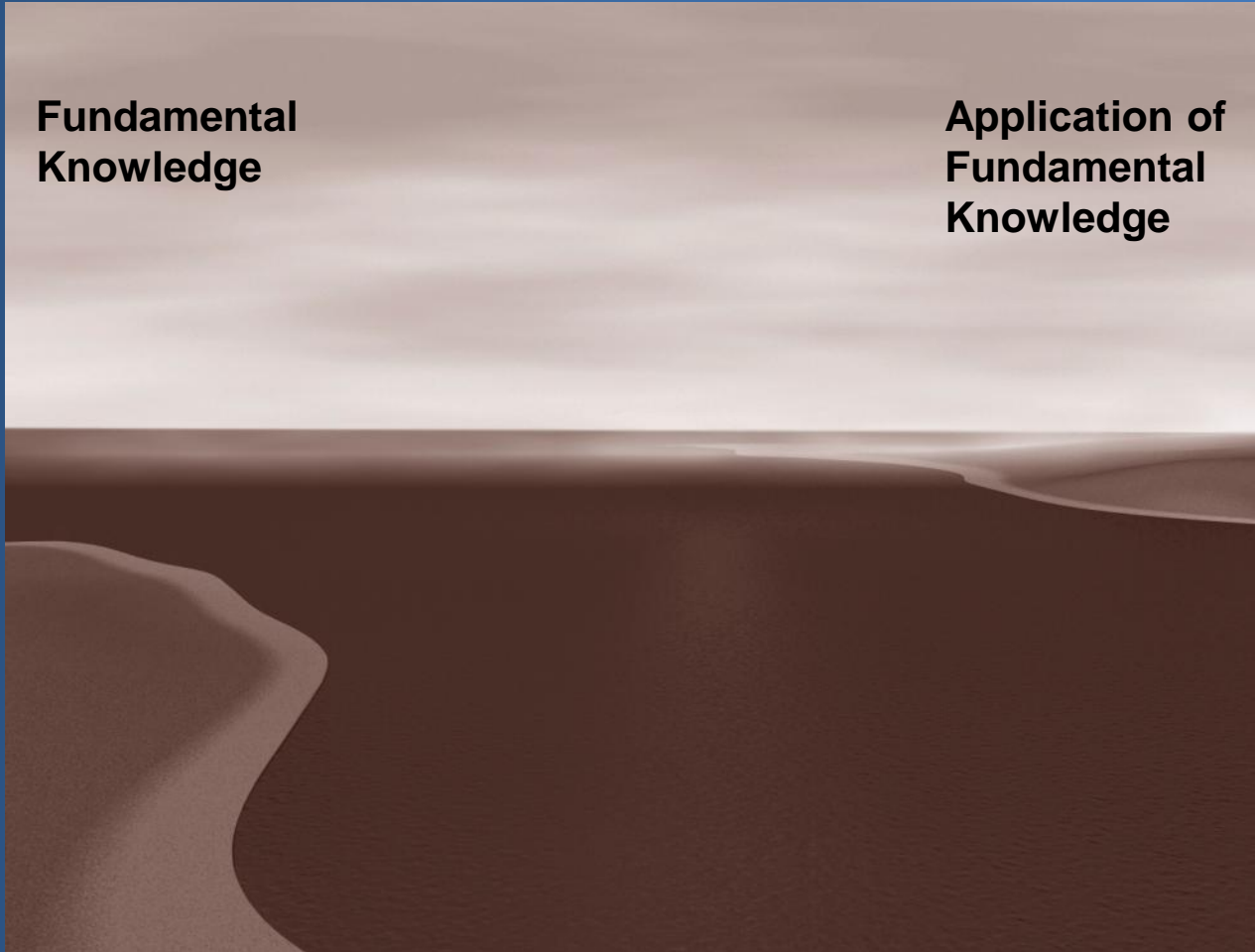
- Advancing Translational Sciences
- Accelerating Discovery Through Technology
- Enhancing the Evidence Base for Health-Care Decisions
- Encouraging New Investigators and New Ideas





