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DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
001. email	Mara A. Silver to Joshua S. Gottheimer re: SSN and DOB [Personally Identifiable Information] (1 page)	05/22/2000	b(6)

COLLECTION:
Clinton Presidential Records
Speechwriting
Josh Gottheimer
OA/Box Number: 18994

FOLDER TITLE:
Gene Therapy [2]

2016-0201-S
rc2164

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P1 National Security Classified Information [(a)(1) of the PRA]
P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P3 Release would violate a Federal statute [(a)(3) of the PRA]
P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.
PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).
RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

b(1) National security classified information [(b)(1) of the FOIA]
b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
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b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

THIS DAY IN HISTORY

MONDAY, MAY 22, 2000

WEEK IN HISTORY

Sun., May 21
Mon., May 22
Tues., May 23
Wed., May 24
Thur., May 25
Fri., May 26
Sat., May 27

HOROSCOPES

Daily forecasts

Wednesday, May 24th in history

Today is Wednesday, May 24th, the 145th day of 2000.
There are 221 days left in the year.

Today's Highlight in History:
On May 24th, 1844, Samuel F.B. Morse transmitted the message, "What hath God wrought!" from Washington to Baltimore as he formally opened America's first telegraph line.

Thought for Today:

"What makes us discontented with our condition is the absurdly exaggerated idea we have of the happiness of others."

-- Anonymous

On This Day:
In 1819, Queen Victoria was born in London.

In 1830, the first passenger railroad in the United States began service between Baltimore and Elliott's Mills, Maryland.

In 1881, some 200 people died when the Canadian ferry "Princess Victoria" sank near London, Ontario.

In 1883, the Brooklyn Bridge, linking Brooklyn and Manhattan, was opened to traffic.

In 1935, the first major league baseball game to be played at night took place at Cincinnati's Crosley Field as the Reds beat the Philadelphia Phillies, 2-to-1.

In 1941, the German battleship "Bismarck" sank the British dreadnought "Hood" in the North Atlantic.

In 1962, astronaut Scott Carpenter became the second American to orbit the Earth as he flew aboard "Aurora Seven."

In 1976, Britain and France opened transatlantic Concorde service to Washington.

In 1977, in a surprise move, the Kremlin ousted Soviet President Nikolai Podgorny from the Communist Party's ruling Politburo.

In 1980, Iran rejected a call by the World Court in The Hague to release the American hostages.

Ten years ago: Two members of the militant environmental

group Earth First! were injured when a pipe bomb exploded in their car in Oakland, California (the two were initially accused by authorities of carrying the bomb, but no charges were filed). The Edmonton Oilers won their fifth Stanley Cup as they defeated the Boston Bruins, four games to one.

Five years ago: "Hollywood Madam" Heidi Fleiss was sentenced to three years in prison and fined 15-hundred dollars for running a call-girl ring that catered to the rich and famous. Former British Prime Minister Harold Wilson died in London at age 79.

One year ago: A sharply divided Supreme Court ruled, five to four, that schools can be sued when officials fail to stop students from sexually harassing each other. The Supreme Court ruled that police violate people's privacy rights when they bring TV camera crews or other journalists into homes during arrests or searches. Mike Tyson walked out of a Rockville, Maryland, jail after serving three and a-half months behind bars for assaulting two motorists after a fender-bender.

Today's Birthdays:
Comedian Tommy Chong is 62
-Singer Bob Dylan is 59
-Actor Gary Burghoff is 57
-Singer Patti LaBelle is 56
-Actress Priscilla Presley is 55
-Country singer Mike Reid is 53
-Actor Alfred Molina is 47
-Singer Rosanne Cash is 45
-Actress Kristin Scott Thomas is 40
-Actor-dancer Gene Anthony Ray is 37
-Rock musician Vivian Trimble is 37
-Actor Eric Close is 33
-Rapper-recording executive Heavy D is 33
-Rock musician Rich Robinson (The Black Crowes) is 31
-Actor Billy L
-Sullivan is 20
-Actor-rapper Big Tyme is 17

33 Weekly Comp. Pres. Doc. 727

Public Papers of the Presidents

Public Papers of the Presidents

May 18, 1997

CITE: 33 Weekly Comp. Pres. Doc. 727

LENGTH: 3191 words

HEADLINE: Remarks at the **Morgan State** University Commencement Ceremony in Baltimore, Maryland

BODY:

Thank you. Dr. Richardson, Judge Cole, Governor Glendening, Lieutenant Governor Kennedy-Townsend, Mr. Mayor, City Council President, other elected officials, Mr. Speaker, Senator Miller, Senator Sarbanes, Congressman Cardin, and Congressman Cummings, my great partners, to the board of regents, to the faculty, staff, to distinguished alumni, to the magnificent band and choir. I thought it was a great day when I got here, but I know it is now. Thank you very much.

To the members of the class of 1997, your family, and your friends, congratulations on this important day in your lives, the lives of your Nation, and the life of this great institution. Your diploma reflects a level of knowledge that will give you the chance to make the most of the rapidly unfolding new reality of the 21st century. It gives your country a better chance to lead the world toward a better place, and it reaffirms the historic mission of Morgan State and the other historically black colleges and universities of our great land.

When the doors of college were closed to all but white students, Morgan State and the Nation's other historically black institutions of higher education gave young African-Americans the education they deserved and the pride they needed to rise above cruelty and bigotry. Today, these institutions still produce the lion's share of our black doctors and judges and business people, and Morgan State graduates most of the black engineers and scientists in the great State of Maryland.

I am here today not because Morgan State is just a great historically black university, it is a great American university. You have produced some of our Nation's finest leaders: your grads like Parren Mitchell, Kweisi Mfume, and Earl Graves; judicial leaders like Judge Bell and Judge Cole; public servants like State Treasurer Dixon; and on a very personal note, my fine assistant, Terry Edmonds, class of 1972, the first African-American ever to serve as a speechwriter for the President of the United States. There he is. *[Applause]*

Now, you're getting too much applause now, Terry. *[Laughter]*

You graduate today into a world brimming with promise and rich with opportunity. Our economy is the strongest in a generation, our unemployment the lowest in 24 years, with the largest decline in income inequality since the 1960's.

On Friday we finalized the details of an historic agreement with the leaders of Congress to balance the Federal budget for the first time in nearly three decades, in a way that will keep our economy

going and in balance with our values, caring for those in need, extending health care to 5 million more children, cleaning and preserving and restoring our environment, helping people to move from welfare to work, and most important, funding the largest investment in education in a generation and the largest increase in higher education since the GI bill in 1945, more than 50 years ago.

It will open the doors of college to all, with the largest increase in Pell grant scholarships in three decades, $ 35 billion in tax relief to help families pay for higher education, including tax deductions for the cost of all education after high school, and our HOPE scholarship tuition tax credits to make the first 2 years of college as universal by the year 2000 as a high school diploma is today.

And this agreement contains a major investment in science and technology, inspired in our administration by the leadership of Vice President Gore, to keep America on the cutting edge of positive change, to create the best jobs of tomorrow, to advance the quality of life of all Americans.

This is a magic moment, but like all moments, it will not last forever. We must make the most of it. In commencement addresses across the Nation this year, I will focus our attention on what we must do to prepare our Nation for the next century, including how we can make sure that our rich diversity brings us together rather than driving us apart and how we must meet our continuing obligation to lead the world away from the wars and cold war of the 20th century through the present threats of terrorism and ethnic hatred, weapons proliferation and drug smuggling, to a more peaceful and free and prosperous 21st century.

But today, here, I ask you simply to imagine that new century, full of its promise, molded by science, shaped by technology, powered by knowledge. These potent transforming forces can give us lives fuller and richer than we have ever known. They can be used for good or ill.

If we are to make the most of this new century, we, all of us, each and every one of us, regardless of our background, must work to master these forces with vision and wisdom and determination. The past half-century has seen mankind split the atom, splice genes, create the microchip, explore the heavens. We enter the next century propelled by new and stunning developments.

Just in the past year, we saw the cloning of Dolly the sheep, the Hubble telescope bringing into focus dark corners of the cosmos never seen before, innovations in computer technology and communications, creating what Bill Gates calls "the world's new digital nervous system," and now cures for our most dreaded diseases, diabetes, cystic fibrosis, repair for spinal cord injuries. These miracles actually seem within reach. The sweep of it is truly humbling. Why, just last week we saw a computer named Deep Blue defeat the world's reigning chess champion. I really think there ought to be a limit to this. No computer should be allowed to learn to play golf. *[Laughter.]* But seriously, my friends, in science, if the last 50 years were the age of physics, the next 50 years will be the age of biology.

We are now embarking on our most daring explorations, unraveling the mysteries of our inner world and charting new routes to the conquest of disease. We have not and we must not shrink from exploring the frontiers of science. But as we consider how to use the fruits of discovery, we must also never retreat from our commitment to human values, the good of society, our basic sense of right and wrong.

Science must continue to serve humanity, never the other way around. The stakes are very high. America's future, indeed the world's future, will be more powerfully influenced by science and technology than ever before. Where once nations measured their strength by the size of their armies and arsenals, in the world of the future, knowledge will matter most. Fully half the growth in economic productivity over the last half-century can be traced to research and technology.

But science is about more than material wealth or the acquisition of knowledge. Fundamentally, it is about our dreams. America is a nation always becoming, always defined by the great goals we set, the great dreams we dream. We are restless, questing people. We have always believed, with President Thomas Jefferson, that freedom is the first-born daughter of science. With that belief and with willpower, resources, and great national effort, we have always reached our far horizons and set

out for new ones.

Thirty-six years ago, President Kennedy looked to the heavens and proclaimed that the flag of peace and democracy, not war and tyranny, must be the first to be planted on the Moon. He gave us a goal of reaching the Moon, and we achieved it, ahead of time. Today, let us look within and step up to the challenge of our time, a challenge with consequences far more immediate for the life and death of millions around the world. AIDS will soon overtake tuberculosis and malaria as the leading infectious killer in the world. More than 29 million people have been infected, 3 million in the last year alone, 95 percent of them in the poorest parts of our globe.

Here at home, we are grateful that new and effective anti-HIV strategies are available and bringing longer and better lives to those who are infected, but we dare not be complacent. HIV is capable of mutating and becoming resistant to therapies and could well become even more dangerous. Only a truly effective, preventive HIV vaccine can limit and eventually eliminate the threat of AIDS.

This year's budget contains increased funding of a third over 2 years ago to search for this vaccine. In the first 4 years, we have increased funding for AIDS research, prevention, and care by 50 percent, but it is not enough. So let us today set a new national goal for science in the age of biology. Today, let us commit ourselves to developing an AIDS vaccine within the next decade. There are no guarantees. It will take energy and focus and demand great effort from our greatest minds. But with the strides of recent years, it is no longer a question of whether we can develop an AIDS vaccine, it is simply a question of when. And it cannot come a day too soon. If America commits to find an AIDS vaccine and we enlist others in our cause, we will do it. I am prepared to do all I can to make it happen. Our scientists at the National Institutes of Health and our research universities have been at the forefront of this battle.

Today I'm pleased to announce the National Institutes of Health will establish a new AIDS vaccine research center dedicated to this crusade. And next month at the summit of the industrialized nations in Denver, I will enlist other nations to join us in a worldwide effort to find a vaccine to stop one of the world's greatest killers. We will challenge America's pharmaceutical industry, which leads the world in innovative research and development to work with us and to make the successful development of an AIDS vaccine part of its basic mission.

My fellow Americans, if the 21st century is to be the century of biology, let us make an AIDS vaccine its first great triumph. Let us resolve further to work with other nations to deal with great problems like global climate change, to break our reliance on energy use destructive of our environment, to make giant strides to free ourselves and future generations from the tyranny of disease and hunger and ignorance that today still enslaves too many millions around the world. And let us also pledge to redouble our vigilance to make sure that the knowledge of the 21st century serves our most enduring human values.

