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OA/ID Number:	13507
Folder ID Number:	13507-003

Folder Title:
Science and Technology Awards 10/18/89 [OA 3536]

Stack:	Row:	Section:	Shelf:	Position:
G	25	6	5	6

PROGRAM

The Honorable Robert A. Mosbacher
Secretary of Commerce

The Honorable D. Allan Bromley
Assistant to the President
for
Science and Technology

THE PRESIDENT OF THE UNITED STATES

PRESENTATION OF AWARDS

THE PRESIDENT OF THE UNITED STATES

Recipients of the National Medal of Technology for 1989

ROBERT R. EVERETT
JAY W. FORRESTER

For their creative work in developing technologies and applying computers to real-time applications. Their important contributions proved vital to national and free world defense and opened a new era of world business.

HELEN EDWARDS
RICHARD A. LUNDY
J. RITCHIE ORR
ALVIN TOLLESTRUP

For their contributions to the design, construction, and initial operation of the TEVATRON particle accelerator. This scientific instrument was designed to explore the fundamental properties of matter. The innovative design and successful operation of the TEVATRON has been crucial to the design of the Superconducting Super Collider, the planned next generation particle accelerator.

HERBERT W. BOYER
STANLEY N. COHEN

For their fundamental invention of gene splicing techniques allowing replication in quantity of biomedically important new products and beneficially transformed plant materials. This discovery of recombinant DNA technology has transformed the basic science of molecular biology and the biotechnology industry.

Recipients of the National Medal of Science for 1989

Behavioral/Social Sciences

ROGER W. SPERRY

For his work on neurospecificity which showed how the intricate brain networks for behavior are effected through a system of chemical coding of individual cells, which has made fundamental contributions to the understanding of human nature.

Biological Sciences

KATHERINE ESAU

For her distinguished service to the American community of plant biologists, and for the excellence of her pioneering research, both basic and applied, on plant structure and development, which has spanned more than six decades; for her superlative performance as an educator, in the classroom and through her books; for the encouragement and inspiration she has given to a legion of young, aspiring plant biologists; and for providing a special role model for women in science.

VIKTOR HAMBURGER

For his steadfast work that led to the discovery and understanding of normally occurring neuronal death, nerve growth factor, and competitive relationships in the vertebrate nervous system.

PHILIP LEDER

For his innovative studies that have significantly advanced knowledge and provided new directions for research in molecular genetics, immunology and cancer etiology.

JOSHUA LEDERBERG

For his work in bacterial genetics and immune cell single type antibody production; for his seminal research in artificial intelligence in biochemistry and medicine; and for his extensive advisory role in government, industry and international organizations that address themselves to the societal role of science.

HARLAND G. WOOD

For his pioneering work on the biochemistry of CO_2 fixation, for major contributions to medical education, and for leadership in biochemistry at the national and international levels.

Chemistry

RICHARD B. BERNSTEIN

For his development and use of the technique of molecular beams, which have played a significant role in shaping the field of modern chemical dynamics.

MELVIN CALVIN

For his pioneering studies in the mechanism of photosynthesis and bioenergetics, and for the application of scientific theory toward the solution of the most fundamental problems of the age—energy, food, chemical and viral carcinogenesis, and the origin of life.

RUDOLPH A. MARCUS

For his fundamental, far-reaching, and eminently useful developments of theories of unimolecular reactions and of electron transfers in chemistry and biochemistry.

HARDEN M. McCONNELL

For his seminal contributions in developing the power of nuclear and electron magnetic resonance spectroscopy; the introduction of the spin labelling technique; and for original discoveries on the structure, properties and functioning of cell membranes.

Engineering

HARRY G. DRICKAMER

For his discovery of the "pressure tuning" of electronic energy levels as a way to obtain new and unique information on the electronic structure of solids.

HERBERT E. GRIER

For his pioneering scientific contributions and his leadership role in ultra-high-speed electronic stroboscopy, electro-optic innovations, national defense, and aerospace sciences.

Mathematics

SAMUEL KARLIN

For his broad and remarkable researches in mathematical analysis, probability theory and mathematical statistics, and in the application of these ideas to mathematical economics, mechanics, and population genetics.

SAUNDERS MAC LANE

For revolutionizing the language and content of modern mathematics by his collaboration in the creation and development of the fields of homological algebra and category theory, for outstanding contributions to mathematics education, and for incisive leadership of the mathematical and scientific communities.