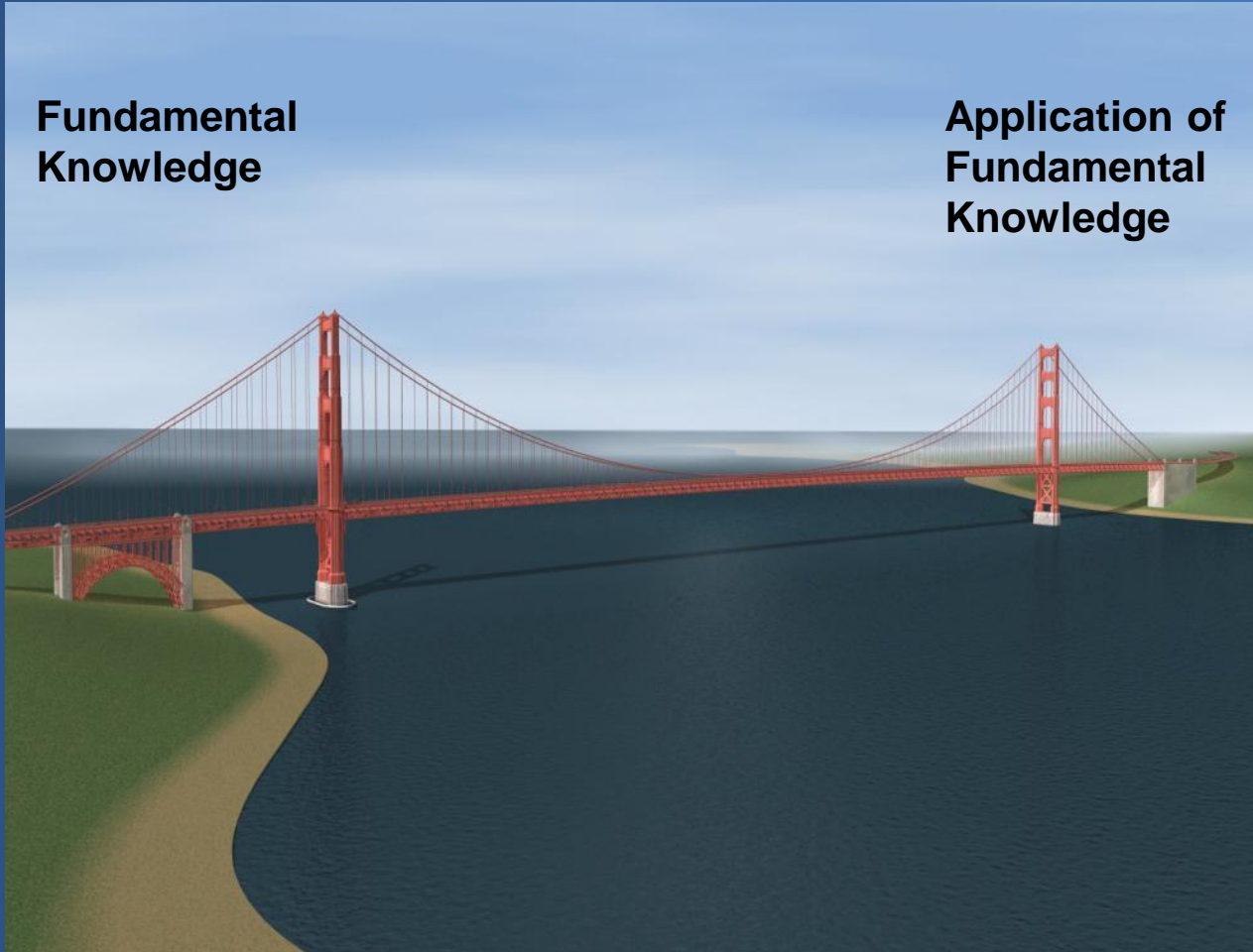
**Fundamental  
Knowledge**

**Application of  
Fundamental  
Knowledge**



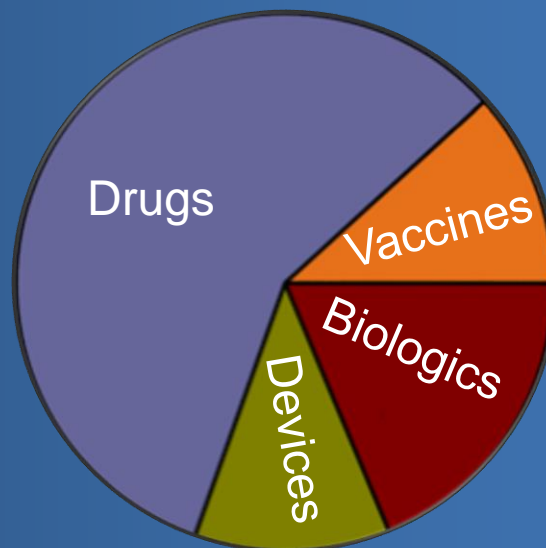
**Fundamental  
Knowledge**

**Application of  
Fundamental  
Knowledge**



# Therapeutics Development at NIH

- A 2010 trans-NIH inventory of activities relevant to therapeutics development found:
  - Substantial investments in therapeutics development research
  - Approximately 65% for preclinical research; 35% clinical research
  - 550 activities reported of varying sizes and areas of emphasis



Distribution of Investment

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

## The Role of Public-Sector Research in the Discovery of Drugs and Vaccines

Ashley J. Stevens, D.Phil., Jonathan J. Jensen, M.B.A., Katrine Wyller, M.B.E.,  
Patrick C. Kilgore, B.S., Sabarni Chatterjee, M.B.A., Ph.D.,  
and Mark L. Rohrbaugh, Ph.D., J.D.

