

FY 2012 NIH Budget Roll-out

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

Director, NIH



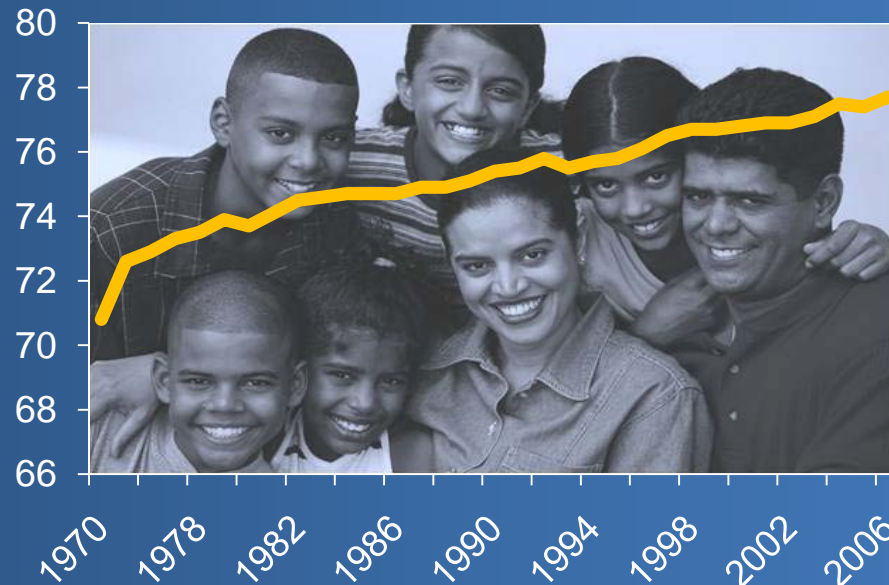
WINNING
the
FUTURE



“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

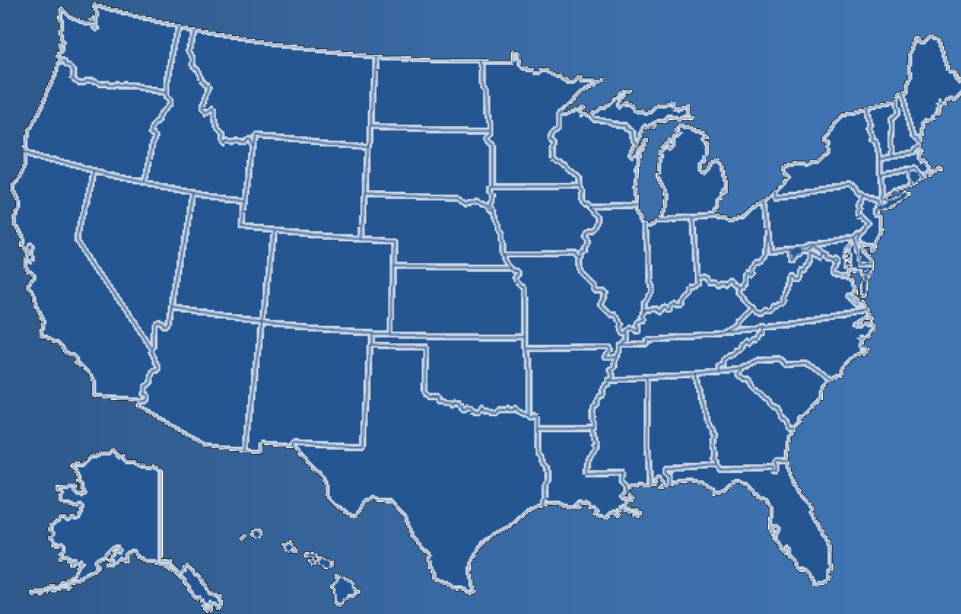
Reduction in deaths from:

- Heart disease
- Stroke
- HIV/AIDS

Increased survival rates for:

- Breast cancer
- Cervical cancer
- Colon cancer

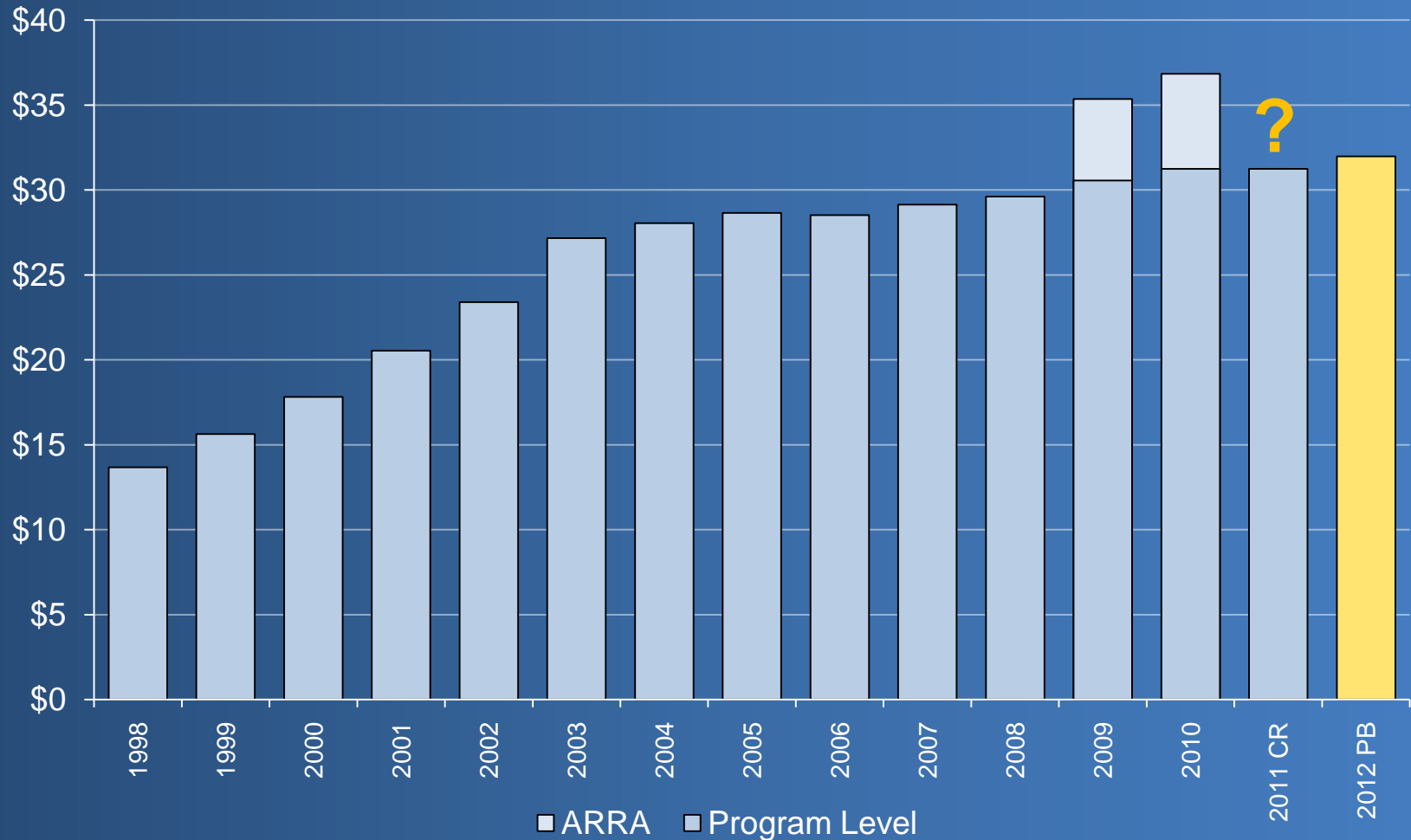
Impact of NIH Funding



NIH FY 2012 President's Budget Request

\$31,987 Million

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

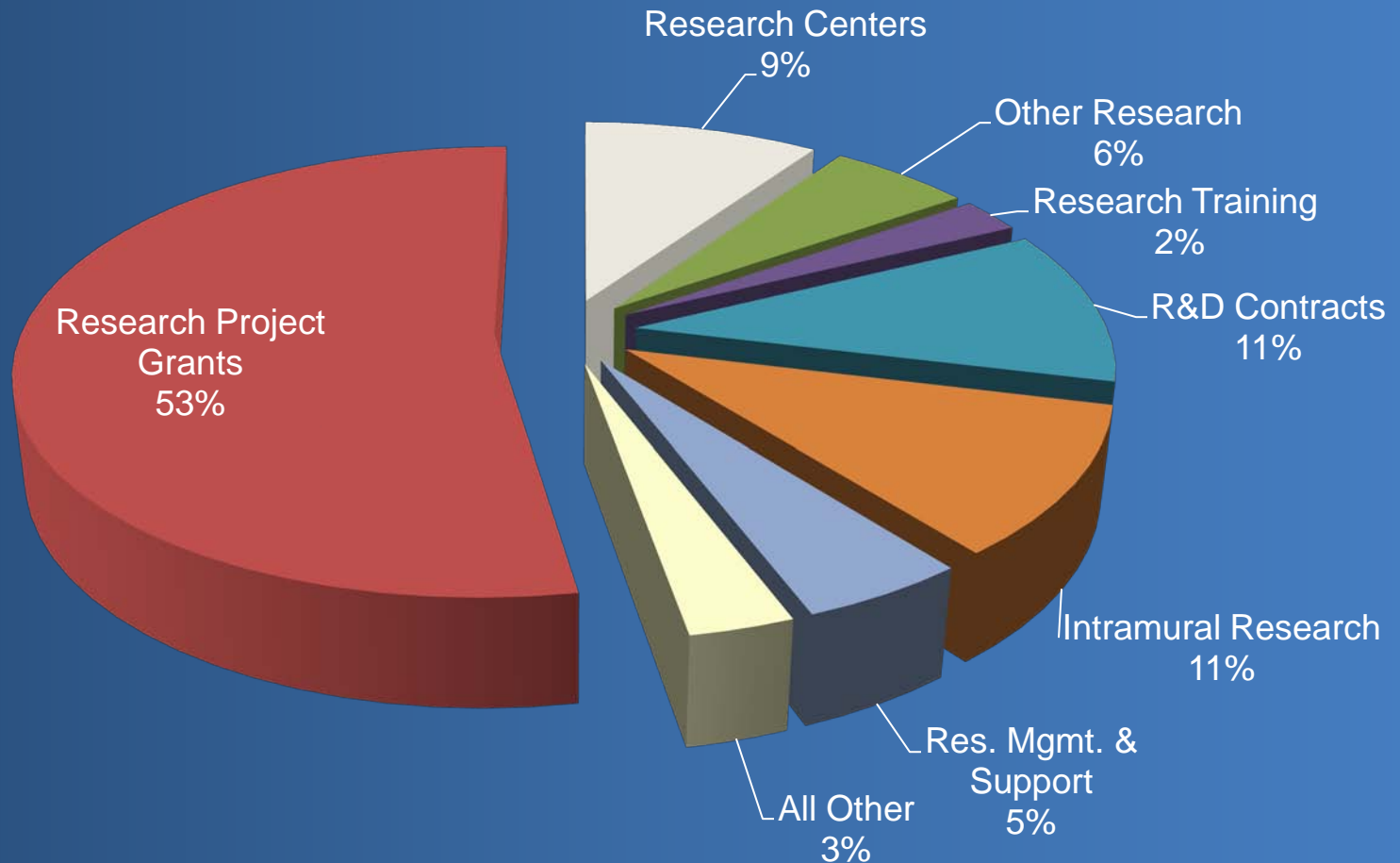


Note: ARRA funds were appropriated in FY 2009

FY 2012 President's Budget Request

NIH Total Program Level

\$31,987 Million

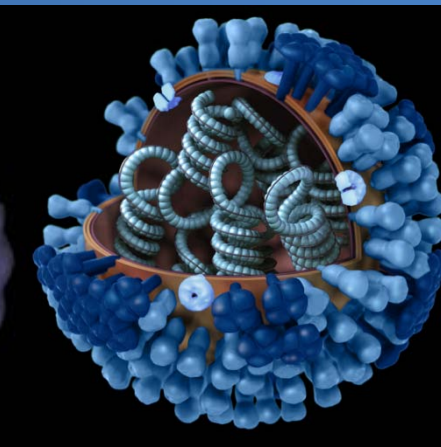
