

**Remarks by Senator Richard J. Durbin
Introducing the American Cures Act**

**Center for National Policy
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As Prepared for Delivery

I want to thank CNP's chairman and my friend Peter Kovler for his kind words. I want to thank the Center for National Policy for inviting me to speak about a topic that is vital to our nation's economic security and to every American family.

More than 50 years ago, President Kennedy welcomed a large group of Nobel Laureates to the White House. He quipped it was "the most extraordinary collection of talent, of human knowledge, that has ever been gathered together at the White House, with the possible exception of when Thomas Jefferson dined alone." I have a similar feeling today.

In this room are many people who represent what is best about America. We are joined by representatives of the Leukemia & Lymphoma Society, the American Lung Association, the National Kidney Foundation and scores of other leading medical research organizations. Also with us are medical researchers who are pursuing breakthrough discoveries with help from the National Institutes of Health and other federal research agencies. I also want to acknowledge some special heroes: leaders from Disabled American Veterans, the Wounded Warrior Project and other veteran's service organizations. Thank you for your continued service to our nation and our veterans.

Public support for discovery, an indispensable partner

Chairman Kovler spoke too highly of my work and far too modestly about the life-saving work that he and his family make possible through their generous support. The Kovlers are one of the leading families of Chicago.

Like nearly every family in America, the Kovlers have been touched by the tragedy of cancer. Peter's mother, Marjorie, died of pancreatic cancer when she was 49 years old. Peter and his family have spent decades and a small fortune working to spare other families the heartache they experienced. Just Google "Kovler" and "medical research" and you will see what I mean. Among their contributions to medical research are the Everett and Marjorie and Kovler Professorship in Pancreas Cancer Research at the Johns Hopkins University School of Medicine and *two* important laboratories at the University of Chicago: the Marjorie B. Kovler Viral Oncology Laboratories and the Kovler Diabetes Center.

America is wealthier and the world is healthier today because of charitable contributions to medical research, ranging from the philanthropy of the Kovler family and the Bill & Melinda Gates Foundation and others, to the dimes and dollars donated by school children. But what I want to talk about today is the role of the *federal government* in medical research and discovery.

Discovery is in America's DNA

Since our earliest day as a nation, Americans have always believed in the power of discovery and innovation to make the world better. Faith in scientific progress is part of our national DNA. When George Washington urged the first Congress in 1790 to pass America's first patent law, he advised lawmakers, "There is nothing which can better deserve your patronage than the promotion of science." When Thomas Jefferson sent Lewis and Clark across the continent to map our nation's future in 1804, he offered them a quick education in botany, geology, geography and the finer points of navigation, and then sent him them off with one simple directive: *Explore*.

Historic discoveries from public investments in basic research

In the last two centuries, U.S. government support for scientific research has helped split the atom, defeat polio, conquer space, create the Internet, map the human genome and much more. No nation has ever made such a significant investment in science, and no nation's scientists have ever done more to improve the quality of life on Earth.

Government investments in basic research made possible Google, GPS, fiber optics, DVD players and lithium batteries. Government funding for basic research at the Veterans Administration gave us the nicotine patch and liver transplants. Without U.S. government-funded research we wouldn't have touch screens or smartphones and the world might never have heard of Apple or Steve Jobs.

Medical breakthroughs from government-supported research

In every field of scientific discovery, the U.S. government-funded research has led to extraordinary advances, both nationally and globally. But it is federal investments in medical research that have helped produce the greatest discoveries in our history – and hold the greatest promise for our future.

The global leaders in the 21st century will be the nations that invest wisely in discovery and innovation – especially in biomedical research. Biomedical research can help lengthen lives – and shrink deficits. Medical research is also where many of the most promising new jobs and industries will come from. I want those discoveries to be made here, in Illinois and across this country.

Two babies apparently cured of AIDS

America is unquestionably the global leader in medical research today. We owe that preeminence to investments made by previous generations -- investments that continue to produce dramatic discoveries today.

Think about this: A generation ago, an AIDS diagnosis meant a sure and agonizing death.

Last week researchers revealed that a second American baby born with H.I.V. has apparently been cured of the virus with drugs delivered just minutes after birth. The so-called "Long Beach baby" is the second American baby to be apparently "cured" of H.I.V. Both babies were treated as part of a research project supported by the National Institutes of Health. Their apparent cures offer real hope for the 250,000 babies who are born into this world each year with H.I.V., most of them in desperately poor nations.