Science often moves faster than our ability to understand its implications, leaving a maze of moral and ethical questions in its wake. The Internet can be a new town square or a new Tower of Babel. The same computer that can put the Library of Congress at our fingertips can also be used by purveyors of hate to spread blueprints for bombs. The same knowledge that is developing new life-saving drugs can be used to create poisons of mass destruction. Science can enable us to feed billions more people in comfort, in safety, and in harmony with our Earth, or it can spark a war with weapons of mass destruction rooted in primitive hatreds.

Science has no soul of its own. It is up to us to determine whether it will be used as a force for good or evil. We must do nothing to stifle our basic quest for knowledge. After all, it has propelled from field to factory to cyberspace. But how we use the fruits of science and how we apply it to human endeavors is not properly the domain of science alone or of scientists alone. The answers to these questions require the application of ethical and moral principles that have guided our great democracy toward a more perfect union for more than 200 years now. As such, they are the province of every American citizen.

We must decide together how to apply these principles to the dazzling new discoveries of science.

Here are four guideposts. First, science and its benefits must be directed toward making life better for all Americans, never just a privileged few. Their opportunities and benefits should be available to all. Science must not create a new line of separation between the haves and the have-nots, those with and those without the tools and understanding to learn and use technology. In the 21st century, a child in a school that does not have a link to the Internet or the student who does not have access to a computer will be like the 19th century child without school books. That is why we are ensuring that every child in every school, not matter how rich or poor, will have access to the same technology by connecting every classroom and library to the Internet by the year 2000.

Science must always respect the dignity of every American. Here at one of America's great black universities let me underscore something I said just a few days ago at the White House. We must never allow our citizens to be unwitting guinea pigs in scientific experiments that put them at risk without their consent and full knowledge. Whether it is withholding a syphilis treatment from the black men of Tuskegee or the cold war experiments that subjected some of our citizens to dangerous doses of radiation, we must never go back to those awful days in modern disguise. We have now apologized for the mistakes of the past; we must not repeat them, never again.

Second, none of our discoveries should be used to label or discriminate against any group or individual. Increasing knowledge about the great diversity within the human species must not change the basic belief upon which our ethics, our Government, our society are founded. All of us are created equal, entitled to equal treatment under the law. With stunning speed, scientists are now moving to unlock the secrets of our genetic code. Genetic testing has the potential to identify hidden inherited tendencies toward disease and spur early treatment. But that information could also be used, for example, by insurance companies and others to discriminate against and stigmatize people.

We know that in the 1970's, some African-Americans were denied health care coverage by insurers and jobs by employers because they were identified as sickle cell anemia carriers. We also know that one of the main reasons women refuse genetic testing for susceptibility to breast cancer is their fear that the insurance companies may either deny them coverage or raise their rates to unaffordable levels. No insurer should be able to use genetic data to underwrite or discriminate against any American seeking health insurance. This should not simply be a matter of principle but a matter of law. Period. To that end, I urge the Congress to pass bipartisan legislation to prohibit insurance companies from using genetic screening information to determine the premium rates or eligibility of Americans for health insurance.

Third, technology should not be used to break down the wall of privacy and autonomy free citizens are guaranteed in a free society. The right to privacy is one of our most cherished freedoms. As society has grown more complex and people have become more interconnected in every way, we have had to work even harder to respect the privacy, the dignity, the autonomy of each individual. Today, when marketers can follow every aspect of our lives, from the first phone call we make in the morning to the time our security system says we have left the house, to the video camera at the toll booth and the charge slip we have for lunch, we cannot afford to forget this most basic lesson.

As the Internet reaches to touch every business and every household and we face the frightening prospect that private information, even medical records, could be made instantly available to the world, we must develop new protections for privacy in the face of new technological reality.

Fourth, we must always remember that science is not God. Our deepest truths remain outside the realm of science. We must temper our euphoria over the recent break-through in animal cloning with sobering attention to our most cherished concepts of humanity and faith.

My own view is that each human life is unique, born of a miracle that reaches beyond laboratory science. I believe we should respect this profound gift. I believe we should resist the temptation to replicate ourselves. But this is a decision no President should make alone. No President is qualified to understand all of the implications. That is why I have asked our distinguished National Bioethics Advisory Commission, headed by President Harold Shapiro of Princeton, to conduct a thorough review of the legal and ethical issues raised by this new cloning discovery. They will give me their first recommendations within the next few weeks, and I can hardly wait.

These, then, are four guideposts, rooted in our traditional principles of ethics and morals, that must guide us if we are to master the powerful forces of change in the new century: one, science that produces a better life for all and not the few; two, science that honors our tradition of equal treatment under the law; three, science that respects the privacy and autonomy of the individual; four, science that never confuses faith in technology with faith in God. If we hold fast to these principles, we can make this time of change a moment of dazzling opportunity for all Americans.

Finally, let me say again, science can serve the values and interests of all Americans, but only if all Americans are given a chance to participate in science. We cannot move forward without the voices and talents of everyone in this stadium and especially those of you who are going on to pursue a career in science and technology.

African-Americans have always been at the forefront of American science. This is nothing new. Nothing, not slavery, not discrimination, not poverty, nothing has ever been able to hold back their scientific urge or creative genius. Benjamin Banneker was a self-taught mathematician, surveyor, astronomer, who published an annual almanac and helped to design the city of Washington. George Washington Carver was born a slave but went on to become one of our Nation's greatest agricultural scientists. Ernest Everett Just of Charleston, South Carolina, is recognized as one of our greatest biologists. Charles Drew lived through the darkest days of segregation to become a pioneer in blood preservation. And today you honor an African-American doctor at Johns Hopkins University who is truly one of the outstanding physicians of our time.

All these people show us that we don't have a person to waste, and our diversity is our greatest strength in the world of today and tomorrow. Now, members of the class of 1997, it is your time. It is up to you to honor their legacy, to live their dreams, to be the investigators, the doctors, and the scholars who will make and apply the discoveries of tomorrow, who will keep our science rooted in our values, who will fashion America's greatest days. You can do it. Dream large. Work hard. And listen to your soul.

Thank you, and God bless you all.

NOTE: The President spoke at 10:30 a.m. at Hughes Field. In his remarks, he referred to Earl Richardson, president, and Harry Cole, chairman, board of regents, Morgan State University; Gov. Parris Glendening and Lt. Gov. Kathleen Kennedy-Townsend of Maryland; and Mayor Kurt Schmoke of Baltimore.

LANGUAGE: ENGLISH

LOAD-DATE: August 14, 1997

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33 Weekly Comp. Pres. Doc. 727

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Devorah R. Adler
05/22/2000 10:26:10 AM

Record Type: Record

To: Joshua S. Gottheimer/WHO/EOP@EOP

cc:

Subject: draft fact sheet

DRAFT: PRESIDENT CLINTON ANNOUNCES STRONG NEW STEPS TO PROTECT THE SAFETY OF PATIENTS PARTICIPATING IN CLINICAL TRIALS
May 23, 2000

Today, President Clinton will announce that the Department of Health and Human Services is taking new steps to strengthen Federal oversight and increase the accountability of researchers conducting clinical trials with human subjects in order to protect the safety of patients participating in all clinical trials. New actions include: explicit requirements for investigators to obtain new informed consent from participants after any unexpected death or serious adverse health event related to their clinical trial; guidelines clarifying that institutional review boards (IRBs) responsible for the oversight of clinical research are expected to conduct an annual audit of patient safety protocols to ensure that informed consent has been obtained appropriately and is being maintained in compliance with Federal regulations; proposing new civil monetary penalties of up to $X per violation to promote compliance with current regulations; expanding patient safety training requirements for Federal researchers; improving the ability of IRBs to monitor the risk associated with ongoing clinical trials; and taking initial steps to address financial conflict of interest issues. These new actions, which respond to a Presidential request made in December, are necessary to assure patient safety, increase public confidence in clinical trials, and in so doing, enhance likely participation in these critical trials.

ADDITIONAL OVERSIGHT OF CLINICAL TRIALS IS NECESSARY TO ENSURE PATIENT SAFETY. Federal investigation and review of clinical trials using human subjects has significantly increased over the past three years. Since June of 1998, the Office of Protection from Research Risks (OPRR) has reviewed records from clinical trials being conducted at more than 140 research institutions and FDA has reviewed records from over 500 of these entities. This year, FDA and OPRR expect to conduct X off-site reviews to ensure patient safety. Although HHS has acted to suspend Federally funded research when uncovering evidence that trials were operating out of compliance with current regulations, additional action and more stringent oversight is necessary to ensure patient safety. Without these changes, a growing public distrust in the safety of clinical trials could discourage subject participation in these critical studies.

- **Oversight responsibilities are often ignored.** The Office of the Inspector General recently testified before Congress that Institutional Review Boards (IRBs) conduct minimal continuing review of approved research as required by law, resulting in clinical trials operating outside of their approved protocols by: enrolling patients in trials even though they did not meet the operational protocol; using medical devices as part of a study without IRB approval; and failing to obtain informed consent from patients participating in the trial.

- **Patients are often inadequately informed about the risks associated with participation in a clinical trial.** Recent reports indicate that participants may not be adequately informed of the risk associated with participation in a clinical trial. Trial subjects are often not informed of events in other studies, either on animals or on people, that have significant implications for the safety of human studies, and researchers often fail to communicate information clearly or correctly to participants.

- **Financial conflicts of interest may interfere with patient safety.** Recent reports indicate that researchers - even in academic settings - are now involved in commercial ventures that create new ethical and conflict-of-interest considerations. For example, investigators leading clinical trials are sometimes major stockholders in the company producing the product being tested. As recently highlighted in the Journal of American Medicine, there is considerable evidence that researchers with financial links to drug companies are more likely to report results that are favorable to the products of those companies without such ties.

- **Investigators and IRB members are often not trained to uphold human subject protections.** Although the IRB system depends on researchers' commitment to uphold human-subject protections, a recent OIG report stated that it offers only limited opportunities for continuing education for IRB members and investigators to ensure that they are sensitized to the importance of these protections. Investigators that are not adequately trained often fail to realize the ramifications - for both the integrity of the research and the health of the trial participants - of ignoring patient protection safeguards.

PRESIDENT CLINTON ANNOUNCES NEW STEPS TO PROTECT PARTICIPANTS IN CLINICAL TRIALS. Today, President Clinton will announce new action to:

- **Explicitly require investigators to obtain new informed consent from participants after any unexpected death or serious adverse health event related to their clinical trial.** As part of the guidance to be issued this spring, HHS will require investigators to reconfirm informed consent of participants after a significant event, such as the unexpected death or serious illness of a trial participant or a patient in a clinical trial using similar scientific techniques, that may have implications for patient safety. This re-confirmation of informed consent must be obtained in writing and documented in subject records.

- **Issue new guidelines stating that IRBs are expected to conduct an annual audit of patient safety protocols to ensure that informed consent has been obtained and is being maintained appropriately.** This spring, HHS will issue guidance stating that all IRBs are expected to conduct an audit of the patient records and safety protocols to determine that informed consent has been obtained and is being maintained in accordance with Federal regulations. These audits should be conducted as part of the IRBs' annual review of the clinical trials under their supervision. For particularly risky or complex clinical trials, such as *[example]*, IRBs will be expected to take additional measures, such as directly observing the informed consent process.