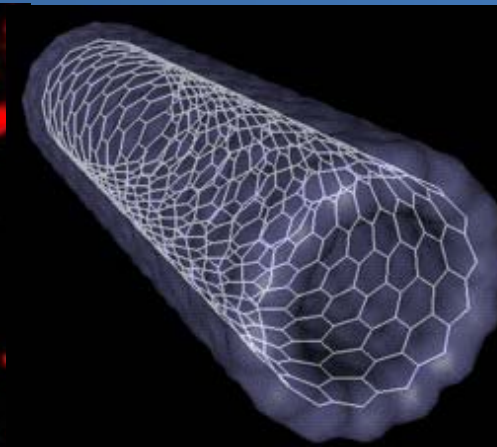
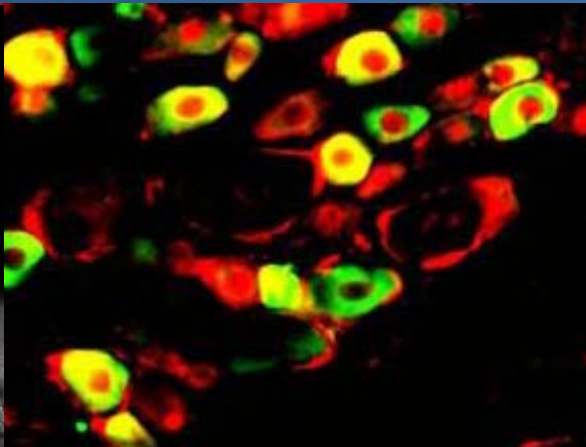
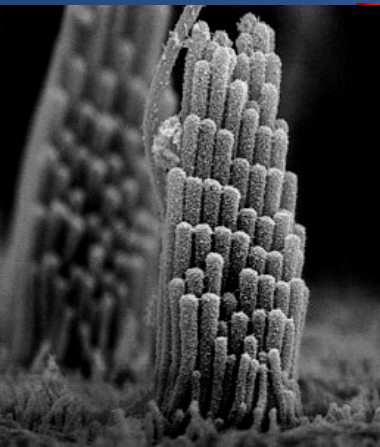


NIH Advances in Basic Research 2010

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

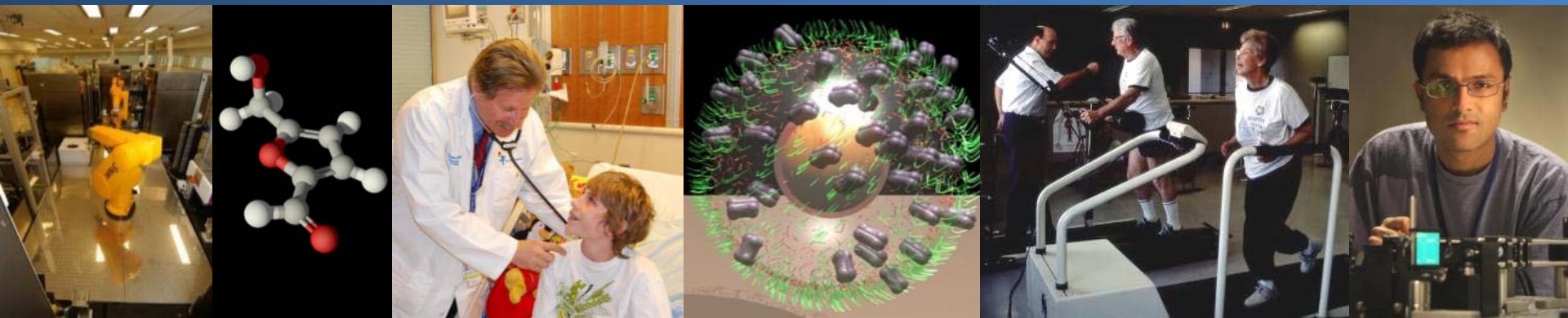


- Generation of “hair cells” essential for hearing
- Demonstration of the power of resolvins to control pain
- Creation of better nanotubes for drug delivery
- Identification of target for universal flu vaccine