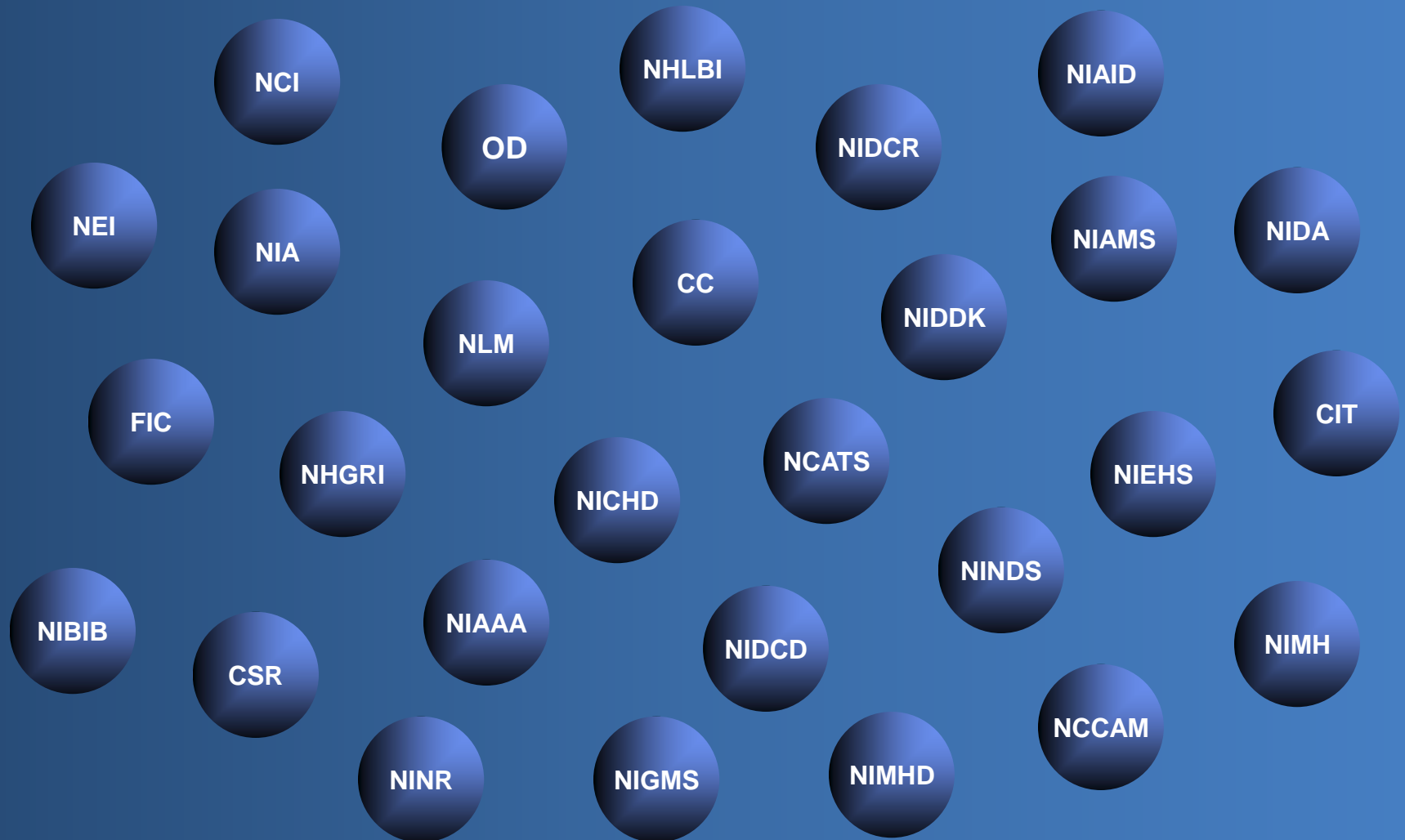
N ENGL J MED 364;6 NEJM.ORG FEBRUARY 10, 2011

