DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

Fiscal Year 2015 Budget Request

Witness appearing before the

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Good morning, Mr. Chairman and distinguished Members of the Subcommittee. I am Francis S. Collins, M.D., Ph.D., Director of the National Institutes of Health (NIH). It is an honor to appear before you today to present the Administration's fiscal year (FY) 2015 budget request for the NIH and provide an overview of our critical role in enhancing our nation's health through scientific discovery.

As the nation's biomedical research agency, NIH's mission is to seek fundamental knowledge about the nature and behavior of living systems and to apply that knowledge to enhance human health, lengthen life, and reduce illness and disability. I can report to you that NIH leadership, employees, and grantees continue to believe passionately in this mission.

Before I discuss the tremendous strides we have made and the exciting scientific opportunities on the horizon, r a

first AIDS-free generation since this virus emerged more than 30 years ago. NIH research also has given us vaccines to protect against an array of life-threatening diseases, including cervical cancer, influenza, and meningitis. We can look forward to a future in which advanced prevention and treatment strategies such as these allow everyone to have a significantly better chance of living a long and healthy life.

These statistics tell you how far we have come—but our aim is to go even further, faster. To this end, the Administration's FY 2015 budget request for the NIH is $30.362 billion, $211 million, or 0.7 percent, above the FY 2014 level. This budget request reflects the President's and the Secretary's commitment to improving the health of the nation and to maintaining our nation's leadership in the life sciences. The request highlights investments in innovative research that will advance fundamental knowledge and speed the development of new therapies, diagnostics, and preventive measures to improve public health.

The FY 2015 budget request will enhance NIH's ability to support cutting-edge research and training of the scientific workforce. Within the Administration's FY 2015 budget, we will continue to increase Research Project Grants (RPGs), NIH's funding mechanism for investigator-initiated research. NIH expects to support 9,326 new and competing RPGs in FY 2015, an increase of 329 over FY 2014 levels. For FY 2015, NIH anticipates funding a total of 34,197 RPGs. The budget request allocates resources to areas of the most extraordinary promise for biomedical research, while maintaining the flexibility to pursue unplanned scientific opportunities and address unforeseen health needs.

While we are very grateful for any budget increase, the fully paid $56 billion Opportunity, Growth, and Security Initiative (OGSI), a program included in the President's budget, would provide an additional $970 million investment in NIH programs that would allow

NIH to fund or expand a host of other cutting-edge initiatives, speeding the development of vaccines and cures, and restoring sequestration cuts to the number of research project grants.

Let me describe a few of the many areas in which NIH-supported research is opening up extraordinary opportunities to improve the health of the American public.

A major program that began this year is the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative, for which thanks are due to this Subcommittee for its FY 2014 support. NIH is a major player in this pioneering multi-agency venture

effort, we will overcome the challenges associated with Big Data to accelerate real-world applications of basic science discoveries.

We are also excited about another area of intense interest: the development of therapeutics. Recent advances in genomics, proteomics, imaging, and other technologies have led to the recent discovery of more than a thousand risk factors for disease—biological insights that ought to hold promise as targets for drugs. But drug development is a terribly difficult and failure-prone business. To the dismay of researchers, drug companies, and patients, the vast majority of drugs entering the development pipeline fall by the wayside. The most distressing failures occur when a drug is found to be ineffective in the later stages of development—in Phase II or Phase III clinical studies—after years of work and millions of dollars have already been spent. A major reason for such failures is that scientists often have not had enough information to choose the right biological targets. If a drug is aimed at the wrong target, --0.002 (r)5--0.(r)5k

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Preventing disease is another top priority, and influenza is one area of prevention in which we are poised for rapid progress. Currently, to provide protection against the rapidly evolving influenza virus, a new vaccine must be produced each year and we all need to get an annual flu shot. Also, despite best efforts, the vaccine isn't always ideal. In an average year, the flu claims up to 49,000 American lives and costs the U.S. economy about $87 billion. But it does not have to be that way. NIH-funded researchers are now working on a universal flu vaccine—designed to protect people against virtually all strains of the flu for extended periods of time and, thus, potentially reduce the need for annual flu shots. Of critical importance, such a vaccine could also protect against a future global flu pandemic.

While we are several years away from having a universal flu vaccine available to the public, our researchers have already demonstrated proof of concept and are testing a numta Wh2l a Tw [(

our bodies have built-in checkpoints to prevent our immune systems from going into overdrive and killing healthy cells. Now, NIH-funded researchers have discovered a way to genetically modify certain white blood cells called T-cells—the soldiers of the immune system—to attack tumor cells. In this new approach, T-cells are collected from cancer patients and engineered in the lab to produce special proteins on their surface, called chimeric antigen receptors (CARs). When the modified cells are infused back into patients, they multiply and, with guidance from their newly engineered receptors, seek and destroy tumor cells. Promising results in patients with leukemia prompted *Science* magazine to name this its 2013 Breakthrough of the Year.

Today, I have provided a very brief overview of NIH's past successes and continuing commitment to basic, translational, and clinical research. Our nation has never witnessed a time of greater promise for advances in medicine. With your support, we can anticipate a future of accelerating discovery across NIH's broad research landscape, from fundamental scientific inquiry to human clinical trials. The "National Institutes of Hope" is ready to move forward.

This concludes my testimony, Mr. Chairman. I look forward to your questions.