NIH Mission and Facts

Good morning, Mr. Chairman and distinguished Members of the Subcommittee. It is an honor to appear before you today to provide an overview of NIH's critical role in enhancing our nation's health through scientific discovery.

First, I would like to offer my congratulations to Chairman Kingston for assuming leadership of the Subcommittee. I would also like to recognize the new members of the Subcommittee and express my desire to work closely with you in the future. This Subcommittee has a long history of supporting NIH's mission to seek fundamental knowledge about the nature of living systems and apply it in ways that enhance human health, lengthen life, and reduce suffering from illness and disability.

NIH is the leading supporter of biomedical research in the world. NIH-funded basic and translational scientific advances have prompted a revolution in the diagnosis, treatment, and prevention of disease. Due to the significant expansion in scientific and information technologies, we are poised to bring about even more exciting progress in human health and disease prevention. Also, NIH funding has important economic effects that stimulate

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The hopeful news is that cancer research has utterly transformed our understanding of the disease in the last few years. NIH's commitment to scientific research provides us with a promising therapeutic strategy for a deadly form of lung cancer. Non-small cell lung cancer (NSCLC) accounts for 80 percent of all lung cancer cases and patients, including non-smokers, are often diagnosed at advanced stages of the disease. In August 2011, the Food and Drug Administration granted accelerated approval for crizotinib for the treatment of patients with advanced NSCLC whose tumors have a specific genetic mutation in a gene called ALK as detected by an FDA-approved test. Historically, crizotinib treatment results in a dramatic reduction in tumors, including complete tumor eradication in some cases, but the disease almost always returns. NIH-supported research discovered that mutations in other key genes, such as the EGFR gene, can fuel cancer cell progression after treatment with crizotinib. The National Cancer Institute's Center for Cancer Research is currently testing combination therapies in clinical trials to target both ALK and EGFR mutations. Crizotinib represents how scientists apply knowledge gained from NIH-supported research to develop new therapies.

As our population ages, cancer is

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to develop new strategies for diagnosing, treating, and preventing Alzheimer's disease that are both effective and affordable.

Despite these staggering dollar amounts, progress is accelerating toward understanding the pathogenesis of Alzheimer's. In just the last two years, scientists found five new genes associated with Alzheimer's disease, which provides new hope for developing therapies. Scientists have also discovered a genetic mutation that may play a protective role in preventing Alzheimer's disease, providing a natural model of the kind of protection we hope to develop through drug therapy. The use of induced pluripotent stem (iPS) cells derived from patients with Alzheimer's disease is giving new insights into the molecular causes of the disease and providing a powerful new platform to screen drugs without putting patients at risk. And a drug developed for a rare type of cancer has shown dramatic benefit in the best mouse model of Alzheimer's disease, and human trials have just begun. Discoveries like these are not only going to improve the health of Americans, but they will also improve the health of the American economy.

We have never witnessed a time of greater promise for advances in medicine than right now. NIH is prepared to continue our long tradition of leading the world in the public support of biomedical research. Successful development of prevention strategies, diagnostics, and therapeutics will require bold investments in research across the spectrum from basic science to clinical trials, as well as new partnerships between the public and private sectors. With your support, we can promise continuing advances in health, creation of new economic opportunities, and stimulation of American global competitiveness in science, technology, and innovation.

Mr. Chairman and Members of the Subcommittee. I appreciate the opportunity to provide this overview of the NIH mission and contribution to our Nation, and would be pleased to answer any questions you may have.

[i] Murphy, K.M., & Topel, R.H. (2006). The value of health and longevity. *Journal of Political Economy, 114(5),* 871-904.
[ii] Ehrlich, Everett. NIH's Role in Sustaining the U.S. Economy: A 2011 Update, *United for Medical Research* (2012).
[iii] In Your Own Backyard: How NIH Funding Helps Your State's Economy, *Families USA (*2008).
[iv] Ehrlich, Everett. An Economic Engine: NIH Research, Employment and the Future of the Medical Innovation Sector, *United for Medical Research* (May 2011).
[v] Technology Talent and Capital: State Bioscience Initiatives 2008, *Battelle, BIO, SSTI* (2008).
[vi] Economic Impact of the Human Genome Project, *Battelle Technology Partnership Practice* (2011).
[vii] Cancer Facts & Figures 2013, *American Cancer Society* (2013).
[viii] 2012 Alzheimer's Disease Facts and Figures, *Alzheimer's Association* (2012).