Statement for the Record by United for Medical Research
Submitted to the U.S. Senate Committee on Appropriations
"Driving Innovation Through Federal Investments"
April 29, 2014

We offer our thanks to Chairwoman Mikulski and Vice-Chairman Shelby for their leadership and commitment to federal support of research and innovation, and welcome the opportunity to express our strong endorsement for continuing our nation's commitment to biomedical research, so that we may remain the world leader in the life sciences. United for Medical Research (UMR) represents leading research institutions, patient and health advocates and private industry who have joined together to seek steady support in federal funding for the National Institutes of Health (NIH). NIH is an agency at the center of a medical innovation ecosystem (Fig. 1), which includes research universities, private sector companies in the research tools, pharmaceutical, and biotechnology industries, start up and spin off companies, and, of course, patients, whose improved health is the ultimate goal of our investment in NIH.

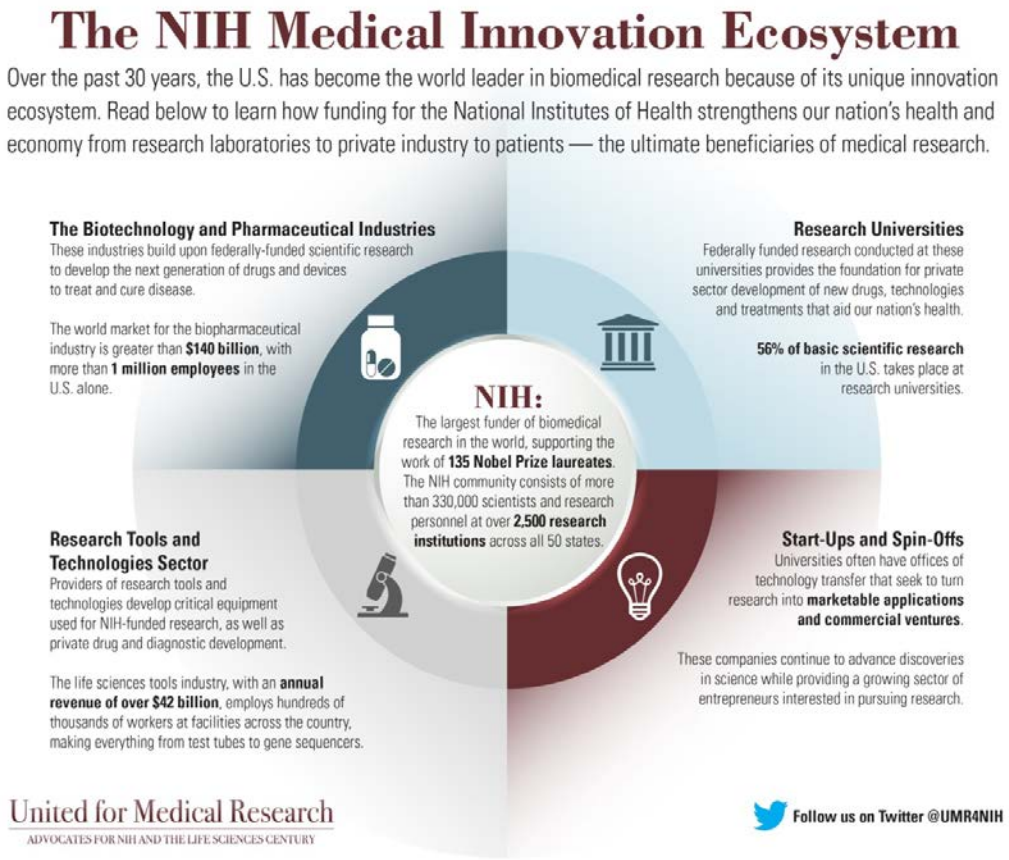

Figure 1: The Medical Innovation Ecosystem

NIH Funded Research: A Critical Element of Private Sector Innovation

Through its role as the locus of this ecosystem, NIH serves as an economic driver, an irreplaceable federal funder of basic research, and the source for extraordinary improvements in our health, longevity, and quality of life. The biomedical research pipeline is a partnership between the 300,000 scientists funded by NIH, performing research at 2,500 institutions in all fifty states, and the private sector, which provides the products to support research discovery and brings research breakthroughs to fruition and into the marketplace. As a key player in the innovation ecosystem, NIH funds the highest-quality science and trains the next generation of medical researchers, ensuring that the pipeline of knowledge and talent does not run dry. The private sector's ability to maintain the rate of medical advancements, create and sustain high-wage jobs, and spur nationwide and regional economic activity depends on a sustained commitment to NIH.