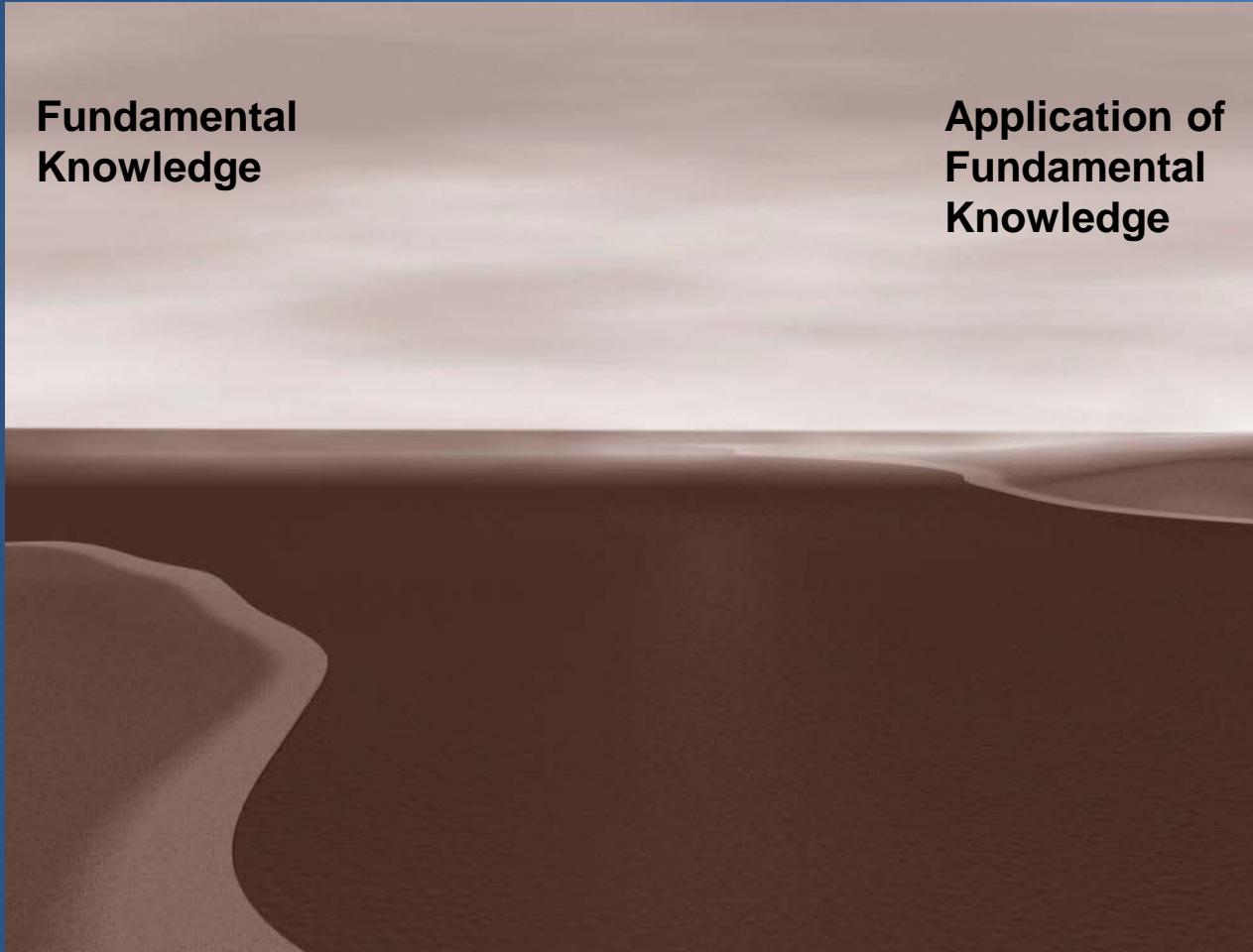
NIH Investments in Innovation — FY 2012

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



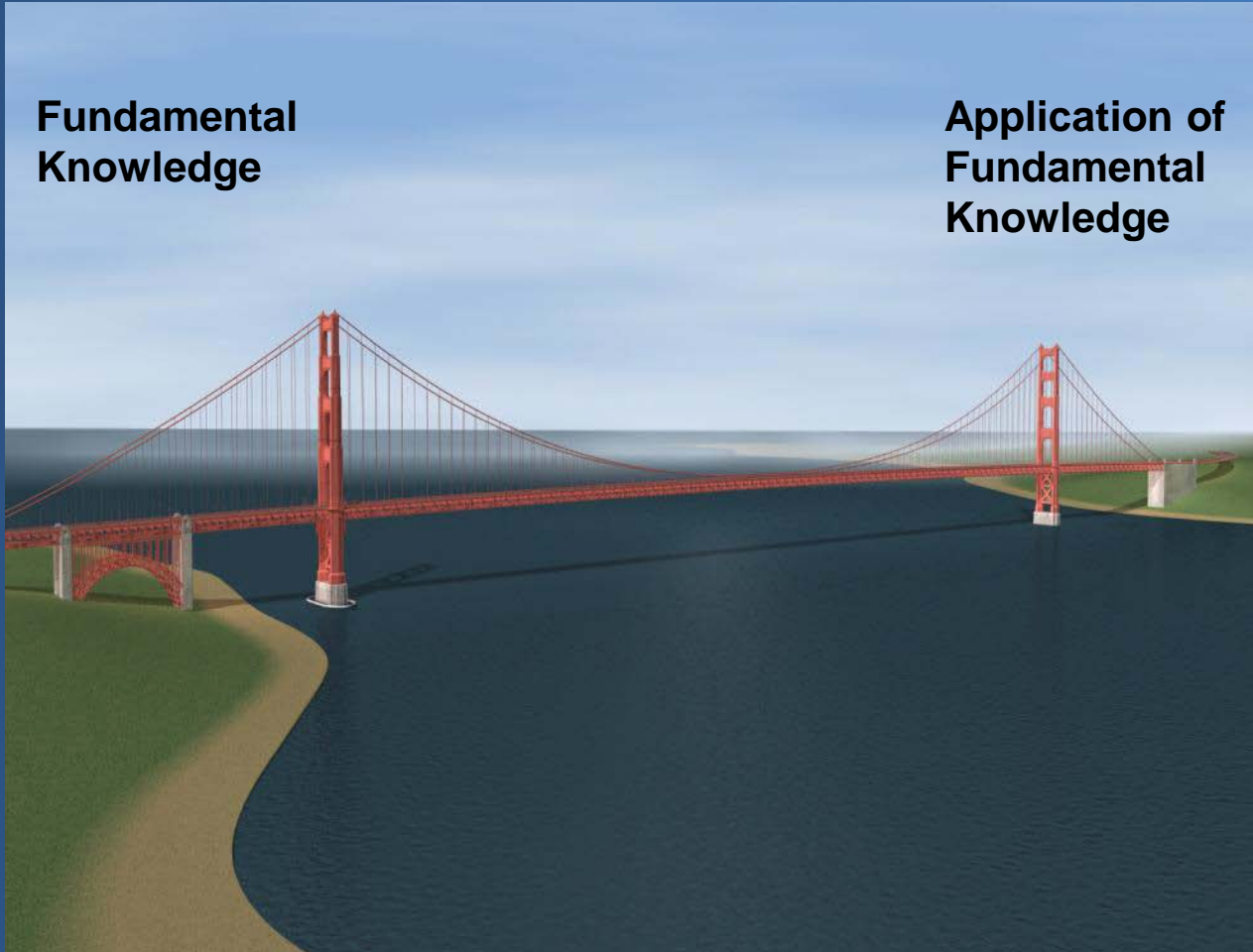
**Fundamental
Knowledge**

**Application of
Fundamental
Knowledge**