# National Center for Advancing Translational Sciences (NCATS)

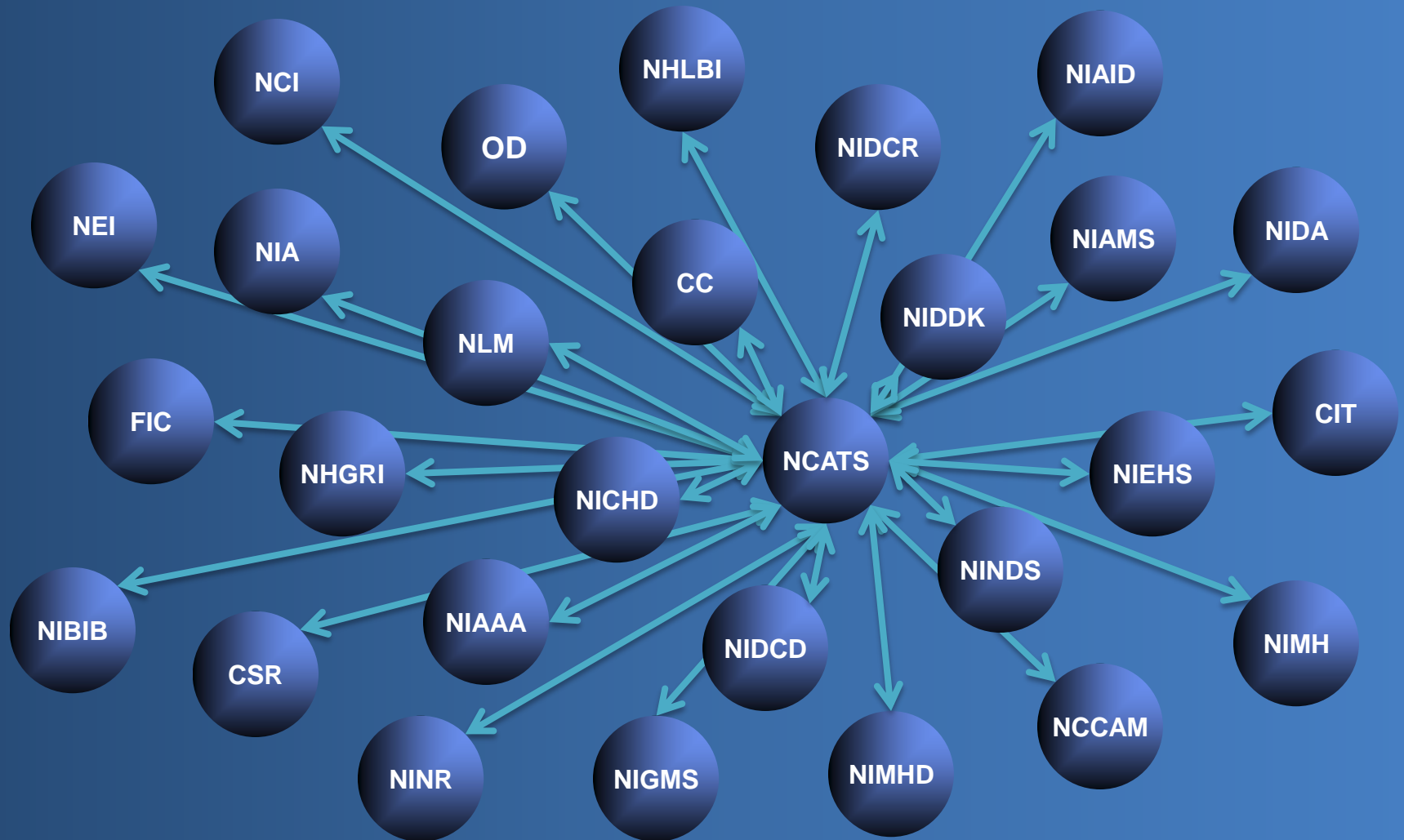
## *Why now? Rationale for Establishment*

- Deluge of new discoveries of potential targets
- Opportunity to serve as a catalyst to further enhance longstanding therapeutic research programs in NIH Institutes and Centers
- Opportunity to conduct process engineering on therapeutic development pipeline in an open-access model, to provide innovation, and to identify predictors of success
- Unexplored opportunities for therapeutics for many conditions, especially rare and neglected diseases
- Reduction in R&D investments in pharma; limited willingness of venture capital to invest in long-term projects
- Opportunity to “de-risk” model projects for commercial investment, through a partnership model with private sector and with effective coordination with FDA regulatory science
- Need for enhanced training in relevant disciplines

# NIH Institutes and Centers



# Catalyzing Collaborations Within NIH



# NCATS Research Programs

- Cures Acceleration Network
- Molecular Libraries Program
- Therapeutics for Rare and Neglected Diseases
- Rapid Access to Interventional Development
- Clinical and Translational Science Awards
- FDA-NIH Regulatory Science
- Additional programs identified by NCATS Working Group