DONALD C. SPENCER

For his original and insightful research that has had a profound impact on twentieth-century mathematics, and for his role as an inspiring teacher to generations of American mathematicians.

Physical Sciences

ARNOLD O. BECKMAN

For his leadership in the development of analytical instrumentation, and for his deep and abiding concern for the vitality of the Nation's scientific enterprise.

EUGENE N. PARKER

For his fundamental studies of plasmas, magnetic fields, and energetic particles on all astrophysical scales; for his development of the concept of solar and stellar winds; and for his studies on the effects of magnetic fields on the solar atmosphere.

ROBERT P. SHARP

For his research that has illuminated the nature and origin of the forms and formation processes of planetary surfaces and for teaching two generations of scientists and laymen to appreciate them; for his recruitment and leadership of a successful multidisciplinary department of earth and planetary scientists who have gained world recognition.

HENRY M. STOMMEL

For his original, penetrating and fundamental contributions to the physics of ocean circulation.

The National Medal of Technology Nomination Evaluation Committee

GEORGE BUGLIARELLO

BOB O. EVANS

S. ALLEN HEININGER

RICHARD R. NELSON

WILLIAM C. NORRIS

GEORGE B. RATHMANN

ROLAND W. SCHMITT

ROBERT M. WHITE, Chairman

ELIAS R. ZENKICH

PAUL V. BRADEN

Executive Director

The President's Committee on the National Medal of Science

JOHN D. BALDESCHWIELER

CARL O. BOSTROM

ROLAND H. CARLSON

DAVID R. CHALLONER, *Chairman*

SHERWIN T. S. CHAN

SAMUEL CONTI

WILLIAM R. GRAHAM*

ROGER D. HARTMAN

YUET W KAN

WILLIE J. NUNNERY

FRANK PRESS*

RITA RICARDO-CAMPBELL

I. M. SINGER

RONALD H. WINSTON

James F. Hays
Executive Secretary

**Member, Ex Officio*

SCIENCE & TECHNOLOGY / THE EAST ROOM
OCTOBER 18, 1989 / 2:00 P.M.

SECRETARY MOSBACHER, SECRETARIES SULLIVAN ~~AND CAVAZOS~~, DR. BROMLEY, SENATORS GORE AND PRESSLER, CONGRESSMEN CONTE, WALKER, WALGREN, GREEN AND LAFALCE, AWARD-RECIPIENTS AND OTHER DISTINGUISHED SCIENTISTS, LADIES AND GENTLEMEN, FRIENDS.

LET ME WELCOME YOU TO THE WHITE HOUSE. AND ON BEHALF OF EVERY AMERICAN, THANK YOU FOR YOUR MAGNIFICENT EFFORTS ON BEHALF OF THIS NATION AND THE WORLD.

IT IS INDEED AN HONOR TO ADDRESS THIS SINGULARLY DIVERSE AND DISTINGUISHED GROUP OF AMERICANS. AND TO PRESENT AMERICA'S HIGHEST HONOR IN THE AREAS OF SCIENCE AND TECHNOLOGY: THE NATIONAL MEDAL OF SCIENCE AND THE NATIONAL MEDAL OF TECHNOLOGY.

THREE DECADES AGO THE NATIONAL MEDAL OF SCIENCE WAS CREATED BY CONGRESS.

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FOR OURS IS A PIONEERING HERITAGE -- FROM ELI WHITNEY TO LEE DE FOREST TO THE SALK VACCINE FOR POLIO.

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OR ROSALYN YALOW [YA-LOW], WHOSE BREAKTHROUGH DIAGNOSTIC TECHNIQUE IS HELPING TO SAVE THOUSANDS OF LIVES.

THINK, TOO, OF HOW ANOTHER OF LAST YEAR'S RECIPIENTS HAS BEEN A TRAILBLAZER IN THE AIRCRAFT INDUSTRY. SINCE THE 1940s, KELLY JOHNSON HAS DESIGNED MORE THAN 40 AIRCRAFT -- INCLUDING THE WORLD'S LARGEST AIRCRAFT AND HIGHEST FLYING JET. HE'S NOT ONLY LED THEIR DEVELOPMENT PROGRAMS.