- **New penalties for non-compliance with Federal regulations.** The President also announced that this spring, the Administration will send legislation to the Congress providing FDA with new authority to levy civil monetary penalties of up to $XX per violation to researchers out of compliance with Federal guidelines. While FDA can currently issue warning letters or impose regulatory sanctions that halt research until problems are rectified, financial penalties give the agency additional tools to sanction those who do not follow federal guidelines.
- **Expand training requirements for Federal researchers.** The President will announce that NIH will expand its training requirements by requiring all clinical researchers receiving federal funds to complete standard research bioethics and human subject research training before their research grants are renewed. The HHS Office for Protection from Research Risks (OPRR) will also require institutions, as part of their formal research agreements with OPRR, to certify that their IRB administrators and members have taken this same training by *[date]*.

- **Improve the ability of IRBs to monitor ongoing clinical trials.** The President announced that this *[timeframe]*, HHS will issue guidance requiring smaller-scale early research trials (Phase I and Phase II) to adopt will be required to formally share their analysis of adverse events observed during the trials with the responsible IRB. NIH already requires that the Data Safety Monitoring Boards required for all large-scale (Phase III) trials formally share their analysis of adverse events observed during the trials with the responsible IRB.

- **Address issues related to financial conflict of interest.** The President announced today that this summer, HHS will hold public discussions this summer to find new ways to manage conflicts of interest so that research subjects are neither misled nor coerced, and to further ensure that research results are analyzed and presented objectively. Based on these public forums, NIH and FDA will work together to develop new guidance for the broader medical research community, which will require that any researchers' financial interest in a clinical trial be disclosed both to potential participants and to federal officials.

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May 23, 2000

Today, President Clinton will announce that the Department of Health and Human Services is taking new steps to strengthen Federal oversight and increase the accountability of researchers conducting clinical trials with human subjects in order to protect the safety of patients participating in all clinical trials. New actions include: strengthening ongoing Federal oversight of informed consent requirements; ensuring that informed consent is maintained throughout the life of a clinical trial; proposing new penalties for violating Federal regulations; expanding training requirements for Federal researchers; improving the ability of IRBs to monitor ongoing clinical trials; and taking initial steps to address issues related to financial conflict of interest. These new actions being announced today, which respond to a Presidential request made late last year, are a critical step to ensure that the public can be confident that the true promise of modern medicine is explored in a way that ensures patient safety.

ADDITIONAL OVERSIGHT OF CLINICAL TRIALS IS NECESSARY TO ENSURE PATIENT SAFETY. Federal investigation and review of clinical trials using human subjects has significantly increased over the past three years. Since June of 1998, the Office of Protection from Research Risks (OPRR) has reviewed records from clinical trials being conducted at more than 140 research institutions and FDA has reviewed records from over 500 of these entities. Although FDA and OPRR have acted to suspend Federally funded research when uncovering evidence that trials were operating out of compliance with current regulations, additional action and more stringent oversight is necessary to ensure patient safety.

- **Oversight responsibilities are often ignored.** The Office of the Inspector General recently testified before Congress that Institutional Review Boards (IRBs) conduct minimal continuing review of approved research as required by law.

- **Patients are often inadequately informed about the risks associated with participation in a clinical trial.** Recent reports indicate that participants may not be adequately informed of the risk associated with participation in a clinical trial. Trial subjects are often not informed of events in other studies, either on animals or on people, that have significant implications for the safety of human studies, and researchers often fail to communication information clearly or correctly to participants.

- **Financial conflicts of interest may interfere with patient safety.** Recent reports indicate that researchers – even in academic settings – are now involved in commercial ventures that create new ethical and conflict-of-interest considerations. For example, investigators leading clinical trials are sometimes major stockholders in the company producing the product being tested.

- **Investigators and IRB members are often not trained to uphold human subject protections.** Although the IRB system depends on researchers' commitment to uphold human-subject protections, a recent OIG report stated that it offers only limited opportunities for continuing education for IRB members and investigators to ensure that they are sensitized to the importance of these protections.

People will participate as much with more confidence in trials.

PRESIDENT CLINTON ANNOUNCES NEW STEPS TO PROTECT PARTICIPANTS IN CLINICAL TRIALS. Today, President Clinton will announce new action to:

Strengthen ongoing Federal oversight of informed consent requirements. This spring, HHS will issue guidance stating that all IRBs are expected to conduct an audit of the patient records and safety protocols to determine that informed consent has been obtained and is being maintained in accordance with Federal regulations. These audits should be conducted as part of the IRBs' annual review of the clinical trials under their supervision. For particularly risky or complex clinical trials, such as _____, IRBs will be expected to take additional measures, such as directly observing the informed consent process.

Ensure that informed consent is maintained throughout the life of a clinical trial. As part of the guidance to be issued this spring, HHS will require investigators to reconfirm informed consent of participants after a significant event, such as the unexpected death or serious illness of a trial participant or a patient in a clinical trial using similar scientific techniques, that may have implications for patient safety. This re-confirmation of informed consent must be obtained in writing and documented in subject records.

New penalties for non-compliance with Federal regulations. The President also announced that this spring, the Administration will send legislation to the Congress providing FDA with new authority to levy civil monetary penalties of up to $xx to researchers out of compliance with Federal guidelines. While FDA can currently issue warning letters or impose regulatory sanctions that halt research until problems are rectified, financial penalties will give the agency additional tools to sanction IRBs, sponsors and researchers who do not follow federal guidelines.

Expand training requirements for Federal researchers. The President will announce that NIH will expand its training requirements by requiring all clinical researchers receiving federal funds to complete standard research bioethics and human subject research training before their research grants are renewed. The HHS Office for Protection from Research Risks (OPRR) will also require institutions, as part of their formal research agreements with OPRR, to certify that their IRB administrators and members have taken this same training by _____.

Improve the ability of IRBs to monitor ongoing clinical trials. The President announced that this _____, HHS will issue guidance requiring smaller-scale early research trials (Phase I and Phase II) to adopt will be required to formally share their analysis of adverse events observed during the trials with the responsible IRB. NIH already requires that the Data Safety Monitoring Boards required for all large-scale (Phase III) trials formally share their analysis of adverse events observed during the trials with the responsible IRB.

Address issues related to financial conflict of interest. The President announced today that this summer, HHS will hold public discussions this summer to find new ways to manage conflicts of interest so that research subjects are neither misled nor coerced, and to further ensure that research results are analyzed and presented objectively. Based on these public forums, NIH and FDA will work together to develop new guidance for the broader medical research community, which will require that any researchers' financial interest in a clinical trial be disclosed both to potential participants and to federal officials.

P.
Reliable

5-10 min
informed consent

Retain at Part 7

Stopping protections
✓ protecting patients
Stopping protections endangers participants
need confidence —
no science gets done
no patients get helped.

Decision → this is the rule.
Seek Reliable.

Mara A. Silver
05/22/2000 05:19:32 PM

Record Type: Record

To: Joshua S. Gottheimer/WHO/EOP@EOP

cc:

Subject: some science quotes i liked...

Science is the knowledge of consequences, and dependence of one fact upon another.
Thomas Hobbes (1588-1679) We need to take steps.

Men love to wonder, and that is the seed of science.
Ralph Waldo Emerson (1803-1882)

Science is the search for truth - it is not a game in which one tries to beat his opponent, to do harm to others.
Linus Pauling (1901-1994) US chemist

True science investigates and brings to human perception such truths and such knowledge as the people of a given time and society consider most important. Art transmits these truths from the region of perception.
Leo Tolstoy (1828-1910)

The beginning of knowledge is the discovery of something we do not understand.
Frank Herbert (1920-1986) science fiction writer

What is a scientist after all? It is a curious man looking through a keyhole, the keyhole of nature, trying to know what's going on.
Jacques Cousteau (1910-1997)

Science is the labor and handicraft of the mind
Francis Bacon (1561-1626)

The product of the scientific imagination is a new vision of relations -- like that of artistic imagination.
Edmund Wilson (1895-1972) US critic, essayist

the kinds of headlines we're likely to find: "Twins Unlocking the Secret of Identity;" "How the Wireless World Will Change Your Life;" "DNA Mapping: Light at the End of the Tunnel."

We are on the brink of discoveries that are astonishing in their complexity and implications for human life in the decades ahead. But they didn't happen overnight. These revolutions have been driven by our American quest for knowledge and discovery -- and the willingness of both the public and private sectors to invest in the necessary research.

More than 200 years ago, before we had even drafted a Constitution, our second President, John Adams, created the American Academy of Arts and Sciences to, in their words, "cultivate every art and science which may tend to advance the interests, honor, dignity and happiness of a free, independent and virtuous people."

That same spirit is what drives us to go to the next generation Internet and to find the 3 billion letters of genetic instructions to the human body. And it must continue to drive us as we educate and inspire Americans to understand these breakthroughs, and continue investing in science and technology research well before we know whether it has any commercial applications.

After all, when Vint Cerf and Robert Kahn found a way for computers to talk to one another, they certainly didn't imagine E-Bay or Amazon.com. (Laughter.)

But, now, even in the face of these great breakthroughs there are many who rightly worry that our science is developing faster than our ability to understand its implications. Because behind each of the headlines we read we find not only great possibilities, but also profound ethical questions that we must answer together.

As we gather more information -- whether it is commercial transactions posted on the Internet or genetic information collected by doctors -- who owns that information? How will we protect our privacy? How will we make sure that knowledge about our genes is used to heal us, not deny us health insurance or jobs? What do justice and equality mean in a digital age?

In one of his short stories, Ray Bradbury's vision of the year 2030 has some similarities to the one I started with tonight: the windows wash themselves, breakfast cooks itself, and a voice machine reminds you of birthdays, anniversaries and bills to be paid, which is especially handy as one gets older. (Laughter.) There's only one big difference: There are no people. The population has been completely wiped out and all that's left are machines.

Standing here with only 80 days left until the year 2000, we have a chance to imagine and create a very different future. One in which the revolutions in information and biology benefit, rather than eclipse, our humanity; where our ethics keep pace with our science; where our investments in science dramatically improve not only how long we live, but how well we live. Because unlike science fiction, how this story ends is in all of our hands.

So I want to thank you for coming this evening. And we have invited two distinguished scientists to help us understand that promises and perils of information tm prestigious universities; and both are visionaries.

First, Dr. Vinton Cerf will give us a quick overview of the growth and future of the Internet. Then Dr. Eric Lander will tell us about the revolution in genetics and where it is leading us.

There's been some progress in passing laws to prevent genetic discrimination in group health insurance, but there's currently no protection for individual health insurance, employment and general privacy. There's much work to be done.

Now, in the long-term, the most unsettling question will be whether we should ever re-engineer the human genome. Well-meaning enthusiasts are sure to begin proposing ways to improve the human genome -- to prevent cancer, slow aging, enhance memory. Concerning this last possibility, I'm sure you've all read that Princeton University, my alma mater, has expanded its educational mission. Biologists there are producing smarter mice by adding genes for certain neurotransmitter receptors.

But the notion that we can improve humans with a quick gene fix is, of course, naive. Human physiology is a delicate balance, and simplistic efforts are likely to do more harm than good. Just imagine the prospect of a product recall for a gene introduced into the human population that we later realized wasn't such a good idea. (Laughter.)

Well, we can delay these prospects for a while by emphasizing our profound ignorance, but that's only a temporary solution. There will come a time when we can do such things safely, and we must discuss what we should do. Should we ever make a human being in someone's image, according to someone's plan? Would crossing this threshold turn human beings into products of manufacture? If we cross this threshold, will we ever return?

And then, finally, the most important issue will be the subtle ways in which genetic knowledge influences our own views of human potential. There is a risk that we may fall into a naive biological determinism, hewing to individuals as specified by their genes, limited by their genes.

This would be a colossal mistake. History is littered with supposedly scientific pronouncements about the limits of women, of African Americans, of Southern Europeans, of Asians, of Jews. Science has done a singularly poor job when it has sought to define limits on the human spirit, and on human potential.