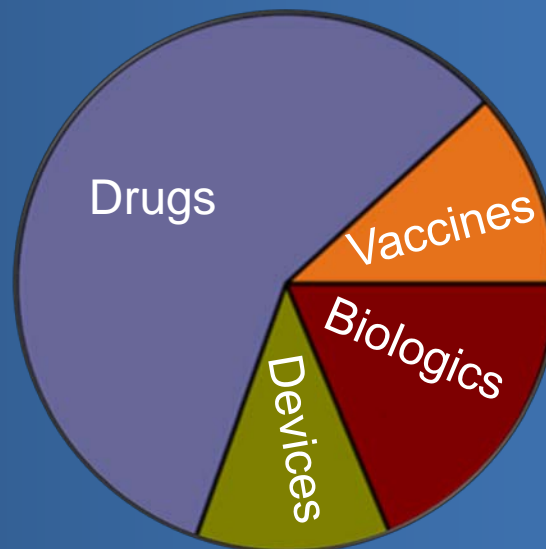
**Fundamental
Knowledge**

**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.

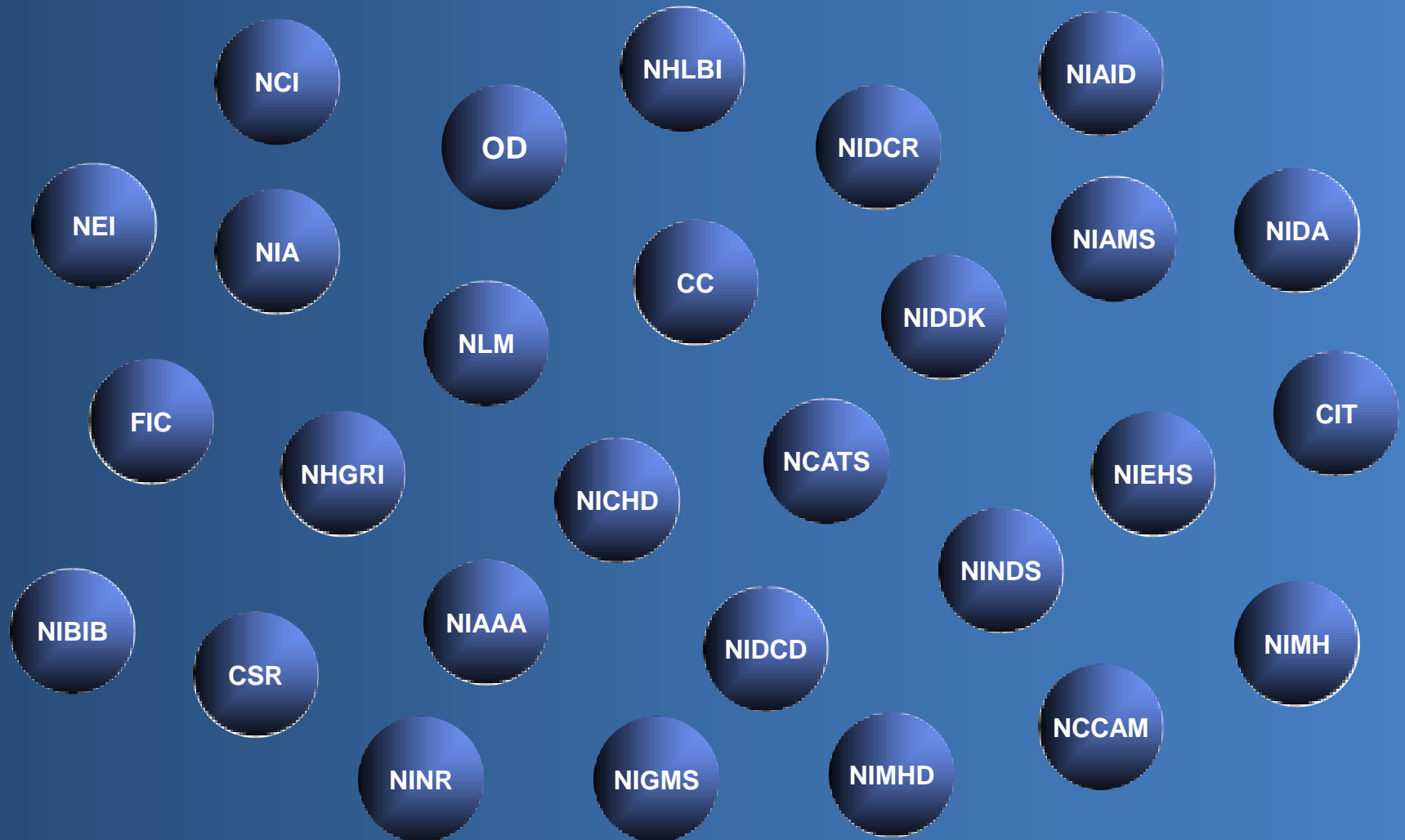
N ENGL J MED 364;6 NEJM.ORG FEBRUARY 10, 2011

National Center for Advancing Translational Sciences (NCATS)