Technological innovation has been shown to be responsible for more than half our nation's economic growth over the past century, and NIH funding has continued to demonstrate that return on investment. Data from our updated report, "*An Economic Engine: NIH Research, Employment, and the Future of the Medical Innovation Sector,*" shows that NIH funding directly and indirectly supported more than 402,000 jobs in 2012 alone and generated more than $57.8 billion in new economic activity. Using the Department of Commerce's RIMS II model, the analysis detailed the output and employment effects of 2012 NIH extramural research funding by state, calculating the number of jobs supported in each state by NIH funding, and clearly reiterating NIH's vital role in fueling economic growth in the health and life sciences industry.

NIH and the researchers it supports, nationwide, stand poised on the brink of extraordinary scientific opportunity. The exploration of the human genome, the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) initiative, the Acceleration Medicines Partnership: these exciting new areas of research will provide the foundation for the next generation of medical innovations and breakthroughs. Our country is fortunate to have the lifeblood of innovation running through the veins of our system of research institutions and private sector investors. It is imperative we not allow this system to become anemic by reducing the essential nutrient of NIH funding.

Innovation in Medicine Can Be Measured in Lives Saved

In addition to its strong contribution to the nation's economy, we must not forget NIH's primary mission: to improve the health of the nation through medical research innovation. NIH has been tremendously successful in improving human health and its accomplishments are numerous and well documented: a nearly 70 percent reduction in the death rate for coronary heart disease and stroke; advances in HIV/AIDS treatment that put an AIDS-free future within reach; nearly 1 million lives saved due to decreases in cancer death rates over the past decade; and steady increases in life expectancy. Moreover, as our understanding of the human genome grows at an exponential rate, we have entered an era of personalized medicine where intervention on an individualized level is generating story after story of children and adults whose lives have been saved through cutting-edge research advances. These human stories of triumph over disease and scientific success serve to provide hope to millions of patients with unresolved diseases and conditions who continue to wait for the next generation of treatment or cure.

Global Competition and the Innovation Deficit

Unfortunately, following a loss of more than $1 billion to the sequester and a decade of budgets that have failed to keep pace with inflation, resulting in a more than 20 percent loss in purchasing power, we are at serious risk of losing our life science preeminence and squandering our most promising scientific opportunities. A recent UMR report, "*Leadership in Decline: Assessing U.S. International Competitiveness in Biomedical Research*," demonstrated that U.S. dominance is increasingly threatened as other nations emulate our model to fuel their own biomedical research enterprises. China, India, the European Union, and Russia have all declared their intentions to increase their research investment, despite the fiscal challenges presented by the global economy. This is in stark contrast to American investment in biomedical research funding, which is now in decline. Recently, three industry leaders - Marc Tessier-Lavigne, P. Roy Vagelos, and Elias Zerhoni - published an article in *Forbes* with the following grim prediction, "Today, China is challenging the US in the number of new biotechnology companies created annually. If we don't keep up, pharmaceutical companies will eventually relocate their R&D operations to the new sources of innovation – just as they have relocated from Europe to the US over the past twenty years." NIH Director Francis Collins has testified about the Beijing

Genomics Institute (BGI) genomic sequencing center in Shenzhen, China, stating that, “The capacity of that one Chinese institution now surpasses the combined capacity of all genome sequencing centers in the United States." Losing our competitive edge in biomedical research is a clear and present danger to the crucial economic contributions of our life sciences innovation ecosystem.

UMR joins with the research community in expressing our concern for the growing innovation deficit: the widening gap between the actual level of federal government funding for research and higher education and what the investment needs to be if the United States is to remain the world’s innovation leader. In particular, the impact of the innovation deficit on our ability to attract the best and the brightest scientific talent in the world is a grave threat. As testified by NIH Director Collins, “That’s our seed corn. It has been the strength of America, the biomedical research community, their creativity, their innovative instincts, and we’re putting that at serious risk as we see this kind of downturn in the support for research.” Simply put, the United States cannot afford to lose the human capital responsible for the medical innovations that produce the treatments and cures of tomorrow and fuel the economic output of the biosciences industry. If we do not reprioritize NIH and biomedical research, it will take decades to replenish the scientific talent and intellectual capacity that will be driven to other nations or away from promising research careers.

Making NIH a Priority is Critical for Driving U.S. Innovation

Policymakers find themselves at a historic juncture where they must balance the need to preserve our fragile economic recovery in the short term, with the requirement to reduce federal debt over the long term. Our nation’s commitment to NIH addresses both of these issues – by preserving jobs needed to sustain our economic recovery – and by generating the discoveries that will bolster the nation’s economy for decades to come. Given its many economic, societal and health benefits, lawmakers on both sides of the aisle should make NIH funding a top priority. UMR believes it is time to be bold in thinking about how to best sustain and grow our investment in medical research even in fiscally challenging times. We applaud the Committee’s unprecedented examination of federally-funded research as a driver of innovation and hope that this is the beginning of a long-term strategy on creating sustainable funding streams for our critical research agencies, including NIH.