Now, we need more nuanced ways to understand the role of genes and the range of human diversity. I'm particularly fond of this poster, from an exhibit at the Musee du Langue in Paris. It reads: "Tout parent, tout different." It can be translated two ways: all the same, all different; or all related, all different.

And this is, of course, a central theme -- perhaps the central theme in the American conversation. When Thomas Jefferson wrote the Declaration of Independence -- "We hold these truths to be self-evident that all men are created equal," -- the words, in fact, had a rather narrow meaning. But they have grown with the country, reinterpreted through the centuries by Elizabeth Katie Stanton at Seneca Falls, by Abraham Lincoln at Gettysburg, by Martin Luther King on the steps of the Lincoln Memorial. That fundamental credo that people must be judged for how they act, not for accidents at birth, will have even greater importance as we develop thousands of new ways in which we could, in principle, subdivide a people.

What a remarkable time. Genomics is opening breathtaking horizons in scientific understanding and medical progress. At the same time, it is presenting us with complex social choices. I know of no scientific field in which it is more exciting or more important for us all to imagine the future. Thank you very much. (Applause.)

Newsweek January 1, 2000,

January 1, 2000, U.S. Edition

SECTION: SOCIETY; Pg. 74

LENGTH: 1452 words

HEADLINE: A Cure That May Cost Us Ourselves

BYLINE: By Dr. W. French Anderson; Anderson is professor of biochemistry and pediatrics at the USC Keck School of Medicine.

HIGHLIGHT:
SOCIETY: One of the pioneers of human genetic engineering predicts that within 30 years, there will be a gene-based therapy for most diseases. But he fears the profound dangers of his own work .

BODY:
A revolution is sweeping medicine--only the fourth one since Hippocrates argued, some 2,400 years ago, that the workings of the body can be explained by the laws of nature rather than the supernatural. The first revolution occurred soon after British surgeon John Snow discovered, in 1854, that cholera is spread by contaminated water: this led to sanitation systems that protected people from the devastating infections that had habitually plagued mankind. The second revolution, surgery with anesthesia, came at about the same time, allowing doctors to readily fix ailments such as appendicitis and bowel obstruction. The third revolution was the introduction of vaccines and antibiotics: many infectious diseases could finally be prevented or cured, But aside from remedying infectious diseases and some surgical problems, we physicians do not actually cure anything. Our medicines just help the body heal itself. Our treatments relieve symptoms but do not correct the underlying problems. Human genetic engineering--the fourth medical revolution--will profoundly change the practice of medicine over the next 30 to 40 years. But more than that, its effects will be felt far beyond medicine. It will influence every aspect of our culture. Used carefully, it will increase health and human happiness. But if used unwisely, the genetic engineering of human beings could endanger everything we value--including who and what we are.

Human genetic engineering, also known as **gene therapy,** is based on the premise that our genes are the defense and healing system of our body. It is our genes that protect our body from the assaults of nature; it is our genes that repair the damage caused by disease and restore us to health; it is our genes that, when they function abnormally, bring on not only such traditionally understood genetic diseases as sickle cell anemia and Huntington's disease, but also contribute to cancer, heart disease, Alzheimer's and mental illness. If we want to cure a disease, therefore, we must do it at the level of the genes.

There are two primary ways that genes can be used to treat disease. The first is **gene therapy,** in which one or more genes are injected into the patient to replace those that are absent or not working properly. This approach has been used to treat rare enzyme disorders, including one known as ADA deficiency, and clinical trials have employed **gene therapy** against a broad range of disorders: heart

disease, many forms of cancer, arthritis, AIDS, hemophilia, cystic fibrosis and muscular dystrophy. The second way to exploit genes to treat disease is known as small-molecule therapy. In this approach, a small molecule (that is, a drug) is given to the patient to modify the function of one or more genes in the body. Pharmaceutical and biotech companies are investing heavily in both of these approaches.

As the Human Genome Project identifies all of the 70,000 to 130,000 human genes and, in time, teaches us what they do, we will rapidly develop the ability to screen for defects or weaknesses in all of our genes. By weaknesses I mean genes that do not function optimally for the environment in which the individual lives, which may be unusually stressful because of diet, toxins, radiation or some other factor and therefore will result in the patient's developing a disease. Once a defective or poorly functioning gene is discovered, we will be able to give the individual a more effective gene to replace the weak one. Or if the gene is making a normal product but just too much or too little of it, a small molecule (drug) can be given to regulate production. Thirty years from now, essentially every disease will have gene-based therapy as a treatment option.

Gene therapy is still too inefficient to be helpful in most cases. But progress is rapid, and the first treatments are expected to be available to the public over the next five years. The greatest success so far has been in stimulating new blood-vessel growth in the heart to treat heart failure or in the limbs to correct faulty circulation. Treatment of a number of genetic diseases, such as hemophilia, appears promising as well. There has also been significant progress in the use of **gene therapy** to deliver vaccines for protection against AIDS and several types of cancer. Most physicians expect that in the first 10 years of the new millennium we will see an explosion of **gene-therapy** treatments for many maladies that have been a scourge to human health. Genetic engineering should allow people to lead healthier, happier lives and add decades to our life span.

But there is also a more worrisome side to this story. For one thing, this technology is not risk-free. Although toxicity has been extremely low during 400 or so clinical trials in the past nine years, the recent unexpected and unexplained death of a **gene-therapy** patient in a University of Pennsylvania clinical trial underscores how little we still understand about human bodies and how our bodies respond to potent treatments.

There is also a broader danger. Unlike small-molecule therapy--which can be considered a smart drug strategy--**gene therapy** alters an individual's genetic blueprint. Once we have the ability to give a patient any gene we want in order to treat a disease, then we will also have the ability to give a human being genes for any purpose besides therapy. The downside of this powerful technology? Eugenics could be practiced on a scale far larger than any selective breeding policy could accomplish. Just a few weeks ago, a gene was discovered that seems to make mice more intelligent. Human genes have been identified that appear to influence behavior: an affinity for risk-taking, intelligence and even sexual preference. We've known for years which genes influence body size and muscle mass. The temptation to try to use genes such as these to improve ourselves is very strong--maybe even irresistible.

Already the first indications of potential abuse are surfacing. For example, one company is developing a treatment for the hair loss that occurs as a result of chemotherapy for cancer. It has already developed a salve that can transfer a functional gene into the hair follicles in human skin. Now the company is searching for a growth-factor gene that would stimulate hair growth. No one would object to preventing the psychologically traumatic side effect of hair loss caused by cancer therapy. But the real motivation is to sell the product to the millions of healthy men who are naturally going bald. Is this bad? Not necessarily, but it does start us down a slippery slope of using human genetic engineering for cosmetic purposes. Where does one draw the line? If hair growth, then hair color? If hair color, then skin color? If skin color, then other racial features? Where would the re-engineering of the human body end?

Society faces a real danger. In the name of minor improvements that we see as conveniences, we might start using human genetic engineering to attempt to change ourselves and then our children. Engineering the human germ line would result in permanent changes in the gene pool. We as a society have yet to end discrimination, including its most virulent expression, ethnic cleansing. What

would happen if we add intentional genetic enhancement to the mix? In the 1997 movie GATTACA, only the genetically enhanced can hold good jobs. Love children, who were produced by natural means and have a natural set of genes with all their weaknesses, are relegated to the bottom of the social and economic ladder.

Our only protection is to accept clear stopping points. And the only way to achieve those is to make sure that society is informed and can recognize the dangers and prevent misuses before it is too late. If such crucial decisions are left to the marketplace, might we ultimately engineer ourselves to the point where we are no longer human beings? We cannot dictate to the people of 100 years from now what they should do. They will care as little about our opinion as we care about the mandates of our 19th-century forebears. They might want to engineer their genes as routinely as we take vitamins. But what they do is not our responsibility. Our duty is to go into the era of human genetic engineering as respectfully as possible. That means that we should not use human genetic engineering for any other purpose than the treatment of serious disease, no matter how tempting it might be.

Far horizons: Our 2000 baby will live longer than his mother and father--the average boy will live to be 73 years old, and the average girl will reach 82.
Anderson is professor of biochemistry and pediatrics at the USC Keck School of Medicine.

GRAPHIC: PHOTO: DARK SIDE: What if we altered the human gene pool permanently?

LANGUAGE: ENGLISH

LOAD-DATE: December 29, 1999

Lowell A. Weiss
05/22/2000 02:46:35 PM

Record Type: Record

To: Joshua S. Gottheimer/WHO/EOP@EOP

cc:
Subject:

Draft 2/8/00 11:30am
Lowell Weiss

PRESIDENT WILLIAM J. CLINTON
REMARKS ON GENETIC DISCRIMINATION
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
WASHINGTON, DC
February 8, 2000

Acknowledge: Dr. Shirley Malcolm, Director for Education and Human Resources of the AAAS ["Triple A S"]; Dr. Richard Nicholson, Executive Officer of the AAAS; Dr. Francis Collins, Sec. Shalala, OPM Dir. Janice Lachance; EEOC Chair Ida Castro; Rep. Louise Slaughter; Rep. Greg Ganske; Rep. Fred Upton; Dr. Neal Lane.

We are fortunate to be alive at this moment in history. Not only are we in the midst of the longest economic expansion ever; thanks to the brilliant, persistent work of scientists and engineers all over the world, we are also in the midst of a remarkable new scientific revolution. The restless quest for knowledge, a quest that has defined the AAAS for more than 150 years, is accelerating at a stunning pace - propelling our economy, improving our environment, and enhancing in so many ways the quality of our lives.

The reason we are here today is to recognize that the extraordinary advances of science and technology impose enormous responsibilities on our society. It is up to all of us to ensure that this new age of discovery reflects our most enduring values.

First and foremost, we must protect our citizens' privacy - the bulwark of personal liberty and the safeguard of individual creativity. More than 100 years ago, Justice Brandeis recognized that technological advances would require us to be ever-vigilant in protecting Americans' most valued right - the fundamental right to privacy. New conditions, he said, would often require us "to define anew the exact nature and extent of such protection."

In this, as in so many other ways, Justice Brandeis was prophetic. Today, powerful waves of technological change threaten to erode our society's sacred walls of privacy in ways we could not even have envisioned a generation ago. This Administration is working hard to fortify

those walls. Last year, we proposed rules to protect the sanctity of medical records. This year, we will finalize those rules. We have also taken the first steps to protect our citizens' financial records. I will soon send legislation to the Congress to complete the job. And today, this Administration will move forward in another area where our privacy laws have not yet evolved to take account of new realities: genetic privacy.

I believe there is no more exciting frontier of modern science than genome research. As you have just heard from Dr. Collins, the completion of the Human Genome Project will lead to dramatic advances in our ability to detect, treat, and prevent human disease. Genome science will transform medical care more profoundly than anything since the discovery of antibiotics and the polio vaccine. But as we unlock the secrets of the human genome, we must work simultaneously to ensure that new discoveries never pry open the protective doors of privacy.

As Dr. Collins said, the fear of misuse of private genetic information is widespread. Studies have shown repeatedly that Americans are worried that their genetic information will not be kept secret and that this information will be used against them. As a result, they are often reluctant to take advantage of new breakthroughs in genetic testing. For example, a Pennsylvania study showed that nearly a third of women at high risk for inherited forms of breast cancer refused to be tested to determine whether they carry either of the two known breast cancer genes - because they feared discrimination based on the result.

This is wrong. We must never allow advances in genetics to become the basis for discrimination against any individual or group. And we must never allow these discoveries to change the basic belief upon which our ethics, our government, and our society are founded. All of us are created equal, entitled to equal treatment under the law.