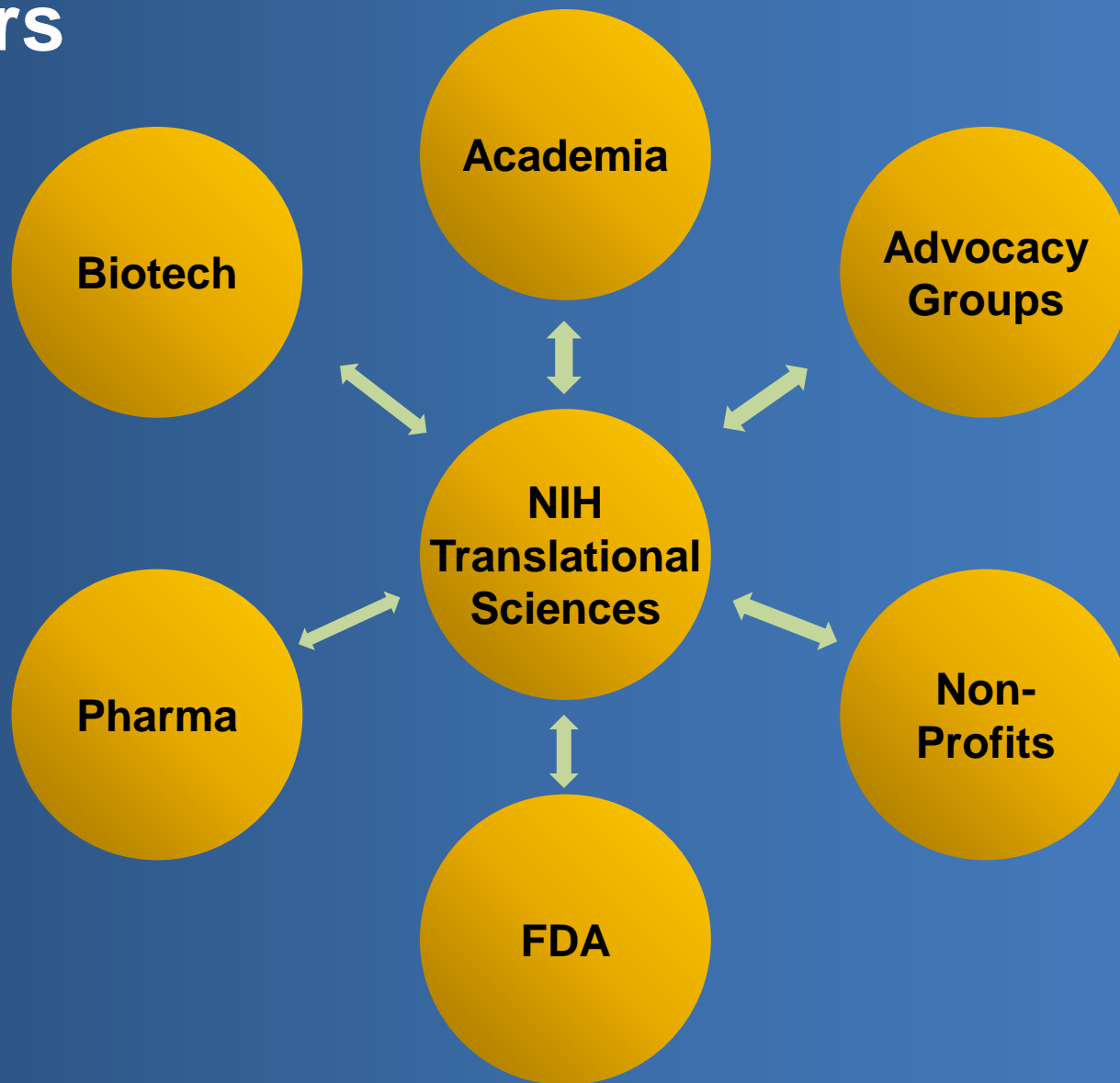
# A Bold New Paradigm: Cures Acceleration Network

*\$100 Million in FY 2012 budget request*

- Grant Awards:
  - Up to \$15 million per award per fiscal year
- Partnership Awards:
  - \$1 match for every \$3 from NIH
  - Up to \$15 million per award per fiscal year
- Flexible Research Awards:
  - DARPA-like authority
  - Not to exceed 20% of total appropriated funds in any fiscal year