Falling cancer deaths

On cancer, we have seen U.S. cancer death rates fall 1 percent a year, every year, for nearly two decades. We are saving lives – and that’s not all. Each 1 percent decline in cancer deaths saves our economy a half-trillion dollars a year in decreased health care costs and increased productivity.

Janet Rowley – cancer genetics pioneer

Let me tell you about one of the great pioneers of cancer research. Dr. Janet Rowley may not be a household name. But tens of thousands of people are alive today because of her work and her insight.

Dr. Rowley spent nearly her entire career at the University of Chicago. She died just before Christmas last year at the age of 88. She was still riding her bicycle to work nearly every day until just months before her death.

She entered the University of Chicago on a scholarship when she was just 15 years old. She was accepted into the university’s medical school when she was 19 but she had to wait a year to start because the med school had already filled its quota for women that year: three women in a class of 65.

In the early 1960s, Dr. Rowley’s husband, who was also a medical researcher, was working for the NIH in Maryland when he was offered a sabbatical to work at Oxford University. Janet Rowley packed up the couple’s four boys, moved the family to England and, with a small NIH grant herself, began studying DNA in human chromosomes.

In 1962, the family returned to Chicago and Dr. Rowley convinced the University of Chicago to give her a microscope, a desk, and a salary of \$5,000 a year so she could continue her research part-time. She said she could only work part-time because she had four children.

Ten years later, Janet Rowley was sitting at her dining room table, studying photographs of chromosomes that she had cut out when she had what she called an “oh, wow moment.” She noticed that bits of material on two chromosomes in a particular type of leukemia gene weren’t where they were supposed to be; they had traded places. She called that process “genetic translocation.”

She wrote to *Nature* and the *New England Journal of Medicine* describing her findings – and they sent back rejection letters. But Dr. Rowley persevered and found more examples of genetic translocation linked to cancers. Soon, her groundbreaking studies fundamentally altered our understanding of cancer.

Until Janet Rowley’s “oh, wow moment” researchers had thought that genetic abnormalities were the result of cancer. Dr. Rowley’s work showed that it was the other way around: the mutations caused cancer. That revolutionary insight led to targeted drug treatments for previously untreatable cancers like CML -- chronic myelogenous leukemia. As recently as a decade ago, CML was often a death sentence. Today it can be treated, and even cured, with a lifesaving drug called Gleevec.

Jack Zager knows what a medical miracle Gleevec can be. Jack lives in the Baltimore area. He and his wife Ellen met when they were students at the George Washington University. They fell in love, married and had three children – two girls and a boy.

On Jack's 50th birthday, he went in for a routine physical. His blood work showed a slightly elevated white cell count but his doctor wasn't too concerned so Jack wasn't either. After a while he forgot about it. A few months later, an unrelated condition landed Jack in the hospital. His body healed quickly, but his white cell count remained low. Then came the call from his internist. Bad news. "Jack, you have cancer." Chronic myelogenous leukemia."

His internist sent him to an oncologist, who started him on Gleevec immediately. Within months, the cancer was in remission.

In two weeks, Jack Zager will celebrate his 60th birthday. Today there isn't a trace of cancer in his blood. He runs his own company, a small business he started after his diagnosis. He does volunteer work with charities. He's always loved music. Now he sings with a group. A while back, they sang the National Anthem at a Baltimore Orioles game. And about 4 ½ years ago Jack Zager walked his first-born down the aisle at her wedding.

He's knows he's lucky. His older brother died of a more advanced form of the same cancer he had. His father also had CLM.

Jack Zager never got to meet Dr. Janet Rowley, the brilliant woman whose discoveries made possible the drug that saved his life. Neither did Dottie Spriggs. Dottie also lives in Baltimore. She was diagnosed with CLM 14 years ago. She, too, is also alive today because of Gleevec.

But Dottie is here today. Jack is also here with Sara, the daughter he walked down the aisle. Dottie, Jack and Sara, please stand up so we can acknowledge your courage. They are living proof that federal investments in medical research continue to pay powerful dividends for decades.

Promising breakthrough research in the pipeline

There are many more promising advances in the medical research pipeline today. Scientists in government-supported labs are working today on research that one day soon could lead to vaccines for HIV/AIDS, malaria and other debilitating and deadly diseases.