The Executive Order I will sign in a few minutes - the first Executive Order of the 21st century - will help address this great 21st century challenge. This order prohibits Federal government agencies from using genetic testing in any employment decision. It prevents Federal employers from requesting or requiring that employees undergo genetic tests of any kind. And it strictly forbids employers from using genetic information to classify employees in such a way that deprives them of advancement opportunities - such as promotions or overseas posts. By signing this Executive Order, my goal is to set an example and pose a challenge for every employer in America - because I believe no employer should ever review your genetic records along with your resume.

But we also need Congress to act this year. In 1996, the Congress passed, and I signed, the Kassebaum-Kennedy health insurance portability law, which made it illegal for group health insurers to deny coverage to any individual based on genetic information. That was an important first step. But now we must go further.

I call on Congress to pass the Genetic Nondiscrimination in Health Insurance and Employment Act, introduced by Sen. Daschle and Rep. Slaughter. This legislation would extend the employment protections contained in my Executive Order to all private-sector employees. And it would ensure that people in all health plans - not just group plans - would have the full

confidence that the fruits of genetic research will be used solely to improve their care and never to deny them care.

There is something else we must do right away: We must make absolutely sure that we do not allow the race for genetic cures to undermine vital patient protections. Like many Americans, I have been extremely concerned about reports that some families involved in trials of experimental gene therapies have not been fully informed of the risks and that some scientists have failed to report serious side effects from these trials. I support the recent action by FDA and NIH to enforce reporting and patient-safety requirements. And today, I am asking Sec. Shalala to instruct FDA and NIH to accelerate their review of gene therapy guidelines and regulations. I want to know how we can better ensure that information about these trials is shared with the public. And I want to know whether we need to strengthen requirements on informed consent. If we don't have full confidence in these trials, people won't participate and the true promise of genetic medicine will be put on hold.

Every one of us must recognize that it would be quite easy for our remarkable progress in genomic research to be undermined by concerns over the privacy of genetic data and the safety of genetic therapies. We must do whatever it takes to address these legitimate concerns.

For if we do, the possibilities are endless. Those of you who are my age or older will remember what it was like when the threat of polio loomed over every cradle – and then, with one brilliant innovation, Dr. Salk lifted that horrible fear. Well, today, the brilliant innovations of Dr. Collins and thousands of his fellow researchers raise the hope that we will soon be able to go beyond reading to actually repairing the very blueprint of life. This is a true miracle. And that is why we must use foresight, responsibility, and care to ensure that cutting-edge research is never a double-edged sword.

And now I'd like to invite OPM Dir. Janice Lachance, EEOC Chair Ida Castro, and Sec. Donna Shalala to join me as I sign this Executive Order.

# # #

Lowell A. Weiss
05/22/2000 03:22:15 PM

Record Type: Record

To: Joshua S. Gottheimer/WHO/EOP@EOP

cc:
Subject:

4

Draft 1/20/00 7:00pm
Weiss/ Kalil

PRESIDENT WILLIAM J. CLINTON
REMARKS ON SCIENCE AND TECHNOLOGY INVESTMENTS
CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA, CA
January 21, 2000

Acknowledge: introducer Gordon Moore; Caltech President David Baltimore and the whole Caltech and JPL community; Sec. Richardson *[who has done a great job of making sure our National Laboratories are true engines of innovation in fields from computational science to environmental technology]*; NSF Dir. Rita Colwell; Neal Lane. I would also like to thank someone who is not here today - the Vice President, who has played an enormous role for many years in keeping America the world's leader in science and technology, and who's been campaigning all over the country with a Palm VII on his hip. In fact, he loves science and technology so much, he's not even angry that Caltech beat out his alma mater for the top spot in the *U.S. News* rankings this year.

You know, I hate to admit it, but lately I've been spending a lot of time getting in touch with my "inner nerd." I think it started with a wonderful lecture at the White House with Vint Cerf, one of the founders of the Internet, and Eric Lander, who has helped develop many of the tools of modern genome research. It accelerated over the holidays, when I started buying gifts over the Internet and figured out what all the fuss was about. I mean no one told me that with just a click of a mouse you can get an authentic Arkansas chopped pork sandwich delivered right to your door.

Three weeks ago, TIME Magazine crowned as the "Person of the Century" Albert Einstein - who, of course, spent a great deal of time here at Caltech in the early 1930s. The fact that he won this honor - rising above such enormously influential figures as Franklin Roosevelt and Mohandas Gandhi - is a powerful testament to the quantum leaps in knowledge Einstein achieved for all humanity. It is also a clear recognition that the 20th century will be most remembered, in

the words of TIME's managing editor, "for its earthshaking advances in science and technology."

But, of course, the reason why so many of you are here is because there are so many more great scientific questions just waiting to be answered. How does the three-pound mass of tissue up here [*the brain*] produce the phenomenon of consciousness? How do we translate insights from neuroscience into more productive learning environments for our children? Why do we age? When you look at pictures of me from my first year in office, it's clear that we do age - but is aging pre-programmed, or is it just wear and tear? Are we alone in the universe? What causes gamma-ray bursts? What makes up the "missing mass" of the universe? And the biggest question of all: How is it possible that you can add $3 billion in market capitalization just by adding "dot com" at the end of a name?

I am confident that you will help us find the answers to the serious questions I've just posed. For it was this brilliant Caltech community that first located genes on chromosomes and unlocked the secrets of chemical bonds and quarks. You were the propulsive force behind jet flight and built America's first satellite. You made it possible for us to manufacture microchips of ever increasing complexity and gave us our first guided tour on the surface of Mars. And with your new Gravitational Wave Observatory, you will open an entirely new window on the mysteries of the universe, observing the "propagating ripples" in space that Einstein predicted 84 years ago.

Today, I want to thank you for all that you are doing to advance the march of human knowledge. I have also come here to announce all the ways we intend to accelerate that march - by greatly increasing our national funding for science and technology.

The budget I will submit to Congress next month will include a $2.8 billion increase in our 21st Century Research Fund. This will support a $1 billion increase in biomedical research at the National Institutes of Health ... double the largest dollar increase for the National Science Foundation in its 50 year history ... and will provide major funding increases in areas such as information technology, space exploration, and the development of cleaner sources of energy.

This budget makes research at our nation's universities a top priority - with an increase in funding of more than $1 billion. University-based research provides the kind of fundamental insights that are the most important building blocks of any new technology or treatment. It also helps produce the next generation of scientists, engineers, and entrepreneurs. We're going to give university-based research a major lift.

My budget supports increases not only in biomedical research, but also in all scientific and engineering disciplines. As you know, advances in one field are often dependent on breakthroughs in other disciplines. For example, advances in computer science are helping us to develop drugs more rapidly, and to move from sequencing the human genome to better understanding the function of individual genes.

My budget supports a major new National Nanotechnology Initiative, worth $500 million.

Caltech is no stranger to the idea of nanotechnology - the ability to manipulate matter at the atomic and molecular level. Over 40 years ago, Caltech's own Richard Feynman [FINE-man] asked, "What would happen if we could arrange the atoms one by one the way we want them?" [*One answer is that we can make cool images of the Western Hemisphere in gold atoms, as you can see in greatly magnified form behind me. With our national investment in nanotechnology, we believe we can find more enduring uses.*]

Imagine the possibilities: materials with ten times the strength of steel and only a small fraction of the weight ... shrinking all the information housed at the Library of Congress into a device the size of a sugar cube ... detecting cancerous tumors when they are only a few cells in size. Some of our research goals may take 20 or more years to achieve, but that is precisely why there is an important role for the federal government.

As I announced yesterday, my budget also includes an historic initiative to make higher education more affordable. We're proposing to make college tuition tax-deductible, for the first time ever. We also want to significantly increase the value of Pell Grants and help minority students earn degrees in fields like science and engineering in which they are greatly underrepresented. Thanks to scholarships and other aid, I became the first person in my family to go to college. I don't want a single student in America to be denied the chance I was given.

In addition to announcing these new ways we are going to catalyze discovery and make college more affordable, I have one other major mission here today. I want to take a step back, to acknowledge that we have not done a good enough job of helping all Americans understand why the enormous investments we are making in science and technology are so important. For far too many of our citizens, science is something done by men and women in white lab coats, behind closed doors - something that leads, somehow, to things like Dolly the sheep and satellite TV. It is our responsibility to help open the world of science to our citizens - to help them understand the great questions that science is seeking to answer, to help them see how those answers will directly affect their lives.

So the first thing I want to underscore, in the clearest possible way, is that science and technology have become the engine of our economic growth. Consider the impact of information technology. Because of our early investments in developing the Internet, America now leads the world in information technology - an industry that accounts for one third of our economic growth and that generates jobs that pay almost 80 percent more than the private sector average wage. In the words of Alan Greenspan, "It is information technology that defines this special period.... Information innovation lies at the root of productivity and economic growth."

To ensure that America continues to lead in the Information Age, my budget proposes a 36% increase in information technology research. With this infusion of funds, researchers will be able to tackle a wide range of important challenges: How do we find precisely the piece of information we are looking for in a vast ocean of raw data? How do we design computers that are usable by everyone, including people with disabilities? Can the Internet grow to accommodate not only millions of computers but billions of other devices? I read the other day that manufacturers will soon introduce a refrigerator that can scan the bar codes of empty

packages and expired goods and then order new groceries for you over the Internet. [*Now – if those engineers could just figure out a way to get rid of that moldy salsa that's been hiding in the fridge for a year and a half, without your having to touch it.*]

Second, I want all Americans to see that investments in science and technology are allowing us to lead longer, healthier lives. In the last century alone, the life expectancy for the average American has increased from 47 to 77 – thanks to discoveries such as penicillin and the development of vaccines for many childhood diseases.

Today, we are on the cusp of even greater advances. Later this year, researchers expect to finish the first complete sequence of the human genome – all 3 billion letters and 80,000 genes that make up our DNA code. Since so many diseases have a genetic component, the completion of this project will lead to a revolution in our ability to detect, treat, and prevent many diseases. For example, patients with some forms of leukemia and breast cancer may soon receive sophisticated new drugs that elegantly and precisely target cancer cells, with little or no risk to healthy cells. Our new trove of genomic data may even allow us to identify and cure most genetic diseases before a child is even born.

Research at the intersection between biomedical research and engineering will also lead to amazing breakthroughs. Scientists are already working on an artificial retina to treat certain kinds of blindness, and methods of directly stimulating the spinal cord to allow people who are paralyzed to walk. Someday, we may be able to grow organs from a single adult cell – ending forever the agonizing wait for a heart, kidney, or liver transplant.

Third, advances in science and technology are helping us to preserve our environment in ways that produce more widespread, more stable, more sustainable economic growth. Here in California, we helped build a moderate-income housing community with glass in the windows that keeps out four or five times as much heat and cold as ordinary windows do. With these and other technologies, we thought we'd be able to save homeowners 40% off their energy bills. It turns out, they're saving 65%.

The Detroit Auto show is showcasing cars we've helped the automakers develop which get 70 to 80 miles a gallon. Next on the horizon are even more efficient cars powered by fuel cells that emit pure water and nothing else. Before you know it, we will crack the chemical barriers to truly efficient production of biomass fuels, which generate eight or nine times more energy than we invest in producing them. That would be the equivalent of traveling hundreds of miles on a gallon of gas. My budget will help spur all of these energy-saving technologies and alternative fuel sources to cut down on greenhouse gas emissions here and around the world. We will finally break the hold of the long-outdated idea that a nation can only grow rich and stay rich if it despoils the environment.

But for all of the extraordinary promise of science and technology, we must never forget the weighty responsibilities that promise imposes on us. The same genetic revolution that can offer new hope for millions of Americans could also be used to deny people health insurance or clone a human being. Information technology, which helps educate our children and provide

telemedicine for rural communities, can also be used to create disturbingly detailed profiles of every move our citizens make online.

