NIH FY 2016 Budget Roll-Out

Francis S. Collins, M.D., Ph.D.
Director, National Institutes of Health

February 2, 2015

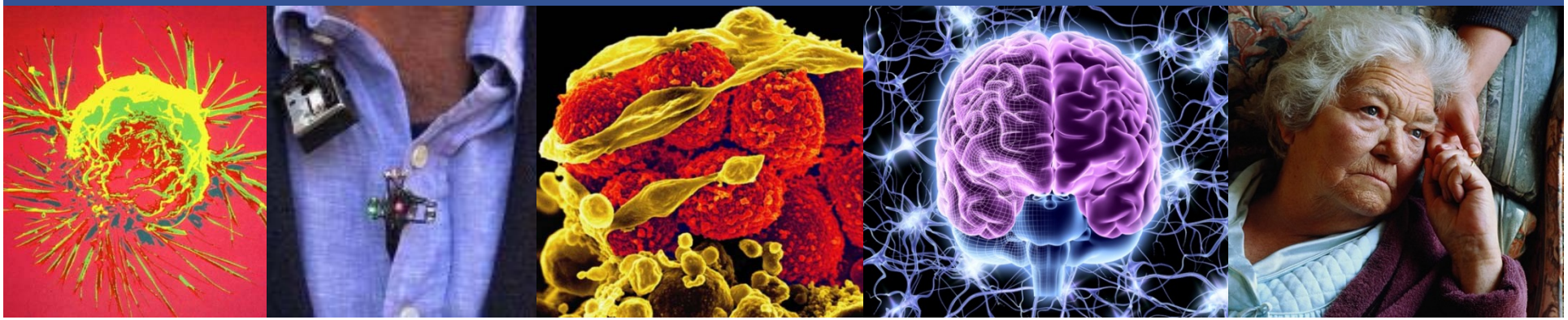
NIH's FY 2016 Budget Request

Year	FY 2014	FY 2015	FY 2016 Request
Program Level ($B)	$30.070	$30.311	$31.311
Competing RPGs (est.)	9,168	9,076	10,303
Total RPGs (est.)	34,332	34,206	35,447
Applicant Success Rate (est.)	18.0%	17.2%	19.3%

- The proposed increase of $1 billion in FY 2016 would allow over 1,200 more new and competing Research Project Grants
- NIH also received $238 million of emergency appropriations for Ebola research in FY 2015 (not included above)

FY 2016 Request: Highlights of Targeted Increases

▪ Precision Medicine Initiative	$200 M
– *Cancer*	*70 M*
– *Other Diseases*	*130 M*
▪ Antimicrobial Resistance	100 M
▪ BRAIN Initiative	70 M
▪ Alzheimer's Disease	50 M



“And that’s why the budget I send this Congress on Monday will include a new Precision Medicine Initiative that brings America closer to curing diseases like cancer and diabetes, and gives all of us access, potentially, to the personalized information that we need to keep ourselves and our families healthier.”

President Barack Obama

January 30, 2015

The NEW ENGLAND JOURNAL of MEDICINE

January 30, 2015

Perspective

A New Initiative on Precision Medicine

Francis S. Collins, M.D., Ph.D., and Harold Varmus, M.D.

> "Tonight, I'm launching a new Precision Medicine Initiative to bring us closer to curing diseases like cancer and diabetes — and to give all of us access to the personalized information we need to keep ourselves and our families healthier."
>
> — President Barack Obama, State of the Union Address, January 20, 2015

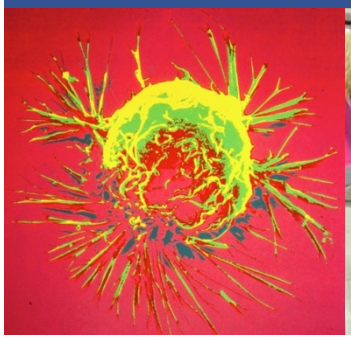
The proposed initiative has two main components: a near-term focus on cancers and a longer-term aim to generate knowledge applicable to the whole range of health and disease. Both components are now within our reach because of advances in basic research, including molecular biology, genomics, and bioinformatics. Furthermore, the initiative

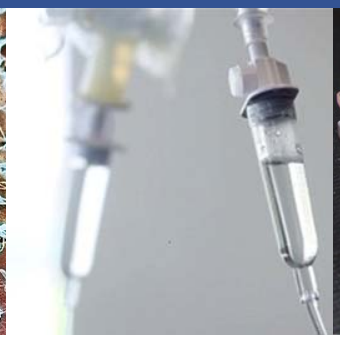
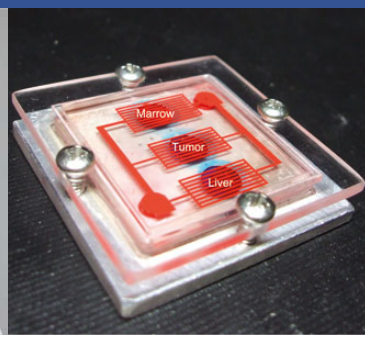
www.nih.gov/precisionmedicine