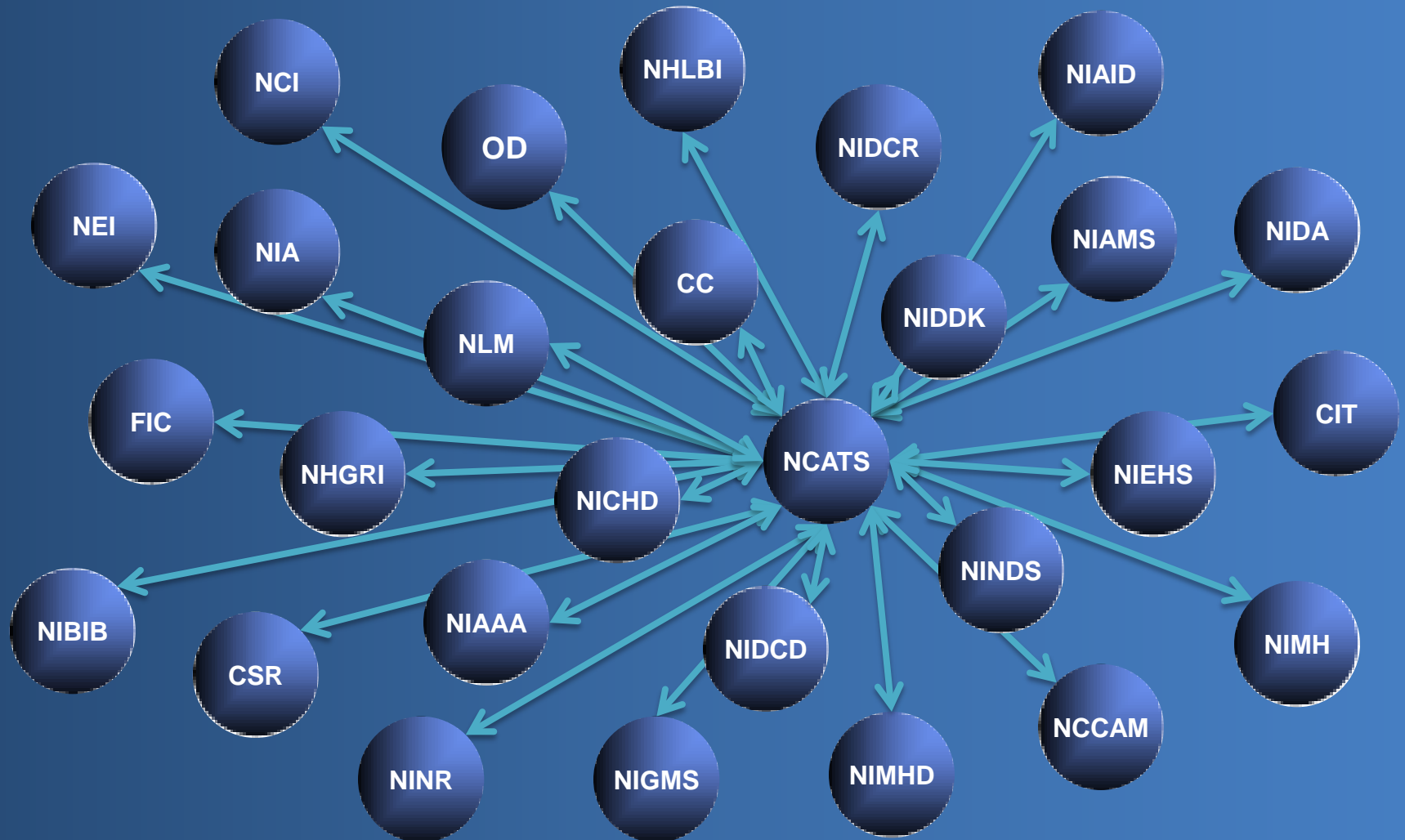
Why now? Rationale for Establishment

- 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

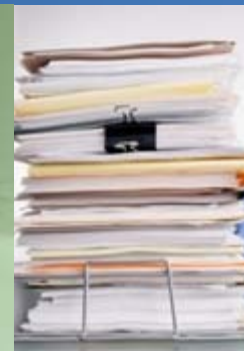
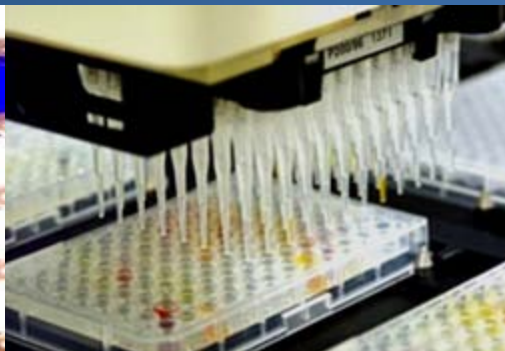


Catalyzing Collaborations Within NIH



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



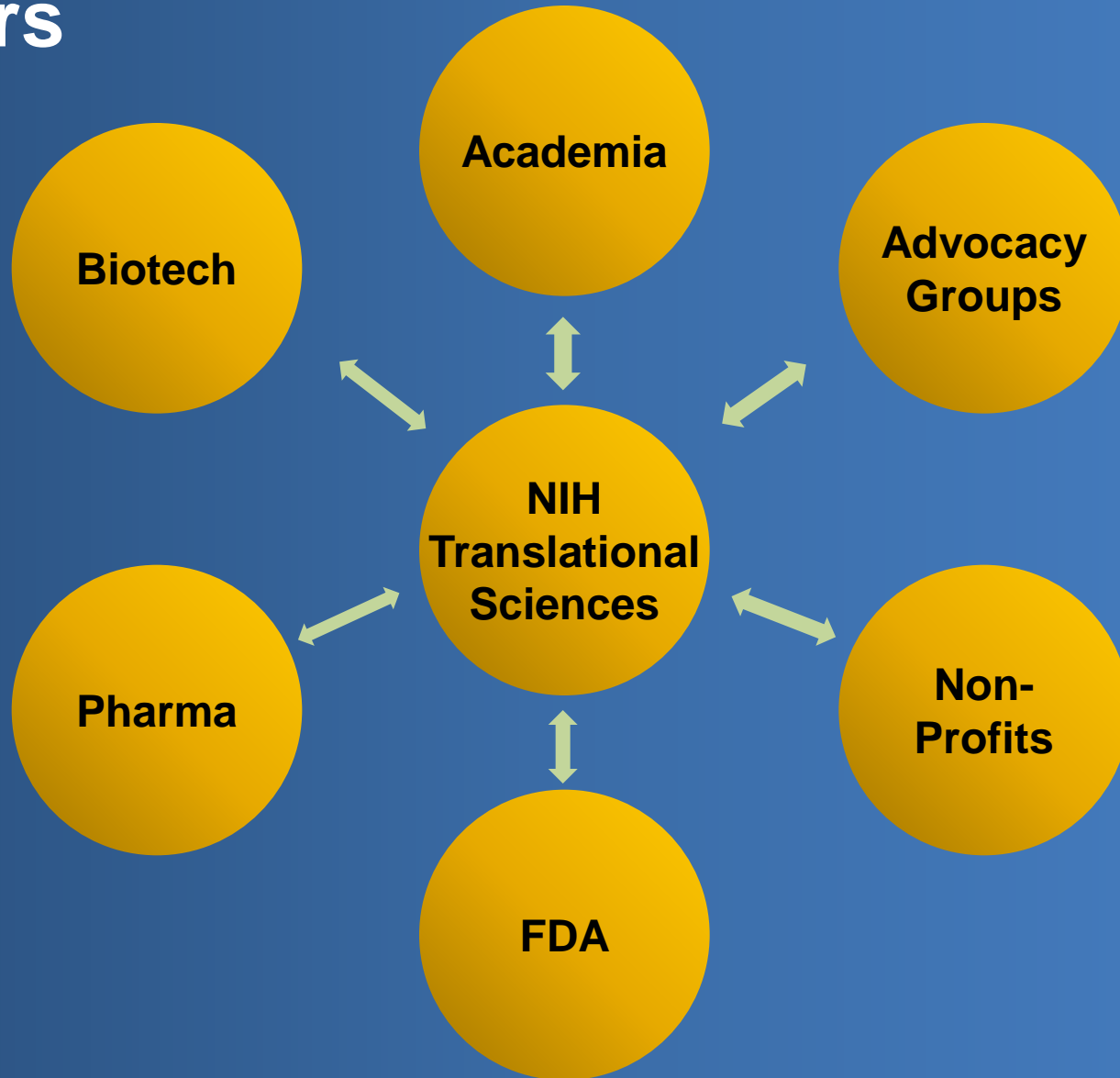
A Bold New Paradigm: Cures Acceleration Network