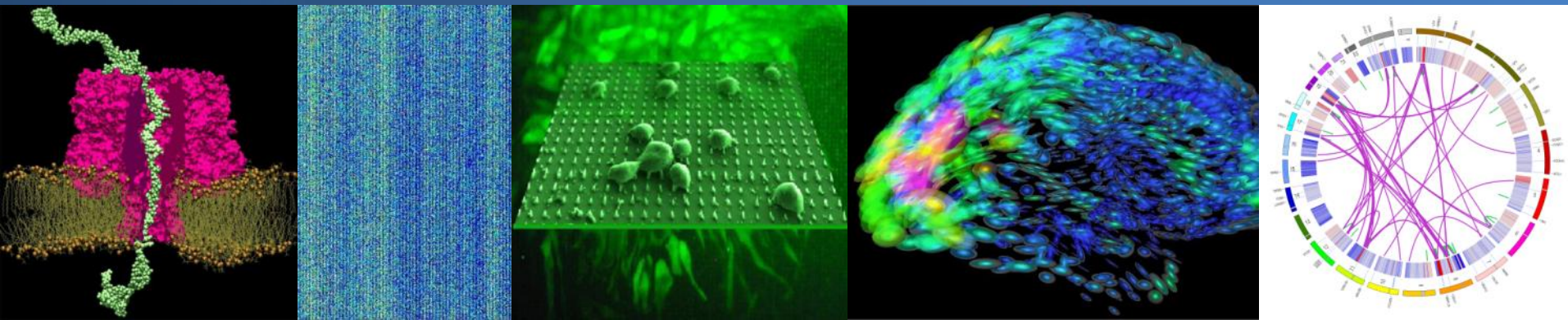


# Catalyzing Collaborations With External Partners



# Technologies to Accelerate Discovery

- DNA Sequencing
- Microarray Technology
- Nanotechnology
- New Imaging Modalities
- Computational Biology