The federal government has a large role to play in meeting these challenges. That's why, for example, we've put forward strict rules and penalties to limit the use and release of medical records. That's why we worked with Congress to ban the cloning of human beings, while preserving our ability to use the morally and medically acceptable applications of cloning technology. And that's why we are working with the Internet industry to ensure that consumers will have control over how their personal information is used.

But frankly, it's up to all of us to make sure that we use the new powers that science and technology gives us in a responsible way. Just because we can do something doesn't mean that we should do it. It is incumbent upon us, both scientists and public servants, to ensure that science always serves humanity, never the other way around. For as Albert Einstein said on this very campus nearly 70 years ago: "Never forget this in the midst of your diagrams and equations.... Concern for man himself and his fate must always form the chief interest of all technical endeavors."

Today, as the first light falls on the new millennium, we see illuminated before us an era of unparalleled promise - fueled by curiosity, powered by technology, driven by science. Our restless quest to understand the unknown, a quest that has defined us as Americans since the first explorers set foot on this continent, will quicken. More than any other time in human history, the 21st century will be the century of discovery and science. Thank you for all that you have done to bring us to this moment. Thank you for helping to guide and propel us all into the future.

# # #

PRESIDENT WILLIAM J. CLINTON

MORGAN STATE UNIVERSITY

COMMENCEMENT BREAKFAST

MAY 18, 1997

THE PRESIDENT HAS SEEN
5-18-97

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Acknowledgments: Gov. Parris Glendening; Sen. Paul Sarbanes; Rep.Elijah Cummings; Rep. Ben Cardin; State Treasurer Richard Dixon; Speaker of the House Casper "Cas" Taylor; Pres. of the Senate ~~Thomas~~ Miller; Pres. of the Univ. Dr. Earl Richardson; Chairman of the Board of Reagents Judge Harry Cole. I'd like to congratulate Mayor Kurt Schmoke on Baltimore's bicentennial celebration.

I am honored to deliver my first commencement at an Historically Black University, here at Morgan State. Morgan is a national treasure; a university rich with tradition, providing comprehensive public education to thousands of students each year while awarding more degrees to African Americans than any other campus in the state.

Morgan and the nation's other Historically Black Colleges and Universities are essential to our goal of making sure the workforce of the 21st Century looks like America. As I will mention later in my speech, a big part of that is making sure African Americans are full participants in science and technology in the future.

I applaud the extraordinary progress you have made in preparing young people for careers in the field of science and technology.

Morgan State shares many of the objectives of my administration.

1st Comm at HBCU at Morg St, Math tea, Sci w/ tablet, compro, more degrees to AA than 5 - any other in Md
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THE PRESIDENT HAS SEE
5-30-97

I'm proud to work hand in hand with you on our America Reads Project, and I thank you for enabling your students to become involved in citizen service, through programs like the Baltimore Urban Systemic Initiative. Morgans' federally funded National Transportation Center educates minorities for jobs in transportation.

I commend the university for its dedication to the city and the citizens of Baltimore, and for instilling in its students a lifelong commitment of citizen service.

Thank you for inviting me to speak to your university.

34 Weekly Comp. Pres. Doc. 1050

Public Papers of the Presidents

Public Papers of the Presidents

June 5, 1998

CITE: 34 Weekly Comp. Pres. Doc. 1050

LENGTH: 3422 words

HEADLINE: Commencement Address at the Massachusetts **Institute of Technology** in Cambridge, Massachusetts

BODY:

Thank you, Dr. Vest. I think you're the real thing. [*Laughter*] Chairman d'Arbeloff, Dr. Gray, members of the Corporation, the faculty, especially to the members of the Class of 1998 and your families, the Classes of 1948 and 1973, Mayor Duehay, members of the City Council. I thank the Brass Ensemble for the wonderful music before. Let me say I am profoundly honored to be here on the same platform with Dr. David Ho, and grateful for the work he has done for humanity.

When we met a few moments ago, in President Vest's office, with a number of the students and other officials of the university, I said you had a good representation of speakers today, the scientists and the scientifically challenged. [*Laughter*]

But my administration has been able to carry on in no small measure because of contributions from MIT. Sixteen MIT alumni and faculty members have served in important positions in this administration, including at least two who are here today, the former Secretary of the Air Force, Sheila Widnall, and the Deputy Secretary of Energy Ernie Moniz. Four of your faculty members and your President have done important work for us. I thank them all.

And I come here today with good news and bad news for the graduates. The good news is that this morning we had our latest economic report: unemployment is 4.3 percent; there have been 16 million new jobs in the last 5 years; there are numerous job openings that pay well. The bad news is that you now have no excuse to your parents if you don't go to work. [*Laughter*]

MIT is admired around the world as a crucible of creative thought, a force for progress, a place where dreams of generations become reality. The remarkable discoveries and inventions of the MIT community have transformed America. Early in your history, MIT was known for advances in geology and mining. By mid-century, MIT pioneered X rays and radar. Today, it's atomic lasers, artificial intelligence, biotechnology. MIT has done much to make this the American Century. And MIT will do more to make America and the world a better place in the 21st century, as we continue our astonishing journey through the information revolution, a revolution that began not as our own did here in Massachusetts, with a single shot heard around the world but instead was sparked by many catalysts, in labs and libraries, startups and blue chips, homes and even dorm rooms across America and around the world.

I come today not to talk about the new marvels of science and engineering. You know far more about them than I do. Instead I come to MIT, an epicenter of the seismic shifts in our economy and society,

to talk about how we can and must apply enduring American values to this revolutionary time, about the responsibilities we all have as citizens to include every American in the promise of this new age.

From the start, our Nation's greatest mission has been the fulfillment of our Founders' vision: opportunity for all, best secured by free people, working together toward better tomorrows and what they called "a more perfect Union."

Americans believe the spark of possibility burns deep within every child, that ordinary people can do extraordinary things. Our history can do understood as a constant striving on foreign fields and factory floors, in town halls and the corridors of Congress, to widen that circle of opportunity, to deepen the meaning of our freedom, to perfect our Union, to make real the promise of America. Every previous generation has been called upon to meet this challenge. And as we approach a new century and a new millennium, your generation must answer the call.

You enter the world of your tomorrows at a remarkable moment for America. Our country has the lowest crime rates in 25 years, the smallest welfare rolls in 27 years, the lowest unemployment in 28 years, the lowest inflation in 32 years, the smallest National Government in 35 years, and the highest rate of homeownership in our history. Such a remarkable time, a period of renewal, comes along all too rarely in life, as you will see. It gives us both the opportunity and the profound responsibility to address the larger, longer-term challenges to your future.

This spring I am speaking to graduates around the country about three of those challenges. Last month I went to the Naval Academy to talk about the new security challenges of the 21 century, terrorism, organized crime and drug trafficking, global climate change, the spread of weapons of mass destruction. New week at Portland State in Oregon I will discuss how our Nation's third great wave of immigration can either strengthen and unite America or weaken and divide it. And I thank Dr. Ho for what he said about immigration and our immigrants.

Today, I ask you to focus on the challenges of the information age. The dimensions of the information revolution and its limitless possibilities are widely accepted and generally understood, even by lay people. But to make the most of it we must also acknowledge that there are challenges, and we must make important choices. We can extend opportunity to all Americans or leave many behind. We can erase lines of inequity or etch them indelibly. We can accelerate the most powerful engine of growth and prosperity the world has ever known, or allow the engine to stall.

History has taught us that choices cannot be deferred; they are made by action or inaction. There is no such thing as virtual opportunity. We cannot point and click our way to a better future. If we are to fulfill the complete promise of this new age, we must do more.

Already the information age is transforming the way we work. The high-tech industry employs more people today than the auto industry did at its height in the 1950's. Auto and steel industries in turn have been revived by new technologies. Among those making the most use of technology R&D are traditional American enterprises such as construction, transportation, and retail stores.

It's transforming the way we live. The typical American home now has much more -- as much computing power as all of MIT did in the year most of the seniors here were born. It is transforming the way we communicate. On any business day, more than 30 times as many messages are delivered by e-mail as by the Postal Service. And today, this ceremony is being carried live on the Internet so that people all over the world can join in.

It is transforming the way we learn. With the DVD technology available today, we can store more reference material in a 3-inch stack of disks than in all the stacks of Hayden Library. It is transforming the way our society works, giving millions of Americans the opportunity to join in the enterprise of building our nation as they fulfill their dreams.

The tools we develop today are bringing down barriers of race and gender, of income and age. The disabled are opening long closed doors of school, work, and human possibility. Small businesses are competing in worldwide markets once reserved only for powerful corporations. Before too long, our

children will be able to stretch a hand across a keyboard and reach every book ever written, every painting every painted, every symphony ever controlled.

For the very first time in our history, it is now possible for a child in the most isolated inner-city neighborhood or rural community to have access to the same world of knowledge at the same instant as the child in the most affluent suburb. Imagine the revolutionary democratizing potential this can bring. Imagine the enormous benefits to our economy, our society, if not just a fraction, but all young people can master this set of 21st century skills.

Just a few miles of here is the working class community of East Somerville. It has sometimes struggled to meet the needs of population that is growing more diverse by the day. But at East Somerville Community School, well-trained technology teachers with equipment and support from Time-Warner Cable have begun to give first to eigth-graders an early and enormous boost in life. First graders are producing small books on computers. Sixth graders are producing documentaries. The technology has so motivated them that almost all the sixth graders showed up at school to work on their computer projects over winter break.

That small miracle can be replicated in every school, rich and poor, across America. Yet, today, affluent schools are almost 3 times as likely to have Internet access in the classroom; white students more than twice as likely as black students to have computers in their homes.

We know from hard experience that unequal education hardens into unequal prospects. We know the information age will accelerate this trend. The three fastest growing careers in America are all in computer related fields, offering far more than average pay. Happily, the digital divide has begun to narrow, but it will not disappear of its own accord. History teaches us that even as new technologies create growth and new opportunity, they can heighten economic inequalities and sharpen social divisions. That is, after all, exactly what happened with the mechanization of agriculture and in the industrial revolution.

As we move into the information age we have it within our power to avoid these developments. We can reap the growth that comes from revolutionary technologies and use them to eliminate, not to widen, the disparities that exist. But until every child has a computer in the classroom and a teacher well-trained to help, until every student has the skills to tap the enormous resources of the Internet, until every high-tech company can find skilled workers to fill its high-wage jobs, America will miss the full promise of the information age.

We cannot allow this age of opportunity to be remembered also for the opportunities that were missed. Every day, we wake up and know that we have a challenge; now we must decide how to meet it. Let me suggest three things.

First, we must help you to ensure that America continues to lead the revolution in science and technology. Growth is a pre-requisite for opportunity, and scientific research is a basic prerequisite for growth. Just yesterday in Japan, physicists announced a discovery that tiny neutrinos have mass. Now, that may not mean much to most Americans, but it may change our most fundamental theories -- from the nature of the smallest subatomic particles to how the universe itself works, and indeed how it expands.

This discovery was made, in Japan, yes, but it had the support of the investment of the U.S. Department of Energy. This discovery calls into question the decision made in Washington a couple of years ago to disband the super-conducting supercollider, and it reaffirms the importance of the work now being done at the Fermi National Acceleration Facility in Illinois.

The larger issue is that these kinds of findings have implications that are not limited to the laboratory. They affect the whole of society, not only our economy but our very view of life our understanding of our relations with others, and our place in time.

