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Remarks on presenting the National Medals of Science and Technology

William J Clinton

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The President. Thank you very much. Thank you. Thank you and welcome to the White House. Thank you, Secretary Daley, and thank you, Dr. Lane, for your leadership. Secretary Shalala, Dr. Colwell, Representative Nick Smith, Representative Eddie Bernice Johnson, thank you for your support of science and technology in the United States Congress, across party lines. We welcome Sir Christopher Meyer, the British Ambassador to the United States, here to be with us today.

Every year I look forward to this day. I always learn something from the work of the honorees. Some of you I know personally; others, I've read your books. Some of you, I'm still trying to grasp the implications of what it is I'm supposed to understand and don't quite yet. [Laughter) But this has been-I must say, one of the great personal joys of being President for me has been the opportunity that I've had to be involved with people who are pushing the frontiers of science and technology and to study subjects that I haven't really thought seriously about since I was in my late teens. And I thank you for that.

When Congress minted America's first coin in 1792, one of the mottos was "Liberty, Parent of Science and Industry." Very few of those coins survived, but the Smithsonian has lent us one today. I actually have one. It's worth $300,000. [Laughter] Not enough to turn the head of a 25-year-old ,com executive-[laughter]-but to a President, it's real money. [Laughter] And I thought you might like to see it because it embodies a commitment that was deep in the consciousness of Thomas Jefferson and many of our other Founders. And we could put the same inscription on your medals today.

You have used your freedom to ask and answer some of the greatest questions of our time. Each of you has been a brilliant innovator, and more, breaking down barriers between disciplines, broadening the frontiers of knowledge, bringing the products of pure research into everyday lives of millions of people, helping to educate the next generation of inventors and innovators.

For this, America and, indeed, the entire world is in your debt. It is terribly important that we continue to open the world of science to every American. The entire store of human knowledge is now doubling every 5 years. In just the 8 years since I first presented these medals, think about what has occurred. In 1993 no one's

computer had a zip drive or a Pentium chip; there were only 50 sites on the World Wide Web, amazing, January of 1993. Today, there are about 50 million. In 1993 cloning animals was still science fiction. But Dolly the sheep would be born just 4 years later. Since 1993, we've sent robots to rove on Mars, created prototype cars that get 70 to 80 miles a gallon, invented Palm Pilots that put the Internet on our belts and lead to the increasing nightmares of a busy life. [Laughter]

The work that you and your colleagues have done has changed everything about our lives. It has brought us to the threshold of a new scientific voyage that promises to change everything all over again.

Perhaps no science today is more compelling than the effort to decipher the human genome, the string of 3 billion letters that make up our genes. In my lifetime, we'll go from knowing almost nothing about how our genes work to enlisting genes in the struggle to prevent and cure illness. This will be the scientific breakthrough of the century, perhaps of all time. We have a profound responsibility to ensure that the life-saving benefits of any cutting-edge research are available to all human beings.

Today, we take a major step in that direction by pledging to lead a global effort to make the raw data from DNA sequencing available to scientists everywhere to benefit people everywhere. To this end, I am pleased to announce a groundbreaking agreement between the United States and the United Kingdom, one which I reconfirmed just a few hours ago in a conversation with Prime Minister Blair and one which brings the distinguished British Ambassador here today.

This agreement says in the strongest possible terms our genome, the book in which all human life is written, belongs to every member of the human race. Already the Human Genome Project, funded by the United States and the United Kingdom, requires its grant recipients to make the sequences they discover publicly available within 24 hours. I urge all other nations, scientists, and corporations to adopt this policy and honor its spirit. We must ensure that the profits of human genome research are measured not in dollars but in the betterment of human life. [Applause] Thank you.

Already, we can isolate genes that cause Parkinson's disease and some forms of cancer, as well as a genetic variation that seems to protect its carriers from AIDS. Next month the Department of Energy's Joint Genome Project will complete DNA sequences for three more chromosomes whose genes play roles in more than 150 diseases, from leukemia to kidney disease to schizophrenia. And those are just the ones we know about.

What we don't know is how these genes affect the process of disease and how they might be used to prevent or to cure it. Right now, we

are Benjamin Franklin with electricity and a kite, not Thomas Edison with a usable light bulb.

As we take the next step and use this information to develop therapies and medicines, private companies have a major role. By making the raw data publicly available, companies can promote competition and innovation and spur the pace of scientific advance. They need incentives to throw their top minds into expensive research ahead. They need patent protection for their discoveries and the prospect of marketing them successfully, and it is in the Government's interest to see that they get it.