Researchers at NIH and CDC are exploring the possibility of a "pan-influenza vaccine" – one vaccine that could protect against all strains of the flu. It could mean the end of annual flu shots. And it could greatly reduce the risks of the next global flu pandemic.

Another example: President Obama recently proposed a BRAIN Initiative, to revolutionize the field of neuroscience in the same way the Human Genome Project transformed the field of genetics. This could mean enormous advances for efforts to treat and possibly even prevent diseases such as epilepsy, schizophrenia, autism and addiction – diseases that cost the U.S. billions of dollars a year in health care costs and lost productivity, not to mention the toll they take on those with the diseases and their families.

Not lack of knowledge, lack of money

Last summer, I met with a research scientist in St. Louis who was confident that biomedical research is on the cusp of making transformative discoveries. He fears that what will keep us from making those discoveries is not lack of knowledge but lack of federal funding. He's right to be concerned.

America's place as the world's innovation leader and our future prosperity are at risk because we are no longer investing adequately in basic science. Think about this: In 1965 the U.S. spent more than 25 percent of our non-defense discretionary budget on research and development. That is now down to 10 percent.

NIH – the National Institutes of Health -- is America's leading medical research agency and the foremost biomedical research institute in the world. From 2003 to 2012, U.S. investment in NIH research didn't even keep up with inflation. That resulted in a 22 percent decline in real purchasing power in a single decade.

The number of research grants NIH can fund has declined every year for the past 10 years. A decade ago, 30 percent of qualified NIH grant proposals were funded. Today it's down to 15 percent – the lowest rate in history. The odds of NIH funding a new cancer research project are even lower: just 12 percent.

Dr. Francis Collins, director of the NIH, is among many now warning that inadequate funding of basic research will cause some of America's best young researchers to take their talents to other industries -- or other countries.

There are indications that brain drain is already starting. In 1982, 18 percent of NIH primary investigators were under the age of 36. In 2011, just 3 percent of NIH primary investigators were under the age of 36. A new analysis released just last week by the American Society of Biochemistry and Molecular Biology shows that the number of NIH investigators dropped sharply last year, with as many as 1,000 researchers no longer working on NIH-funded research.

How many Janet Rowleys is America losing because of ill-advised cuts to basic medical research? How many life-saving discoveries are being delayed? How many jobs and lives will we lose unnecessarily if we lose our position as the global leader in bio medical research and innovation?

Other nations are investing

Other nations – especially in Asia – are placing a priority on research investments. Between 1999 and 2009, Asia's share of worldwide R&D expenditures grew from 24 percent to 32 percent, while the U.S. R&D expenditures fell from 38 percent to 31 percent.

China in particular has made medical research a top national priority. Think about this. Over the last decade, while the U.S. was increasing federal R&D investments 4 percent a year, China was increasing its R&D investments by 20 percent a year. If we stay on this course, China will be investing more in research and development as a share of its overall economy than the U.S. as soon as the year 2020.

We know that venture capital for innovative research follows public investment in research -- especially when the public commitment is predictable and assured. China today is already the world's second-largest source of venture capital for inventions involving medical technology.

China is also working hard to lure home Chinese scientists who have studied and worked in the U.S. and elsewhere, especially targeting researchers in promising areas such as nanotechnology and cellular biology.

And let me be clear: Our competition isn't just in Asia. The European Union has committed to a five-year plan to boost biomedical research. The United Kingdom, under conservative government, has adopted a national "Strategy for U.K. Life Sciences" that calls for targeted new investments in life sciences research to make the UK a global center for life sciences.

Human Genome Project

The Human Genome Project demonstrates the enormous health and economic benefits we stand to gain when we focus America's best scientific minds on our biggest medical challenges. It is a powerful example of the vital role that smart federal research funding can have in producing new treatments and technologies that can save lives and save money and create not just new jobs but whole new industries .

Between 1988 and 2012, the American people invested \$14.5 billion dollars in federal research and development funds in the Human Genome Project. That's roughly \$2 dollar per person per year over 24 years. As of last year, that \$14.5 billion dollar investment had triggered nearly \$1 trillion in economic activity – a return of nearly \$150 for every dollar invested.