In just the past 4 years, information technology has been responsible for more than a third of our economic expansion. Without Government-funded research, computers, the Internet,

communications satellites wouldn't have gotten started. When I became President, the Internet was the province of physicists, funded by a Government research project. There were only 50 sites in the world. Now, as all of you know, we are adding pages to the World Wide Web at the rate of over 100,000 an hour, and 100 million new users will come on this year. It all started with research, and we must do more.

In the budget I submit to Congress for the year 2000, I will call for significant increases in computing and communications research. I have directed Dr. Neal Lane, my new Adviser for Science and Technology, to work with our Nation's research community to prepare a detailed plan for my review.

Over the past 50 years our commitment to science has strengthen this country in countless ways. Scientific research has created vast new industries, millions of jobs, allowed America to produce the world's most bountiful food supplies and remarkable tools for fighting disease. Think of what today's investments will yield. Dr. Ho will unravel the agonizing riddles of AIDS. There will be a cure for cancer; a flourishing economy that will produce much less pollution and move back from the brink of potentially devastating global warming. High-speed wireless networks that bring distance learning, tele-medicine and economic opportunity to every rural community in America.

That is why, even as we balanced our budget for the first time in 29 years, we have increased our investments in science. This year I asked Congress for the largest increase in research funding in history, not just for a year but sustained over 5 years. It is a core commitment that must be part of how every American, regardless of political party or personal endeavor, thinks about our Nation and its mission. [*Applause*] Thank you -- those are the people who received the research grants over there. [*Laughter*]

I want you to know that we are also working to address the threat to our prosperity posed by the year 2000 bug. I tried and tried to find out what the class hack project was for the Class of '98, and I failed. But I did learn that in the year 2000, the graduating class is proposing to roll all of our computers back by 100 years. And I am determined to thwart you. I will do my best. [*Laughter*]

The second thing we have to do is to make sure that the opportunities of the information age belong to all our children. Every young American must have access to these technologies. Two years ago in my State of the Union Address, I challenged our Nation to connect every classroom to the Internet by the year 2000. Thanks to unprecedented cooperation at national, State, and local levels, an outpouring of support from active citizens, and the decreasing costs of computers, we're on track to meet this goal.

Four years ago when you came to MIT, barely 3 percent of America's classrooms were connected. By this time next year, we will have connected well over half our classrooms including 100 percent of the class-rooms in the Nation's 50 largest urban school districts.

But it is not enough to connect the class-rooms. The services have to be accessed. You may have heard recently about something called the e-rate. It's the most crucial initiative we've launched to help connect our schools, our libraries, and our rural health centers to the Internet. Now some businesses have called on Congress to repeal the initiative. They say our Nation cannot afford to provide discounts to these institutions of learning and health by raising a billion dollars or so a year from service charges on telecommunications companies, something that was agreed to in the Telecommunications Act of 1996 that passed with overwhelming bipartisan majorities in both Houses.

I say we cannot afford not to have an e-rate. Thousands of poor schools and libraries and rural health centers are in desperate need of discounts. If we really believe that we all belong in the information age, then, at this sunlit moment of prosperity, we can't leave anyone behind in the dark.

Every one of you who understands this I urge to support the e-rate. Every one of you here who came from a poor inner-city neighborhood, who came from a small rural school district, who came perhaps from another country where this was just a distant dream, you know that there are poor children now who may never have a chance to go to MIT unless someone reaches out and gives them this kind of

opportunity. Every child in America deserves the chance to participate in the information revolution.

The third thing we have to do is to make sure that all the computers and the connections in the world don't go to waste because our children actually have 21st century skills. For 5 years now I've done my best to make education our number one domestic priority, creating HOPE scholarships, expanding Pell grants, to make the 13th and 14th years of education as universal as the first 12 are today. We've passed tax credits, reformed the student loan program, expanded work-study, created AmeriCorps to open the doors of college to every young person who is willing to work for it.

We're working to make our public schools the best in the world, with smaller classes, better facilities, more master teachers and charter schools, higher standards, an end to social promotion. But the new economy also demands that our Nation commit to technology literacy for every child. We shouldn't let a child graduate from middle school anymore without knowing how to use new technologies to learn.

Already, 10 States with an eye to the future have made technology literacy a requirement of graduation from high school. I believe we should meet this goal in the middle school years. I believe every child in every State should leave middle school able to use the most current tools for learning, research, communication, and collaboration. And we will help every State to meet this goal.

If a State commits to adopt a technology literacy requirement then we will help to provide the training that the teachers need. I propose to create a team of trained technology experts for every American middle school in every one of these States and to create competitions over the next 3 years to encourage the development of high-quality educational software and educational web sites by students and professors and commercial software companies.

All students should feel as comfortable with a keyboard as a chalkboard, as comfortable with a laptop as a textbook. It is critical to ensuring that they all have opportunity in the world of the 21st century.

Today I pledge the resources and unrelenting efforts of our Nation to renew our enduring values in the information age. But the challenges that we face cannot be met by Government alone. We can only fulfill the promise of this revolution if we work together in the same way it was launched together, with creativity, resolve, a restless spirit of innovation.

While this mission requires the efforts of every citizen, those who fuel and enjoy the unparalleled prosperity of this moment have special responsibilities. The thriving new companies that line Route 128 in Silicon Valley -- I challenge them to use their power to empower others, to invest in a school, embrace a community in need, endow an eager young mind with opportunity, not to rest until every one of our children is technology literate. Many of you are doing such work already and many of them are; but America needs all such companies to participate.

And finally, to the graduates of the class of 1998, I, too, offer my congratulations and, as your President, my gratitude for your commitment, for challenges conquered, for projects completed, for goals reached and even surpassed. You, your parents, and your friends should be very proud today, and very hopeful, for all the possibilities of this new age are open to you. You are at the peak of your powers and the world will rightly reward you for the work you do.

But to make the very most of your life and the opportunities you have been given, you, too, must rise to your responsibility to give something back to America of what you have been given. As the years pass your generation will be judged, and you will begin to judge yourselves not only on what you do for yourself and your family but on the contributions you make to others, to your country, your communities, your generation of children. When you turn your good fortune into a chance for others, you then will not only be leaders in science and industry, you will become the leaders of America. Twenty-first century America belongs to you. Take good care of it.

Thank you, and God bless you.

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Jeff Shesol & Lowell Weiss

THE PRESIDENT HAS SEEN
6-5-98

PRESIDENT WILLIAM J. CLINTON

"OPPORTUNITY IN THE INFORMATION AGE"

COMMENCEMENT ADDRESS

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CAMBRIDGE, MASSACHUSETTS

June 5, 1998

CC: Laura
Capps

THE PRESIDENT HAS SEEN
6-5-98

Acknowledge: Dr. David Ho; Dr. Charles Vest, President of MIT; Alexander d'Arbeloff, [DAR-bel-off] Chairman of the Corp.; Dr. Paul Gray, Honorary Chairman of the Corp.; members of the Corporation; members of the faculty; members of the Class of 1998 and their families; members of the Classes of 1948 and 1973; Rep. Joe Kennedy; Mayor ~~Francis~~ FRANK Duehay [DOO-hay] and members of the Cambridge City Council. - BOSTON BRASS ENSEMBLE

MIT alumni and faculty members who have served in the Administration: Drs. John Deutch, Sheila Widnall, Ernest Moniz; Laura Tyson, Larry Summers, Lael Brainard, Jeffrey Frankel, Rebecca Blank, Joe Stiglitz, Alan Blinder, Larry Katz, Daniel Hastings, Shirley Jackson, Michael Telson, Jonathan Gruber, David Cutler.

THE PRESIDENT HAS SEEN
6-5-99

Faculty members who have served as advisors: Drs. Mario Molina, Phillip Sharp, Robert Solow, Patrick Winston.

Of course, I instructed all of these people to find out what ingenious "hack" [*class prank*] the Class of 1998 had in store. They all failed. But at least I have gotten wind of the devilish hack the Class of 2000 is already planning. I heard they were planning to roll all of the nation's computers back a hundred years!

The Massachusetts Institute of Technology is admired around the world as a force for progress; a crucible of creative thought; a place where the dreams of generations, ~~through determination and innovation~~, become reality.

THE PRESIDENT HAS SEEN
6-5-98

The remarkable discoveries and inventions of the MIT community have transformed America. Early in its history, MIT was known for advances in geology and mining. By mid century, MIT pioneered X-rays and radar. ~~And~~ today, it's atomic lasers, artificial intelligence, biotechnology -- ~~the inventions of a new age~~. ~~The story of MIT has been the story of the American Century~~.

MIT has done much to make this the American Century. And it will do much to make sure that will also remain the 21st Century.

~~As you know better than anyone, we are now living through a technological transformation as profound as any ever seen by MIT~~. This revolution began not with a single "shot heard round the world; ~~the Information Revolution~~ instead it was sparked by many catalysts -- in laboratories and libraries, in start-ups and blue chips, in homes and even dorm rooms -- across America and around the world.

As we continue our journey through the Information Revolution

THE PRESIDENT HAS SEEN
1-5-98

I am not here today to talk about the new marvels of science and engineering; you know far more of them than I do. Instead, I have come to MIT, an epicenter of the seismic shifts in our economy and society, to talk about how we can best apply our enduring American values ~~and what they mean in~~ to this revolutionary time. ~~I have come to talk about the~~ ~~responsibility you have and the~~ responsibility ~~we all have~~ as citizens to include every American in the promise of this new age.

From the start, America's greatest mission has been the fulfillment of ~~an eternal ideal~~ our Founders' vision: opportunity for all, best secured by people working together toward better tomorrows in a more perfect union. ~~More than any place in the world, this is a nation where~~ the spark of possibility ~~kindles within~~ American belief glows in every child; ~~where~~ that ordinary citizens can do extraordinary things.

THE PRESIDENT HAS SEEN
6-5-98

Our history can be understood as a ~~struggle~~ -- on foreign fields and factory floors, in town halls and the corridors of Congress -- to widen that circle of opportunity, to deepen the meaning of freedom, to make real the promise of America. Every generation has ~~met~~ this challenge. As we approach ~~the 21st~~ Century, ~~our commitment to values like opportunity are being tested again~~.

This spring, ~~as~~ I speak to graduating students, ~~I am focusing on this challenge~~. Last month, I spoke about the ~~mission of our men and women in uniform: to defend enduring principles against the new threat of terrorism.~~

THE PRESIDENT HAS SEEN
6-5-98

Next week, I will discuss how our nation's third great wave of immigration can either strengthen and unite America, or weaken and divide it. ~~The technologies of the~~ Information Age ~~pose similar challenges, and demand the same choice~~.

~~The choice is clear~~: We can extend opportunity to all Americans -- or leave many behind. We can erase lines of inequity -- or etch them indelibly. We can accelerate the most powerful engine of growth and prosperity the world has ever known -- or allow that engine to stall. History has taught us that choices cannot be deferred; ~~opportunity does not widen as a matter of course~~.

THE PRESIDENT HAS SEEN
6-5-95

There is no such thing as virtual opportunity. We cannot point and click our way to a better future. If ~~we stand passively in the face of this great transformation~~, we ~~will fail~~ to fulfill the promise of this new age,

Already, the Information Age is transforming the way we work. The high-tech industry employs more people today than the auto industry did at its height in the 1950s. The auto and steel industries, in turn, have been revived by the new technologies ~~sharpening America~~'s ~~competitive edge~~. And among those making the most use of technology R&D are industries such as construction, transport, and retail stores.

It is transforming the way we live. The typical American home now has as much computing power as all of MIT had the year most of you seniors were born.

It is transforming the way we communicate. On any business day, more than 30 times as many messages are delivered by E-Mail than by the U.S. Postal Service. And today, this ceremony is being carried live on the Internet, so people all over the world can join in.

It is transforming the way we learn. With the DVD technology available today, we can store more reference material in a three-inch stack of disks than in all the stacks of Hayden Library.