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TODAY, WE CELEBRATE DREAMS THAT YOU ARE MAKING POSSIBLE -- DREAMS THAT WILL KEEP AMERICA COMPETITIVE, RAISE OUR STANDARD OF LIVING, AND IMPROVE OUR QUALITY OF LIFE. YOUR DREAMS PRESAGE A NEW GOLDEN AGE OF INFORMATION, UNDERSTANDING, AND TECHNOLOGY. AND SHOW HOW CREATIVITY COMES FROM THE HUMAN HEART AND MIND.

IN CLOSING, THEN, LET ME FIRST SALUTE YOUR ACHIEVEMENTS AND YOUR COMMITMENT.

MANY OF YOU HAVE BEEN TEACHERS. SOME HAVE SERVED IN GOVERNMENT. ALL HAVE SHOWN THAT AMERICA HAS NO NATURAL RESOURCE MORE PRECIOUS THAN HER INTELLECTUAL RESOURCES.

NEXT, LET ME PROMISE YOU: OUR ADMINISTRATION WILL DO ITS PART. WE KNOW THAT SCIENTIFIC KNOWLEDGE MUST BE RENEWED AND EXPANDED. AND SO WE WILL CONTINUE THE AMERICAN TRADITION OF STRONG, BROAD-BASED SUPPORT FOR BASIC RESEARCH AND R AND D IN THE AREAS OF SCIENCE AND TECHNOLOGY.

OUR APPROACH WILL BE BALANCED, AND FAIR: IT INCLUDES BOTH "LARGE SCIENCE AND TECHNOLOGY PROJECTS" AS WELL AS "SMALL SCIENCE PRINCIPAL INVESTIGATOR" FUNDING.

IN "LARGE SCIENCE AND TECHNOLOGY," LOOK AT THE OPPORTUNITIES AHEAD: THE SUPERCONDUCTING SUPER COLLIDER AND THE HUMAN GENOME [G NOME] INITIATIVES. OR SPACE STATION FREEDOM, WHICH WILL LEAD US TOWARD THE STARS.

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LADIES AND GENTLEMEN, THESE PRIORITIES CONSTITUTE AN INVESTMENT IN THE FUTURE -- STRENGTHENING THE EDUCATION WHICH IS CRUCIAL TO THAT FUTURE.

THIS INVESTMENT IN EDUCATION IS VITAL IF AMERICA IS TO REMAIN THE LEADER OF A VERY COMPETITIVE WORLD -- BOTH INTELLECTUALLY AND COMMERCIALLY. AND IF SCIENCE AND TECHNOLOGY ARE TO UPLIFT THIS GENERATION. AS YOU ALREADY HAVE. AND INSPIRE GENERATIONS TO COME. AS YOU MUST. FOR YOU ARE AMERICA'S TRUE PIONEERS. DREAMING THE DREAMS THAT ENHANCE OUR ENERGY AND HEALTH, MEDICINE AND PRODUCTIVITY, NATIONAL SECURITY AND EDUCATION.

THE DREAMS THAT YOUR REMARKABLE DEEDS ARE HELPING TO COME TRUE.

AGAIN, MY HEART-FELT CONGRATULATIONS ON BEHALF OF EACH AND EVERY CITIZEN. AND NOW IT IS MY GREAT PLEASURE TO INTRODUCE THE SECRETARY OF COMMERCE, BOB MOSBACHER, AND MY ASSISTANT FOR SCIENCE AND TECHNOLOGY, ALLAN BROMLEY, WHO WILL DESCRIBE YOUR ACHIEVEMENTS.

BUT, YOU KNOW, I LIKE MY END OF THE BARGAIN. I GET TO PRESENT YOU WITH AMERICA'S HIGHEST TECHNOLOGICAL AND SCIENTIFIC AWARD. AND, YES, I GET TO SHAKE YOUR HANDS.

THANK YOU VERY MUCH, GOD BLESS YOU, AND GOD BLESS AMERICA.