Precision Medicine Initiative: Near Term

Apply tenets of precision medicine to cancer

- Identify new cancer subtypes, therapeutic targets
- Test precision therapies, with private sector partners
  - Wide spectrum of adult and pediatric cancers
  - Early stage to advanced disease
- Expand understanding of therapeutic response
  - Drug resistance
  - Combination therapy
  - Predicting and monitoring tumor recurrence



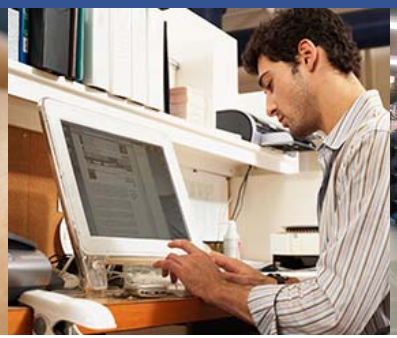
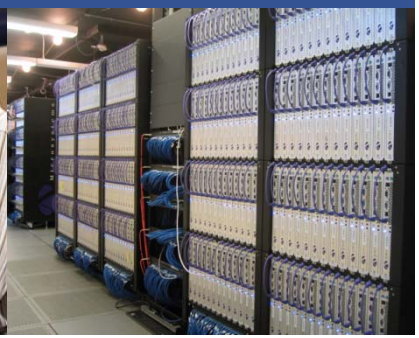




Precision Medicine Initiative: Longer Term

Generate knowledge base needed to move precision medicine into the whole range of health and disease

- To reach this goal, the Initiative will support:
  - Creative approaches for detecting, measuring, analyzing wide range of biomedical data: molecular, genomic, cellular, clinical, behavioral, physiological, and environmental
  - Tests of these innovations in small, pilot studies
  - Evaluation of most promising approaches in greater numbers of people over longer periods of time



Precision Medicine Initiative

- National Research Cohort
  - >1 million U.S. volunteers
  - Numerous existing cohorts (many funded by NIH)
  - New volunteers
- Participants will be centrally involved in design and implementation of the cohort
- They will share genomic data, lifestyle information, biological samples – all linked to their electronic health records

Precision Medicine Initiative

The National Research Cohort will:

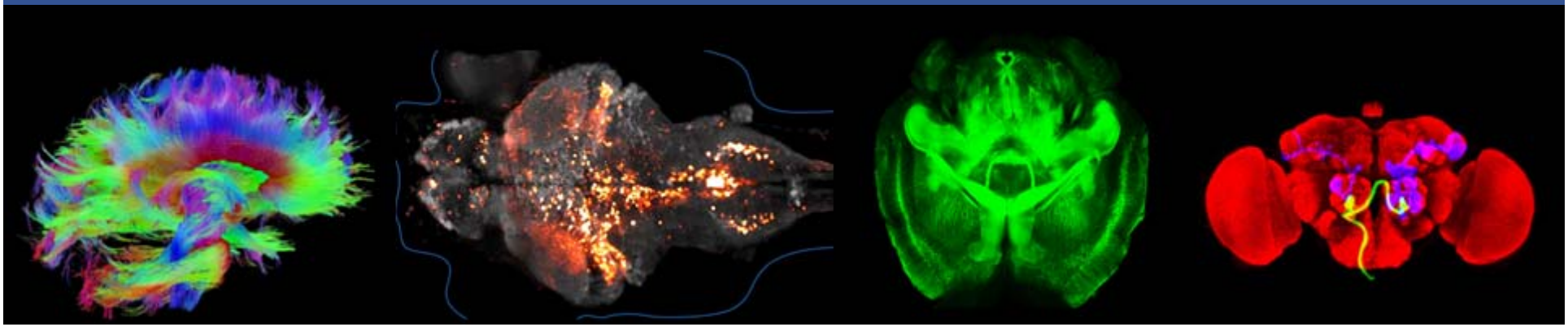
- Provide scientists with a ready platform for:
  - Observational studies of drugs and devices
  - Tests of wearable sensors for monitoring health
  - More rigorous interventional studies
- Forge new model for “doing science” that emphasizes engaged participants and open, responsible data sharing with privacy protections

Other Extraordinary Opportunities for FY 2016

- Unraveling Life's Mysteries through Basic Research
- Translating Discovery into Health
- Preparing a Diverse and Talented Biomedical Research Workforce

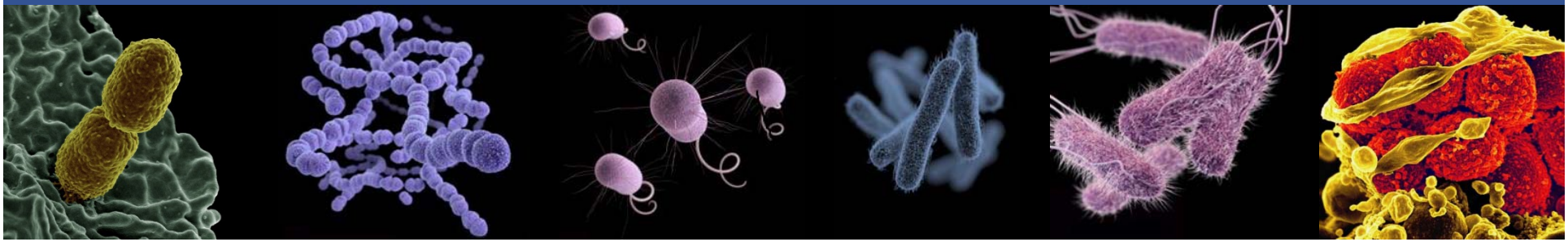
Unraveling Life's Mysteries through Basic Research: The BRAIN Initiative