THE PRESIDENT HAS SEEN
6-5-98

For those of you who never managed to make it to Hayden in your four years, it's the one over on the left, just behind Building Two.

~~It is a powerful, sweeping transformation -- the scope~~ it is transforming the way our society works.
of ~~which we have only begun to comprehend.~~ ~~But we can already see its greatest potential~~ -- giving millions of Americans the opportunity to join in the enterprise of building our nation.

The tools we develop today are bringing down mighty barriers -- of race and gender, of income and age. The disabled are opening long-closed doors of school, of work, of possibility.

THE PRESIDENT HAS SEEN
6-5-98

Small businesses are competing in worldwide markets once reserved for the most powerful corporations. Children will be able to stretch a hand across a keyboard and reach every book ever written, every painting ever painted, every symphony ever composed.

For the very first time, a child in the most isolated inner city or rural town can have access to the same world of knowledge, at the same instant, as a child in the most affluent suburb. Imagine the revolutionary, democratizing potential this can bring. Imagine the enormous benefits to our economy, to our society, if not just a fraction but all young people entering the workforce master this key set of 21st Century skills.

THE PRESIDENT HAS SEEN
6-5-94

East Somerville, just a few miles from here is a working-class community. It has sometimes struggled to meet the needs of population that is growing more diverse by the day. But at East Somerville Community School, well-trained technology teachers, with equipment and support from Time-Warner Cable, have begun to give first to eighth graders an early -- and enormous -- boost in life. First graders are producing small books on computers. Sixth graders are producing documentaries. The technology has so motivated them that almost all sixth graders showed up at school to work on their computer projects over winter break.

That small miracle can be replicated in every school, rich and poor, across America. Yet today, affluent schools are almost three times as likely to have Internet access in the classroom. White students are more than twice as likely as black students to have computers in their homes. ~~And~~ unequal education ~~will~~ harden into unequal prospects. The three fastest-growing careers in America are all in computer-related fields -- ~~and all~~ offer far more than average pay.

The digital divide has begun to narrow. But it won't disappear of its own accord. History teaches us that even as new technologies create growth and new opportunity, they can heighten economic inequalities and sharpen social divisions.

THE PRESIDENT HAS SEEN
6-5-98

That is what happened with the mechanization of agriculture. That is what happened in the Industrial Revolution. As we move into the Information Age, we have it within our power to avoid these ~~mistakes~~ disadvantages. We can reap the growth that comes from revolutionary new technologies -- and at the same time, use them to eliminate, not widen, the disparities that exist.

Until every child has a computer in the classroom AND A TRAINED TEACHER TO HELP THEM **~~and the skills to~~ use it . . . until every student** HAS THE SKILLS TO **~~can~~ tap the enormous resources of the Internet . . . until every high-tech company can find skilled workers to fill its high-wage jobs . . . America will miss the full promise of the Information Age. We cannot allow this age of opportunity to be remembered ~~as a~~ also for its missed opportunities.**

THE PRESIDENT HAS SEEN
6-5-98

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Every day we wake up to new scientific discoveries that change the way we think about our world. Just yesterday, ~~American physicists and their Japanese colleagues~~ announced a discovery ~~that~~ may change our most fundamental theories -- from the nature of the smallest subatomic particles to the universe itself. ~~And they made that discovery with the~~ significant support ~~of the~~ Department of Energy.

~~The implications of findings like this are not limited~~ to the laboratory; ~~they affect the whole of our society~~ and our economy. ~~That is why, even as we have balanced the budget, we have each year increased our investments~~ in the ~~increasingly interrelated disciplines~~ of science. ~~This year,~~ ~~we have asked Congress for the largest boost in civilian~~ research funding ~~in history -- not just a one-year increase,~~ but an increase sustained over the next five years.

~~expansion. And without government-funded research.~~

THE PRESIDENT HAS SEEN
6-5-98

How will we meet this challenge?

First, we must help you to ensure that America continues to lead the revolution in science and technology. Growth is a prerequisite for opportunity, and scientific research is a basic prerequisite for growth.

In just the past four years, information technology has been responsible for more than a third of our economic expansion. And without government-funded research, computers, the Internet, communications satellites wouldn't even exist. Now, ~~at~~ the verge of even more remarkable breakthroughs, we must expand our commitment to ~~information technology~~ once again.

In the budget I submit to Congress for the year 2000, I will call for a significant increase in computing and communications research. I have directed Dr. Neal Lane, my new advisor for science and technology, to work with the nation's research community to prepare a detailed plan for my review.

Over the past 50 years, our commitment to science has strengthened the nation in countless ways. Scientific research has created vast new industries and millions of jobs. It has allowed America to produce the world's most bountiful food supplies and remarkable tools for fighting disease.

THE PRESIDENT HAS SEEN
6-5-98

And just think of what today's investments will yield: For Dawn HD → unraveling the agonizing riddles of AIDS, A cure for cancer. A flourishing economy that produces trillions' wealth, brink of next, Ocean, global warming, much less pollution. High-speed wireless networks that bring distance learning, telemedicine, and economic growth to every rural community in America.

That is why, even as we have balanced the budget, we have increased our investments in science. This year, we have asked Congress for the largest increase in research funding in history -- not just a one year increase, but an increase sustained over the next five years. Science is a core commitment that we must strengthen and defend.

THE PRESIDENT HAS SEEN
6-5-98

We ~~will~~ also work to address the threat to our prosperity posed by the "Year 2000 Bug."

In all these ways, we will work to harness the force of the Information Revolution to lift our economy to new heights of economic growth.

~~There is a second thing we must do.~~ We must make sure that the opportunities of the Information Age will belong to all our children. And that is why we must ensure that every young American has access to the new technologies.

We are already making great strides. In my State of the Union address two years ago, I challenged the nation to connect every American classroom to the Internet by the year 2000. Thanks to unprecedented cooperation at the federal, state, and local levels, an outpouring of support from active citizens, and the decreasing cost of computers, we are well on track to meet this goal. Four years ago, when you arrived at MIT, barely 3% of America's classrooms were connected. By this time next year, we will have connected well over half our classrooms, including 100 percent of the classrooms in the nation's 50 largest urban school districts.

THE PRESIDENT HAS SEEN
6-5-98

But to make this quantum leap, we must all do our part. You may have heard recently about something called the e-rate, the most crucial initiative we have launched to help connect America's schools, libraries, and rural health centers to the Internet. Some businesses have called on Congress to repeal this initiative. They say America can't afford to provide discounts to these institutions of learning and health. I say, we can't afford not to. Thousands of poor schools and libraries are in desperate need of discounts. They simply cannot plug into the Information Age without them. At a sunlit moment of prosperity, there is no reason in the world for anyone to be left in the dark.

THE PRESIDENT HAS SEEN
6-5-98

But all the computers and connections in the world will go to waste if our students and teachers lack the knowledge -- or the inspiration -- to make use of these powerful tools. So the third thing we must do is invest in 21st Century skills for America's children.

For five years now, we have made education America's number one priority. That is why we created HOPE scholarships and expanded Pell Grants to make the 13th and 14th years of education as universal as the first 12 are today. That is why we have worked to make our public schools the best in the world, reducing class size, adding teachers, and demanding high national standards in the basics: math, science, and English.

THE PRESIDENT HAS SEEN
6-5-98

But ~~the Information Age~~, the new economy demands ~~the basics and beyond~~. That ~~is why this~~ nation ~~must~~ commit to a new imperative: technology literacy for every child. ~~We would not let a child graduate from middle school without knowing how to read~~. We ~~cannot~~ let a child graduate from middle school without knowing how to use ~~the~~ new technologies to learn.

Already, ten states with an eye to the future have made technology literacy a requirement of graduation from high school. But there is no reason we should not help our children meet this goal in their middle school years.

THE PRESIDENT HAS SEEN
6-5-94

I believe that every child, in every state, should leave middle school able to use the most current tools for learning, research, communication, and collaboration. We will help every state to achieve this ambitious goal. If they commit to adopt a technology literacy requirement, then the national government will help provide the training that middle school teachers will need. We propose to create a team of trained technology experts for every American middle school in every one of these states. We propose to create competitions over the next three years to encourage the development of high-quality educational software and educational Web sites by students, professors, and commercial software companies.

THE PRESIDENT HAS SEEN
6-5-96

All Students should feel as confident with a keyboard as they do with a chalkboard. ~~Students should be~~ as familiar with a laptop as they are with a textbook. ~~That is the way~~ ~~we will~~ to ensure opportunity for all in the Information Age.

Today I have pledged the resources and the unrelenting efforts of our nation to renew our enduring values. But the challenges of the Information Age will not be resolved by government ~~or a high tech fix~~ alone. We will only fulfill the promise of this revolution if we work together in the manner we launched it: together, and with creativity, resolve, and a restless spirit of innovation.

~~use your power to empower others~~

THE PRESIDENT HAS SEEN
6-5-98

This mission ~~must mobilize~~ our entire society. ~~A new age brings new responsibilities; and the Information Age creates a special responsibility for~~ those who ~~both~~ fuel and enjoy ~~such~~ unparalleled prosperity. To the thriving new companies that line Route 128 and Silicon Valley, I issue this challenge: use your power to empower others.

Invest in a school; embrace a community in need; endow an eager young mind with opportunity. Commit your considerable resources, and do not rest until every one of those children is technology-literate -- and has the tools and skills to succeed in the 21st century.

THE PRESIDENT HAS SEEN
6-5-98

And to you, the MIT graduating class of 1998, I offer my congratulations -- for challenges conquered, for projects completed, for goals reached and even surpassed. You and your parents should be very proud -- ~~and very confident as you venture forth from this campus. From information technology to economics, and from physics to political science, this is an age of possibility~~ -- ~~and~~ all the possibilities of this new age belong to you. You are at the peak of your powers, ~~both physical and intellectual~~, and the world will rightly reward you for the work you do.

But ~~But~~ to make the very most of the opportunities you have been given, you too must rise to your responsibility -- to give ~~the~~ something of what you have been given back to America's future ~~responsibility of empowering every American~~.

THE PRESIDENT HAS SEEN
6-5-91

As the years pass, your ~~work~~ will be judged, ~~and~~ you will judge yourselves, on the contributions you make to your ~~schools and~~ your communities. ~~If you embrace this responsibility, if you~~ Turn your ~~opportunities~~ into opportunities for others, ~~then~~ you will not only be leaders in science and in industry -- you will be the leaders of our nation. Good luck and God bless you.

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36 Weekly Comp. Pres. Doc. 550

Public Papers of the Presidents

Public Papers of the Presidents

March 14, 2000

CITE: 36 Weekly Comp. Pres. Doc. 550

LENGTH: 232 words

HEADLINE: Joint Statement by President Clinton and Prime Minister Tony Blair of the United Kingdom

BODY:

In the last decade of the twentieth century, scientists from around the world initiated one of the most significant scientific projects of all time: to determine the DNA sequence of the entire human genome, the human **genetic** blueprint. Progressing ahead of schedule, human genome research is rapidly advancing our understanding of the causes of human disease and will serve as the foundation for development of a new generation of effective treatments, preventions, and cures.

To realize the full promise of this research, raw fundamental data on the human genome, including the human DNA sequence and its variations, should be made freely available to scientists everywhere. Unencumbered access to this information will promote discoveries that will reduce the burden of disease, improve health around the world, and enhance the quality of life for all humankind. Intellectual property protection for genebased inventions will also play an important role in stimulating the development of important new health care products.

We applaud the decision by scientists working on the Human Genome Project to release raw fundamental information about the human DNA sequence and its variants rapidly into the public domain, and we commend other scientists around the world to adopt this policy.

NOTE: An original was not available for verification of the content of this joint statement.

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