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[redacted]

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THE WHITE HOUSE

WASHINGTON

October 16, 1989

INFORMATION

MEMORANDUM FOR THE PRESIDENT

THROUGH: CHRISS WINSTON CW

FROM: CURT SMITH CS

SUBJECT: REMARKS TO THE NATIONAL MEDAL OF SCIENCE AND NATIONAL MEDAL OF TECHNOLOGY WINNERS

I. SUMMARY

On Wednesday, October 18, at 2:00 p.m. you will address the recipients of the National Medal of Science and National Medal of Technology. About 200 guests will attend the ceremony in the East Room. The attendees will include the honorees, their colleagues and guests. Congressmen Robert Roe, Robert Walker, Doug Walgren, and John LaFalce, Senators Jake Garn and Larry Pressler and Secretaries Mosbacher, Derwinski and Cavazos will be attending. There are still some Congressmen and Secretaries who have not yet responded. We will include any additional notables on the speech cards.

II. DISCUSSION

The enclosed remarks (7 minutes) applaud the success of the scientists' achievements. The remarks also express your support for scientific and technological research and development.

Following the remarks, Secretary Mosbacher and Allan Bromley will read the citations and you will shake the recipients' hands.

Who is Lee Deforest

& what is the human geno. initiative

(Smith/Blessey)
Draft Four
October 16, 1989
TECH

PRESIDENTIAL REMARKS: SCIENCE & TECHNOLOGY
THE EAST ROOM
WEDNESDAY, OCTOBER 18, 1989
2:00 P.M.

Dr. Bromley, Secretary Mosbacher, Secretaries Derwinski and Cavazos, Senators Garn and Pressler, Congressmen Roe, Walker, Walgren, and LaFalce, Award-Recipients and other distinguished scientists, ladies and gentlemen, friends.

Let me welcome you to the White House. And on behalf of every American, thank you for your magnificent efforts on behalf of this Nation and the world.

It is indeed an honor to address this singularly diverse and distinguished group of Americans. And to present America's highest honor in the areas of science and technology: The National Medal of Science and the National Medal of Technology.

Three decades ago the National Medal of Science was created by Congress. Its purpose was to recognize individuals for their "outstanding contributions to knowledge in the physical, biological, mathematical, or engineering sciences."

Then, nine years ago, the National Medal of Technology was established. **Its** purpose was to "recognize scientists and engineers for projects that improve the well-being of the United States through the development or application of technology."

Over the past several decades, these contributions and projects have helped make America a richer, better place. New

types of grain and fertilizers have spurred greater crop yields. Diagnostic technology has helped combat disease. Progress in biology and biotechnology has begun unmasking the secrets of heredity. And the work goes on -- through pioneers, like you.

For ours is a pioneering heritage -- from Eli Whitney to Lee De Forest to the Salk vaccine for polio. And this year's 27 recipients of the Science and Technology medals embody the best and brightest of that heritage -- Americans inspired by the belief that the trailblazers of today will be the heroes of tomorrow.

Think of some of last year's recipients. Think of Edwin Land, who invented a plastic material that absorbed light of a specific polarization. Or Maurice Hilleman, whose brilliant discoveries in basic research and vaccine creation are combating infectious disease. Or Rosalyn Yalow [YA-low], whose breakthrough diagnostic technique is helping to save thousands of lives.

Think, too, of how another of last year's recipients has been a trailblazer in the aircraft industry. Since the 1940s, Clarence (Kelly) Johnson has designed more than 40 aircraft -- including the world's largest aircraft and highest flying jet. He's not only led their development programs. But, on their maiden flights, was the flight test engineer himself -- laying his own life on the line. Like each of you, Kelly Johnson has shown that progress often comes neither quickly nor cheaply. It demands devotion and sometimes even danger. It knows adversity

and pain. And like each of you, he knows that dreams realized make possible even bigger dreams.

Today, we celebrate dreams that **you** are making possible -- dreams that will keep America competitive, raise our standard of living, and improve our quality of life. Your dreams presage a new Golden Age of information, understanding, and technology. And show how **creativity comes from the human heart and mind.**

In closing, then, let me first **salute** your achievements and your commitment. Many of you have been teachers. Some have served in government. **All** have shown that America has no natural resource more precious than her **intellectual** resources.

Next, let me **promise** you: Our Administration will do its part. We know that scientific knowledge must be renewed and expanded. And so we will continue the American tradition of strong, broad-based support for basic research and R and D in the areas of science and technology.

Our approach will be balanced, and fair: It includes both "large science and technology projects" as well as "small science principal investigator" funding.

In "large science and technology," look at the opportunities ahead: The Superconducting Super Collider and the Human Genome Initiatives. Or Space Station Freedom, which will lead us toward the stars. And the "small science" potential is no less dazzling: We want to stay on the path to doubling the National Science Foundation budget if Congress will cooperate. And give our youth a **special** incentive to excel in science, mathematics,

and engineering through our new program of National Science Scholars.