It created more than 152,000 jobs. It has led to new insights and new hope for improved treatments for diseases ranging from cancer to Alzheimer's, Parkinson's disease, addiction and heart disease. Genomic applications and technologies are also yielding promising advances beyond medicine, including in agriculture, renewable energy development and homeland security.

The Human Genome Project was the largest single undertaking in the history of life sciences. America did that. But today we risk losing our leadership in gene research to China. China's cutting edge new Beijing Genomics Institute gives it the world's largest next-generation sequencing capacity, with more sequencing capacity than the entire United States and about one-third of total global capacity.

American Cures Act

If America is going to remain the world's leader in cutting-edge biomedical research, we must make federal funding for medical research a national priority. I will be introducing a bill soon that will do that.

The American Cures Act will create a mandatory fund to provide steady, predicable funding for breakthrough research at our nation's top four biomedical research agencies. The agencies are the National Institutes of Health, the Centers for Disease Control and Prevention, the Department of Defense health programs and the VA's Medical and Prosthetic Research Program, its biomedical research arm.

American Cures will direct steady, predictable increases to America's most promising medical research projects. The new funding will start at \$1.8 billion the first year and increase gradually each year for 10 years. In all, we will dedicate \$150 billion over the next decade for high-reward medical research.

The federal budget sequester, which went into effect a year ago, forced NIH to eliminate funding for 700 promising new projects. The federal government shutdown last October compounded the injury. Francis Collins said he walked through empty NIH labs during the shutdown with tears in his eyes.

As he put it: "Just a week before, all kinds of great science had been going on and then, because of political stalemate, none of that was allowed to happen."

American Cures will make funding for critical biomedical research projects less political and more predictable. It will allow America's smartest medical researchers to spend less time trying to cut their budgets and more time finding new ways to cut cures rates and lower the costs of cancer care. We have three original co-sponsors so far: Senator Jack Reed of Rhode Island, Senator Sherrod Brown of Ohio and Senator Mazie Hirono of Hawaii. And we expect more.

Why focus on biomedical research

America needs smart people working on lots of problems. Certainly, we need smart scientists searching for new energy sources that can fuel our economy without further destabilizing our climate. So why focus on biomedical research? I'll give you three reasons.

First, investing in biomedical research is one of the best tools our nation has for creating economic growth and jobs. The NIH funds research at universities, labs and hospitals in every state in the nation. Every state. These are good jobs with good wages. The average salary for jobs connected directly to the Human Genome Project, for instance, is more than \$52,000. That's 25 percent higher than the national average.

And it's *not* just researchers who benefit. Studies show that every dollar invested in NIH research results in \$2.21 in local economic growth. That's a return on investment of more than 100 percent. Try finding that on Wall Street.

In my state of Illinois, the payoff for taxpayers is even greater: every dollar the NIH invests in Illinois generates \$2.43 in business activity -- nearly a 150 percent return on investment.

These aren't just scientists' jobs. The effect of NIH funding ripples out. Construction jobs are created as universities expand their labs or build new ones. Caterers and restaurants pop up to provide meals around research hubs. New discoveries lead to new biotech companies, which create new jobs. The economic multiplier effects are significant.

Second, we owe our service members and veterans the best medicine and the best health care a grateful nation can provide. By investing in biomedical research at the VA and DOD, we can keep our promise to those who protected us. We can continue to search for new and better ways to treat post-traumatic stress syndrome and traumatic brain injury, two of the signature wounds of the wars in Iraq and Afghanistan. Researchers at the Rehabilitation Institute of Chicago can build on their pioneering work to replace limbs lost in war zones with "bionic limbs" that move how and when the brain tells them to.

The third reason for focusing on biomedical research is basic math. One of the biggest drivers of our long-term deficits is rapidly growing health care costs. Investing in breakthrough biomedical research can lead to more affordable treatments -- and maybe cures -- for diseases and conditions that that now shatter lives and budgets.

Saving money and lives by targeting today's health challenges

How can spending more on cutting edge biomedical research save money in the long-run? Take one example: Alzheimer's disease. Today more than 5 million Americans are living with Alzheimer's disease. And a new person is diagnosed with Alzheimer's every 68 seconds. Last year, caring for people with Alzheimer's cost Medicaid and Medicare \$203 billion.