- Last September, NIH's made its first investment in the Initiative's 12-year scientific vision with 58 awards
- FY16 request totals $135 M – increase of $70 M
- Funding will be used to:
  - Develop innovative technologies to advance basic neuroscience
  - Generate methods for classifying the brain's diverse cells/circuits
  - Create/optimize technologies for recording and modulating groups of cells that act together in circuits
  - Develop new, non-invasive tools for human brain imaging



Translating Discovery into Health: New Strategies in Battle Against AMR

- Announced September 18, National Strategy for Combating Antibiotic-Resistant Bacteria (basis for $100 M proposed increase in FY16)
- Research recommendations include:
  - National database of genomic sequences of antibiotic resistant microbes that cause human infections
  - Better diagnostics; NIH/BARDA will offer $20 M prize
  - New antibiotics and vaccines
  - National clinical research network, building on the efforts of NIH Antibacterial Resistance Leadership Group



Translating Discovery into Health: Alzheimer's Disease, Accelerating Medicines

- Major investment in Alzheimer's disease (AD) research
- FY16 request totals $638 M – increase of $50 M
  - *Basic research* in neuroscience
  - *Epidemiologic studies* to identify risk and protective genes
  - *Clinical studies* for early diagnosis and progression; >25 trials
- Accelerating Medicines Partnership (AMP)
  - First projects: AD, type 2 diabetes, lupus, rheumatoid arthritis
  - FY16 request totals $23 million, same as FY15

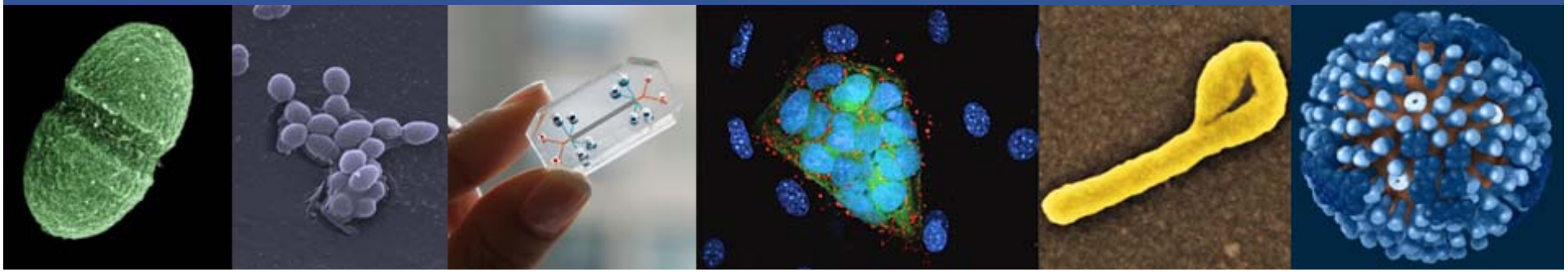
Preparing a Diverse & Talented Biomedical Research Workforce

To encourage the next generation of scientists, NIH will continue to invest in:

- High-Risk High-Reward Program to support innovative researchers with potentially transformative goals
- Early Independence Awards to enable exceptional junior scientists to “skip the postdoc”
- An array of programs to enhance diversity in the biomedical research workforce

And Much More …

- Microbiome
  - Susceptibility to obesity, heart disease, other conditions?
  - Efforts to improve health by adjusting microbiome
- Stem Cell Technology
  - “You on a Chip”
  - Regenerative medicine
- Vaccines
  - Ebola, other emerging diseases
  - Universal flu vaccine
  - HIV/AIDS – more promise than ever



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VIEWPOINT

SCIENTIFIC DISCOVERY AND THE FUTURE OF MEDICINE

Exceptional Opportunities in Medical Science

A View From the National Institutes of Health

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As the world's largest source of biomedical research funding, the US National Institutes of Health (NIH) has been advancing understanding of health and disease for more than a century. Scientific and technological breakthroughs that have arisen from NIH-supported research account for many of the gains that the United States has seen in health and longevity.

look forward to a medical landscape in which the pairing of affordable, efficient DNA sequencing and electronic health records could be used to inform a lifetime of health care strategies. Combined with the use of mobile health technology to assist in real-time monitoring of factors such as diet, exercise, blood pressure, heart rate, and blood chemistries, this approach could

The 21st century is the century of biology. The nation that invests in biomedical research will reap untold rewards in its economy and the health of its people.




NIH… Turning Discovery Into Health

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