But as scientists race to decipher our genetic alphabet, we need to think now about the future and see clearly that, in science and technology, the future lies in openness. We should recognize that access to the raw data and responsible use of patents and licensing is the most sensible way to build a sustainable market for genetic medicine. Above all, we should recognize that this is a fundamental challenge to our common humanity and that keeping our genetic code accessible is the right thing to do.

We should also remember that, like the Internet, supercomputers, and so many other scientific advances, our ability to read our genetic alphabet grew from decades of research that began with Government funding. Every American has an investment in unlocking the human genome, and all Americans should be proud of their investment in this and other frontiers of science.

I thank all of you for all you have done to build international and national support for American investment in science and technology. I am grateful that this administration has had the opportunity to increase our funding for civilian research every year and that we have requested an unprecedented increase this year, in areas from nanotechnology to clean energy to space exploration.

As the new century opens, we are setting out on a new voyage of discovery, not just into human cells but into the human heart. We cannot know what lies ahead. Each new discovery presents even more new questions. What is the purpose of the 97 percent of our genetic makeup whose function we don't know? What will we find in the genes left to identify? How will we make sure the benefits of genetic research are widely and fairly shared? How will we make sure that millions of Americans living longer lives also live better and more fulfilling ones?

Almost 200 years ago, Lewis and Clark set out on a voyage of discovery that was planned in this room, where Thomas Jefferson and Meriwether Lewis laid out maps on tables, right where you're sitting and, though it would be politically incorrect today, tromped around on animal skins on the floor. [Laughter] That discovery would not only map the contours of our continent, but expand forever the

frontier of our national imagination.

Before setting out, when Meriwether Lewis was here in the East Room with Thomas Jefferson, poring over maps and sharing the lessons in natural science, he actually lived on the south side of this room, in two small rooms that Thomas Jefferson had constructed in this big room for him. I must say today, I wish I could ask all of you to do the same. [Laughter] I always feel that when I do this, the wrong person is talking. I wish we could hear from all of you today.

One of the things that I wish I could do a better job of as President is sparking the interest and understanding of every single citizen in the work you do–of everyone's ability to see how profoundly significant what goes on in your labs and in your minds is to their future. I do think the American people are coming a long way on that, and I tried to talk in the State of the Union in ways that would help. I also try to think of little ways to illustrate how you are changing our conception of the most basic things: what is big and what is small; what is long and what is short. Dr. Lane has actually given me a primer of what nanotechnology is, and I can carry on a fairly meaningful subject about something that is totally unfathomable to me. [Laughter]

And last year, Neil Armstrong and his colleagues came back to the White House to celebrate the 30th anniversary of his walk on the Moon. And while he did it, as a part of the ceremony, he gave me just on loana vacuum–packed Moon rock which, if you see the photographs now of the Oval Office with the two chairs and the couches and the table in between, the Moon rock is now visible to the world that sees it.

And when Members of Congress and others come in and get all heated up and angry over some issue, I often call a time out, and I say, "Wait a minute. See that rock? It came off the Moon. It's 3.6 billion years old. We're all just passing through. Chill out." [Laughter It works every time. [Laughter] So there's a practical gain I got from scientific advance. [Laughter]

There are many other things that have happened that have enriched our lives. I have to acknowledge the presence here of my good friend Stevie Wonder, who has had a lot to do with improving musical technology, and is obviously interested in some of the scientific developments now going on, which might restore sight to people and other movements to people who have suffered debilitating paralysis and other things. And we thank you, Stevie, for being here today. Thank you.

As our honorees receive their medals,we thank them; all of us thank them for the way they have changed the way we view our planet and broadened infinitely the ways we gather and store knowledge. You are part of an unbroken chain from Lewis and Jefferson to Edison and

Einstein, from the cotton gin to the space shuttle, from a vaccine for polio to the mysteries of DNA. I thank each of you for what you have done to change our world and to enrich our minds, our imaginations, and our hearts.

And I think--I learned right before I came in here that it is infinitely appropriate that you are receiving these awards on Albert Einstein's birthday. So thank you very much. Congratulations.

Commander, please read the citations.

[At this point, Comdr. Michael M. Gilday, USN, Navy Aide to the President, read the citations, and the President presented the medals.

The President. Now, ladies and gentlemen, I want to just say two things in closing. First of all, we saw again today another triumph of the scientific method. After two failures, all the other honorees took off their glasses on their own. [Laughter] It was truly amazing.

This has been a wonderful day. I'd like to invite alI of you to join us in the State Dining Room for a reception in honor of the award recipients.

Thank you very much.

NOTE: The President spoke at 3:23 p.m. in the East Room at the White House. In his remarks, he referred to Prime Minister Tony Blair of the United Kingdom; Apollo 11 astronauts Neil Armstrong, Edwin (Buzz) Aldrin, and Michael Collins; and musician Stevie Wonder.