FY 2012 NIH Budget Roll-out

Francis S. Collins, M.D., Ph.D.
Director, NIH
“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*

**NIH Accomplishments**

**Reduction in deaths from:**
- Heart disease
- Stroke
- HIV/AIDS

**Increased survival rates for:**
- Breast cancer
- Cervical cancer
- Colon cancer

Life expectancy gains worth ~$3.2 trillion annually

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

Research Project Grants 53%
Research Centers 9%
Other Research 6%
Research Training 2%
R&D Contracts 11%
Intramural Research 11%
Res. Mgmt. & Support 5%
All Other 3%

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

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
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
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

MORE BASES PER DOLLAR
Elaine Mardis on the march of sequencing technology PAGE 188

HEALTH
FROM LAB TO CLINIC
A road map to genomic medicine PAGE 204
Sequencing Costs Decrease Rapidly

Cost per Megabase of DNA Sequence

15,000X

Moore's Law

Cost per Mb
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