# nature

THE INTERNATIONAL WEEKLY JOURNAL OF SCIENCE

## THE FUTURE IS BRIGHT

Reflections on the first ten  
years of the human genomics age



### GENOMICS

**THE END OF  
THE BEGINNING**  
*Eric Lander on the impact of  
the human genome sequence*  
PAGE 187

### METHODS

**MORE BASES  
PER DOLLAR**  
*Elaine Mardis on the march  
of sequencing technology*  
PAGE 198

### HEALTH

**FROM LAB  
TO CLINIC**  
*A road map to  
genomic medicine*  
PAGE 204

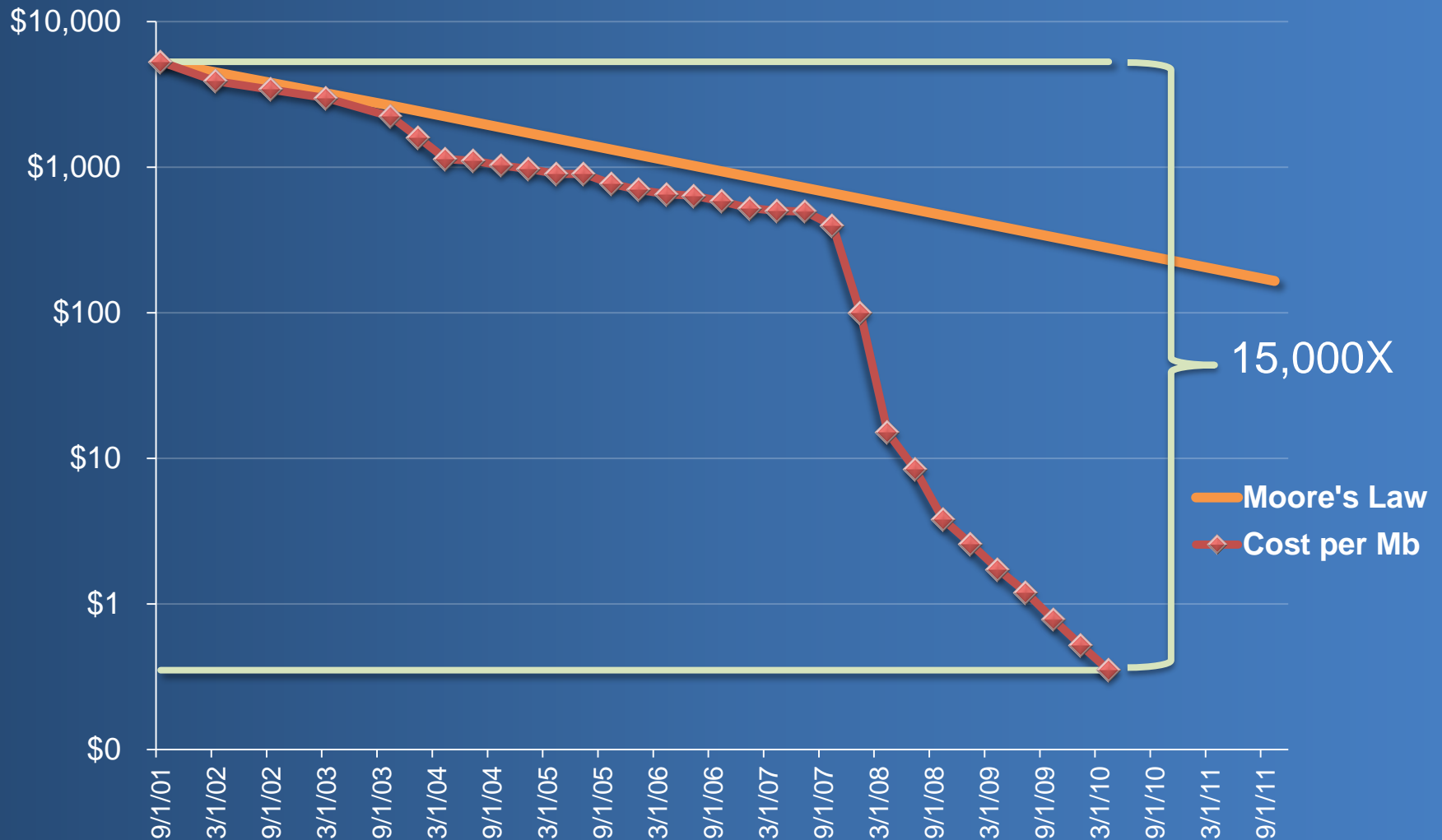
NATURE.COM/NATURE

10 February 2011 \$10



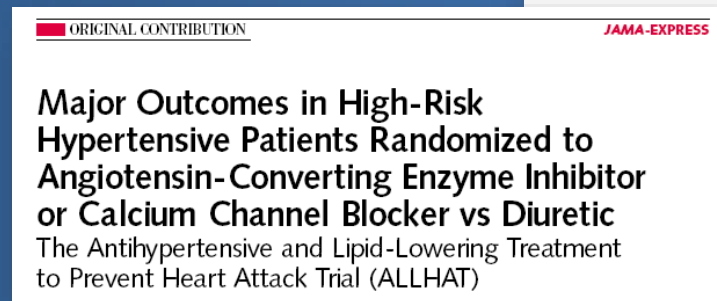
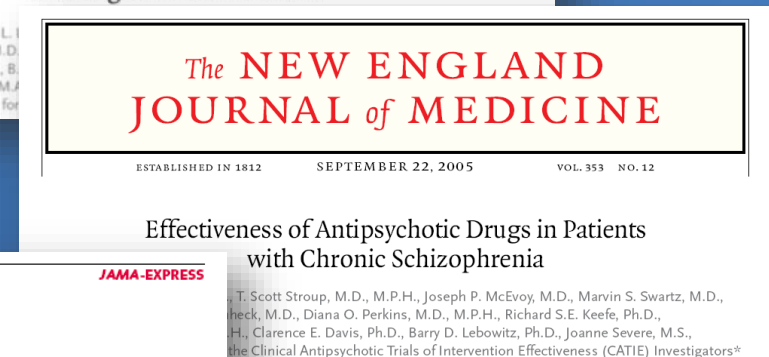
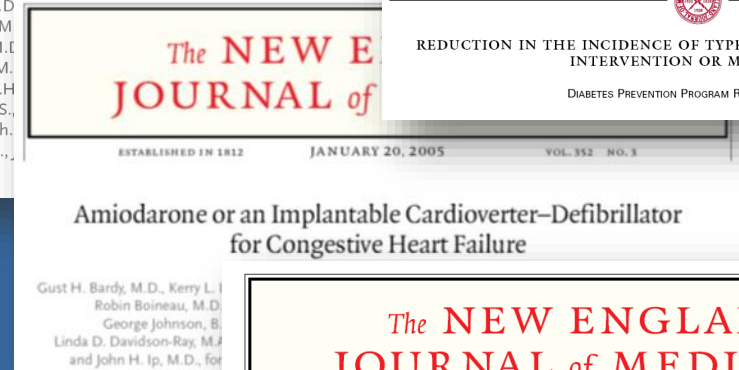
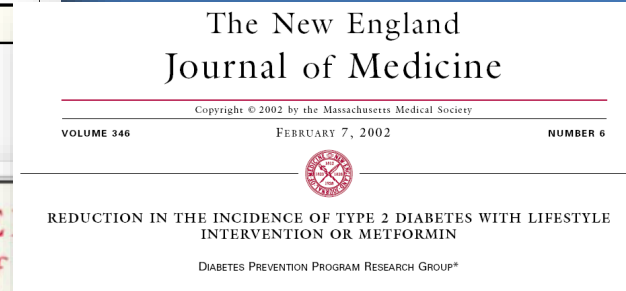
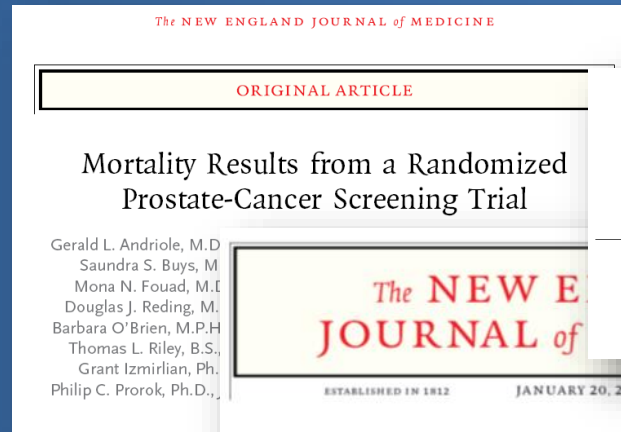
# Sequencing Costs Decrease Rapidly