If we stay on this same path, medical costs associated with Alzheimer's disease in the year 2050 are expected to total \$1.2 trillion a year. That's a 500 percent increase. A medical breakthrough that could delay the onset of Alzheimer's by just five years could cut those annual costs by 40 percent and save taxpayers hundreds of billions of dollars a year.

We have to think and invent our way to a stronger economy

I served on the Simpson Bowles deficit reduction commission and to the surprise of many of my friends, I supported the commission's recommendations. I didn't agree with every single one of the recommendations. But I believe strongly in the core principle of those recommendations: We have to cut the deficit, but we have to be smart about how we do achieve savings.

We have to cut where we can. At the same time, we need to invest in high-value research that will create jobs today and strengthen our economy and improve our quality of life in the long-run.

America must preserve our position as the global innovation leader. We can't simply cut our way out of this deficit or tax our way out. We have to think and invent our way out. We have halved the budget deficit since the start of the Great Recession. We need to close our invention and innovation deficit.

A research budget that fails even to keep up with inflation and fails to foster scientific progress hurts our economy, jeopardizes our health and undermines America's standing in the world. American Cures will enable American scientists to continue to lead the world in medical research, and allow American taxpayers to reap the benefits of their investments – from new treatments, to new cures, to new jobs with good wages.

Luis Puertas: from wounded warrior to blade runner

Some of the most impressive people I know I first met at Walter Reed Medical Center. Many were rebuilding their lives after suffering catastrophic injuries. The most remarkable thing about them was not how badly they had been injured, but how badly they wanted to recover from their injuries so they could continue to serve our nation.

Tammy Duckworth was one of those wounded warriors. Today she is a Congresswoman from my home state of Illinois and a champion for American veterans and American values. Specialist Luis Puertas is another wounded warrior who has found a new way to give back.

In September 2006, Army Specialist Luis Puertas was on patrol in Baghdad when a bomb ripped apart the Humvee he was riding in. He lost both legs instantly

He was fitted for prosthetic legs at Walter Reed. At first, his goal was just to learn to walk again. Then a strange thing happened. He decided he wanted to run. He played soccer in high school in Florida but he had never run competitively. So he started training; 360 days after his amputation, he had his first Army 10K.

Last May he competed in the 4th Annual Wounded Warrior Games in Colorado Springs. He finished first in the 100 meter, first in the 200 meter and first in the 1,500-meter above-knee amputee races. He went on to represent the United States at the 2013 International Paralympic Committee Athletics World Championships in Lyon, France last July. His dream is to represent the U.S. at the 2016 Paralympic Games in Rio de Janeiro.

Luis Puertas is here today with two men who have helped him and scores of other amputees to walk again on "bionic" legs: Dr. Timothy O'Leary, chief research administrator for the Veterans Administration; and Colonel Michael Nelson, director of education and training at Walter Reed. Specialist Puertas, Dr. O'Leary and Colonel Nelson, please stand so we can acknowledge your service.

Before the Wounded Warrior Games, Specialist Puertas was asked how he thought he would perform. He replied: "I will win gold in every event today." He said: "That's how you have to think about things." You envision it. You work for it. You do it. We need that same determination when it comes to winning the race for biomedical cures and jobs for America.

Conclusion: "You only fail if you stop too soon."

One more thought before I close. When I was a boy, summer was a time of dread for many people. Many Americans lived in fear of an infectious viral disease that attacks the nerve cells and sometimes the central nervous system, often causing muscle wasting, paralysis or even death. It's called polio and it struck thousands of Americans every year, most of them young and healthy.

Nearly 60 years ago, Dr. Jonas Salk invented a polio vaccine. Today, thanks to the work of scientists at CDC and NIH and non-profit organizations such as the Bill & Melinda Gates Foundation, polio has been eradicated in the United States and in all but a handful of the world's poorest nations.

Discovering the polio vaccine won Jonas Salk the Nobel Prize. If he had done nothing else, his place in medical history would have been honored and assured. But Jonas Salk wasn't content to rest on past achievements. He was an American. In the last years of his life, he was searching for an AIDS vaccine. When his early efforts failed, he was undeterred. He said: "*You can only fail if you stop too soon.*"

This is a decisive moment of historic opportunity. We must continue to invest in order to reap the immense rewards of decades of work by the best scientific and medical minds in the world. The only way we can fail is by stopping too soon.

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