\$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

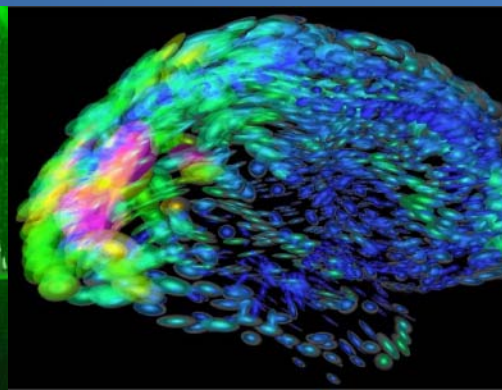
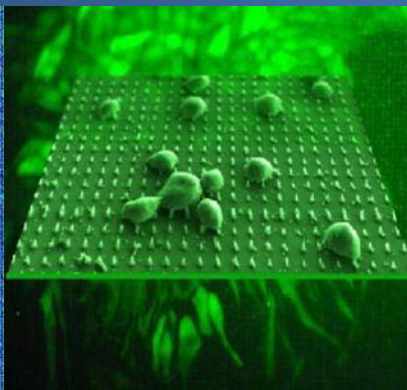
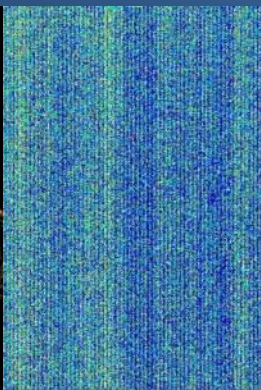
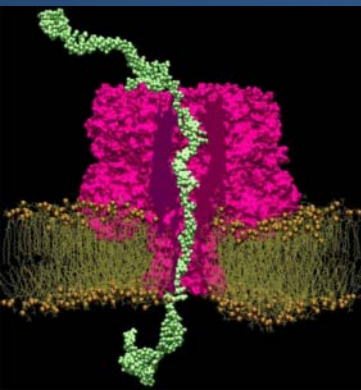


