

every single man and woman who is serving us today in protecting our country by saying to them: We are going to now rely on foreign companies for our vehicles for the trucks they drive, the cars they drive, the tanks they drive. That doesn't make any sense at all.

We all have a stake in what happens in Detroit. We all have a stake in what happens to our American manufacturers and our American auto industry. We need a 21st century manufacturing strategy that is focused on American manufacturing, advanced manufacturing, as well as national security and energy security. Our automakers are an important part of that, but so are our other suppliers, our other manufacturers.

One of the things I so appreciate about President Obama's vision is that he understands we need to manufacture in this country. The budget he has given us focuses on our ability to create jobs through manufacturing, through manufacturing in the new energy economy, and in the traditional areas of manufacturing. In America, we need a revitalized advanced manufacturing base. That will be a major part of our economic recovery as a country.

Again, none of us can afford for our American automakers to fail. There is not a State represented here that can afford for that to happen. Failure would mean loss of jobs, a loss of capacity for our national defense, and the ability for us to build on an energy independence for the future.

Again, what happens in Detroit doesn't stay in Detroit. It affects every State, every American, and I very much appreciate the commitment of the White House auto task force and President Obama to work with us for a vital and vibrant auto industry for the future.

Mr. President, I yield the floor.

REHABILITATION INSTITUTE OF CHICAGO

Mr. DURBIN. Mr. President, researchers at the Rehabilitation Institute of Chicago pursue scientific discoveries that blend the most advanced medicine with technology to create ability where it has been lost.

Their most recent innovation replaces a lost limb with a robotic one, which is controlled just as their lost arm was controlled—by thoughts and commands transmitted by the brain.

It has captured the world's attention. Their research was published recently in the *Journal of the American Medical Association* and highlighted by the *New York Times*. It gives us a taste of what might be possible as doctors, scientists, and engineers continue to learn more about the human body's nervous system.

It also provides new hope for all Americans who have an amputated arm or leg, including the hundreds of Iraq and Afghanistan veterans who have lost a limb through their service to our country.

You almost need to be a biomedical engineer to even pronounce the name of the technique developed at the Rehabilitation Institute of Chicago: pattern-recognition control with targeted reinnervation.

But it is easy to understand the procedure's importance to people around the world who have lost a limb.

When a person loses a limb, their brain does not know that the limb is gone. The brain continues to send signals through the nervous system, as if that lost arm or leg still existed. So, when a person who has lost an arm thinks about closing her hand or pointing a finger, her brain continues to send signals intended for the missing limb.

Dr. Todd Kuiken, a biomedical engineer and physician at the Rehabilitation Institute of Chicago, has found a way to harness these signals. His technology allows a patient to operate her prosthetic arm by thinking of the movement, as if her natural arm still existed.

First, Dr. Kuiken takes the good nerves that remain in the shoulder after the loss of an arm. Through surgery, these nerves are redirected and implanted into a patient's healthy remaining muscles in the chest.

When the patient thinks about closing her hand, the brain sends a signal through those redirected nerves into the reinnervated muscle, instead of in the direction of the missing arm.

The next step is to interpret those signals. It is not an easy task. Our hands alone can perform hundreds of movements, from the slightest finger wiggle to the clenching of a fist. Each movement is the result of a different pattern of signals from the brain. The challenge becomes deciphering which pattern means "close the hand"? Which pattern means "turn the wrist"?

Working to unlock the code, Dr. Kuiken and his colleagues now know which pattern is intended to produce a particular arm or hand movement. They place tiny antennas on the patient's chest to detect the patterns. The antennas convert the patterns into digital signals and send those signals to an advanced artificial arm worn by the patient. The signals tell the arm how to move.

The results of Dr. Kuiken's research have been promising. Amanda Kitts was one of the first patients to be fitted with one of the new prosthetics developed by the Defense Department's advanced research program, DARPA.

Amanda owns three daycare centers in Tennessee. She started working with the Rehabilitation Institute in 2006 and spent the following years traveling between Chicago and her home in Knoxville.

Amanda lost one of her arms in an automobile accident. The years she received therapy were difficult for her. She credits the therapists at the Rehabilitation Institute for giving her the strength to realize that her injury didn't have to change her outlook on life.

Amanda thought she would never be able to hug children again, including her son. But because of her new arm, she can.

She says of her new arm: "It was wonderful . . . It made me feel more human because I could work it almost like a regular arm. I just had to think and it responded. My new arm made me feel like I could do anything again."

Dr. Kuiken and the Rehabilitation Institute of Chicago have been working for several years to transfer this technology for the benefit of our wounded servicemembers. Through this collaboration, 10 wounded warriors have received this remarkable surgery at the Brooke Army and Walter Reed Medical Centers and are having their new prostheses fit at these state-of-the-art medical facilities.

Dr. Kuiken and the other researchers on this project deserve our thanks for their efforts, as does the Rehabilitation Institute of Chicago. Every year since 1991, *U.S. News and World Report* has identified the facility as the best rehabilitation hospital in the United States.

The Rehabilitation Institute is led by the indefatigable Dr. Joanne Smith, who did some of her training and subsequently consulted on patients at the VA. In addition to having expertise in prosthetics, the hospital is a leader in the treatment of traumatic brain injuries, the signature injury of the wars in Iraq and Afghanistan. Dr. Smith has worked to make her hospital's expertise and rehabilitation services available to the VA and the military services.

More work remains to be done to develop the targeted reinnervation technique. The researchers at the Rehabilitation Institute tell me that the sensation nerves to and from a hand—which relay touch sensations from hot to cold and sharp to dull—can also be harnessed. Doctors are working to put sensors into a robotic limb that has the ability to pick up these sensations.

If successful, the technique would allow patients to feel what they touch, as if they were touching it with their missing hand.

Such technology will help someone like Amanda Kitts regain her ability to sense touch from—feeling the texture of an object to knowing how hard she is squeezing her son's hand. The advance in sensing touch would help her reconnect to her world.

I am proud to have supported a \$2 million request in the fiscal year 2009 Defense appropriations legislation to help advance Dr. Kuiken's research in Chicago. Those men and women in uniform who have lost a limb in service to our country deserve the best technology we have to help them regain their full abilities.

PATH TO BIPARTISAN AGREEMENT

Mr. GREGG. Mr. President, the spiraling cost of health care represents a