Cost per Megabase of DNA Sequence

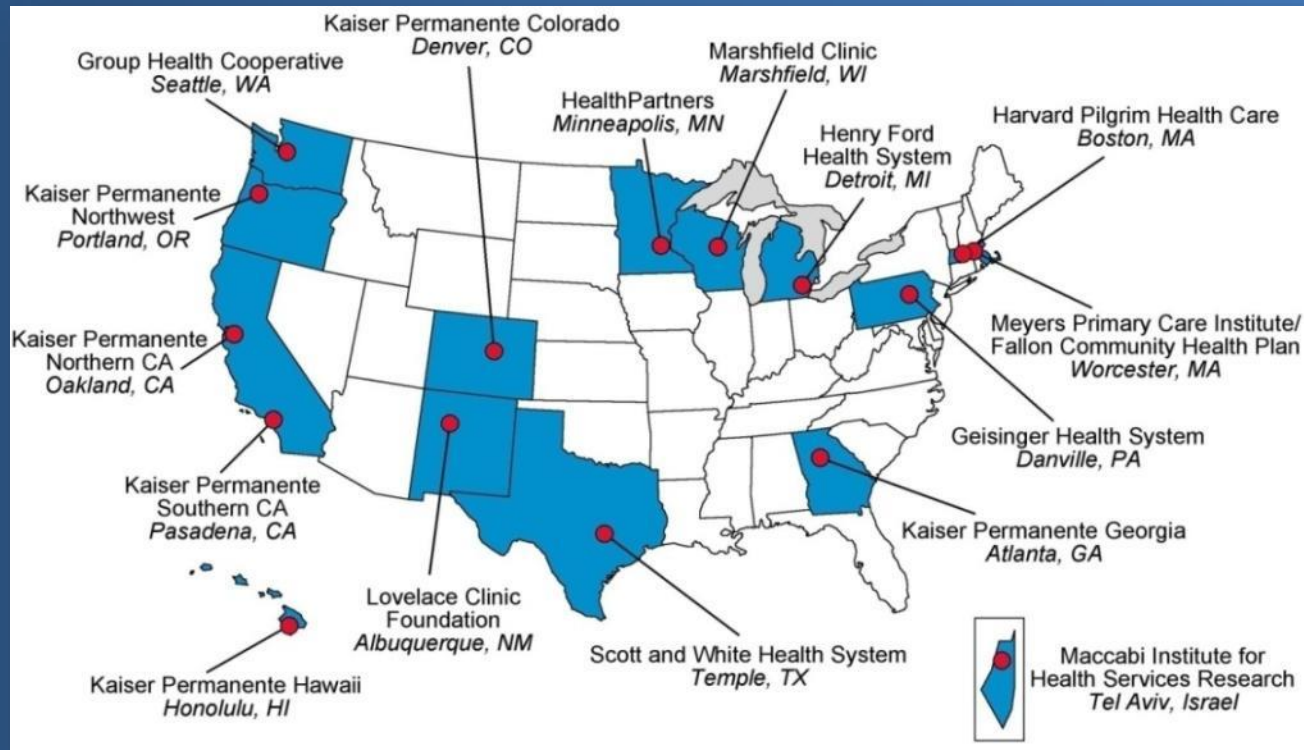


# Enhancing the Evidence Base for Health Care Decisions

- Prevention
- Diagnosis
- Treatment
- Behavior change
- Health systems
- Special populations



# HMO Research Network Collaboratory



- Network of 16 integrated health systems covering >13 million people
- Accelerate large epidemiology studies, clinical trials, and health care services research
- Focus on risk factors, rare diseases, patient accrual, and reimbursement models

# New Investigators, New Ideas

- NIH Director's New Innovator Awards
  - Supports exceptionally creative new investigators
  - Must be pursuing innovative, high-impact projects
- NIH Director's Early Independence Awards
  - Young scientists face a long (and lengthening) path from graduate trainee to independent researcher
  - Program provides mechanism to “skip the post-doc”







*“Cutting the deficit by gutting our investments in innovation and education is like lightening an overloaded airplane by removing its engine.*”



*It may make you feel like you're flying high at first, but it won't take long before you feel the impact.”*

— President Barack Obama,  
2011 State of the Union

# NIH...

## Turning Discovery Into Health

U.S. Department of Health & Human Services  
National Institutes of Health