Catalyzing Collaborations With External Partners



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

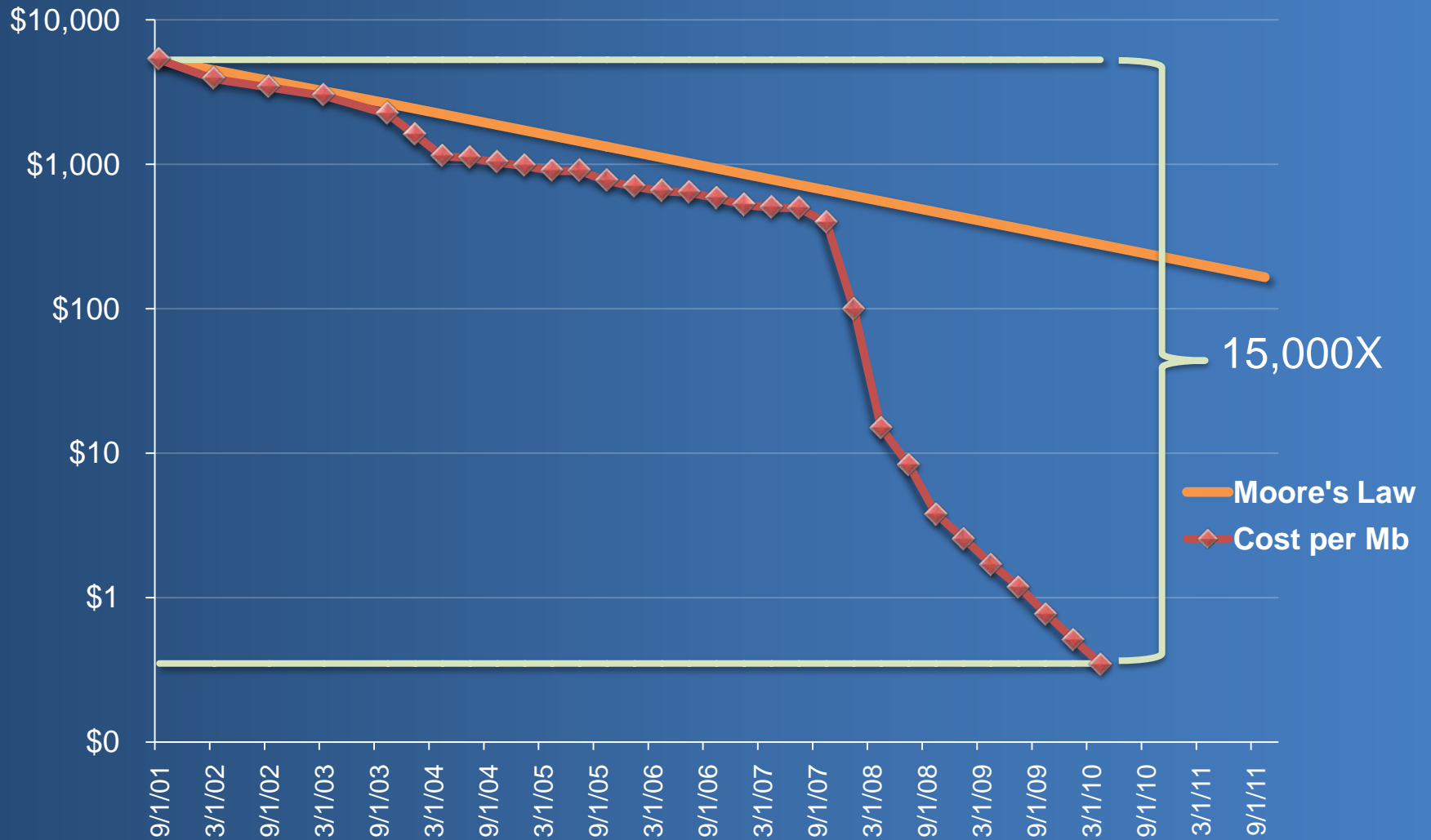
NATURE.COM/NATURE

10 February 2011 \$10



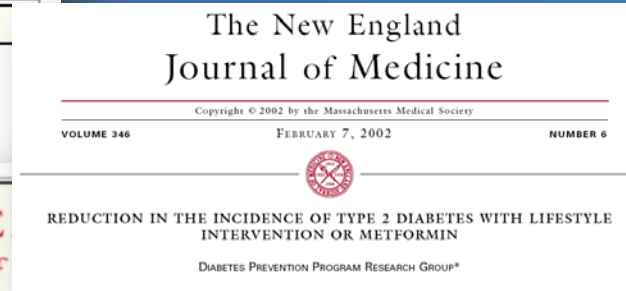
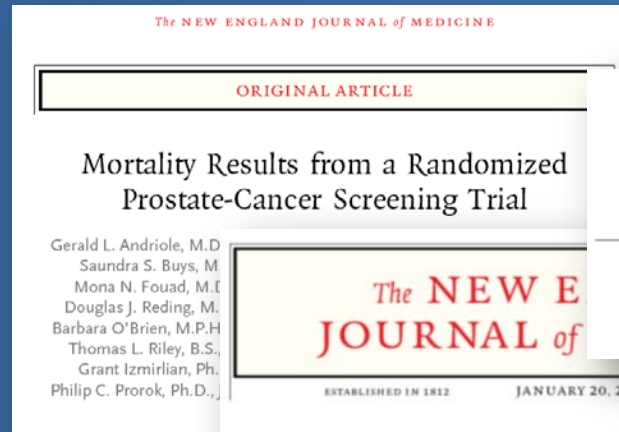
Sequencing Costs Decrease Rapidly

Cost per Megabase of DNA Sequence



Enhancing the Evidence Base for Health Care Decisions

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



Effectiveness of Antipsychotic Drugs in Patients with Chronic Schizophrenia

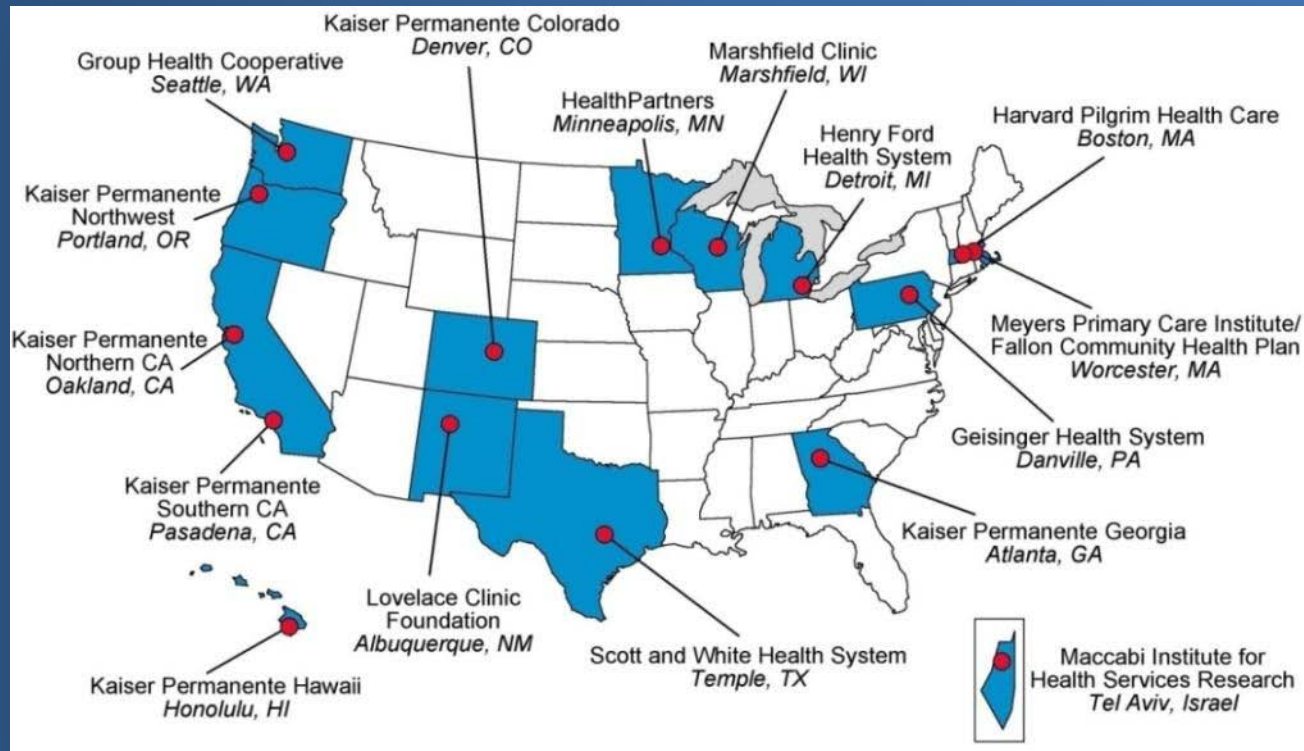
T. Scott Stroup, M.D., M.P.H., Joseph P. McEvoy, M.D., Marvin S. Swartz, M.D., Frank M. Bech, M.D., Diana O. Perkins, M.D., M.P.H., Richard S.E. Keefe, Ph.D., James M. H. Marder, M.D., Clarence E. Davis, Ph.D., Barry D. Lebowitz, Ph.D., Joanne Severe, M.S., and the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) Investigators*

ORIGINAL CONTRIBUTION

JAMA-EXPRESS

Major Outcomes in High-Risk Hypertensive Patients Randomized to Angiotensin-Converting Enzyme Inhibitor or Calcium Channel Blocker vs Diuretic
The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT)

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