Ladies and gentlemen, these priorities constitute an investment in the future -- strengthening the education which is **crucial to** that future.

This investment in education is vital if America is to remain the leader of a very competitive world -- both intellectually and commercially. And if science and technology are to uplift **this** generation. As you **already have**. And inspire generations to come. As you **must**. For you **are America's true pioneers.** Dreaming the dreams that enhance our energy and health, medicine and productivity, national security and education. The dreams that your remarkable deeds are helping to come true.

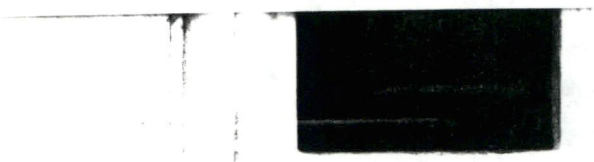
Again, my heart-felt congratulations on behalf of each and every citizen. And now it is my great pleasure to introduce my Assistant for Science and Technology, Allan Bromley, and my Secretary of Commerce, Bob Mosbacher, who will present you with America's highest technological and scientific award. But, you know, I like my end of the bargain. I get to shake your hands.

Thank you very much, God bless you, and God bless America.

# # # #

SCIENCE & TECHNOLOGY / THE EAST ROOM
OCTOBER 18, 1989 / 2:00 P.M.

SECRETARY MOSBACHER, SECRETARY SULLIVAN, DR. BROMLEY, SENATORS GORE AND PRESSLER, CONGRESSMEN WALGREN, GREEN AND LAFALCE, AWARD-RECIPIENTS AND OTHER DISTINGUISHED SCIENTISTS, LADIES AND GENTLEMEN, FRIENDS.



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OCTOBER 18, 1989 / 2:00 P.M.

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THANK YOU VERY MUCH, GOD BLESS YOU, AND GOD BLESS AMERICA.

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URGENT

Document No. 081507SS

WHITE HOUSE STAFFING MEMORANDUM 8247

DATE: 10/14/89 ACTION/CONCURRENCE/COMMENT DUE BY: MONDAY, OCT. 16, NOON

SUBJECT: PRESIDENTIAL REMARKS: SCIENCE AND TECHNOLOGY AWARDS CEREMONY
THE EAST ROOM
WEDNESDAY, OCTOBER 18, 1989 (10/13 - draft three)

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☐	☑	MCCLURE	☑	☐
SUNUNU	☐	☑	NEWMAN	☐	☐
SCOWCROFT	☑	☐	PORTER	☑	☐
DARMAN	☑	☐	ROGICH	☑	☐
BATES	☑	☐	UNTERMEYER	☐	☐
CARD	☐	☑	ROGERS	☐	☑
CICCONI	☐	☑	WINSTON	☐	☑
DEMAREST	☑	☐	PINKERTON	☑	☐
FITZWATER	☐	☑	BROMLEY	☑	☐
GRAY	☑	☐	FIRESTONE	☐	☑
HAGIN	☐	☐	_____	☐	☐

REMARKS:

Please forward any comments directly to Chriss Winston, Room 122, x2930, no later than NOON Monday, October 16, with a copy to my office. Thank you.

RESPONSE:

TO: CHRISS WINSTON October 16, 1989

The NSC concurs with the attached Presidential remarks as revised.

G. Philip Hughes
Executive Secretary

cc: James Cicconi

James W. Cicconi
Assistant to the President
and Deputy to the Chief of Staff
Ext. 2702

(Smith/Blessey)
Draft Three
October 13, 1989
TECH

1989 OCT 13 PM 6:46

PRESIDENTIAL REMARKS: SCIENCE & TECHNOLOGY
THE EAST ROOM
WEDNESDAY, OCTOBER 18, 1989

Let me welcome you to the White House, And on behalf of each American, thank you for your magnificent efforts ~~on behalf of this Nation and the world.~~ I'm honored

~~It is indeed an honor~~ to address this singularly diverse and distinguished group of Americans. And to present America's highest honor in the areas of science and technology: The National Medal of Science and the National Medal of Technology.

Three decades ago the National Medal of Science was created by Congress. ~~Its~~ The purpose was to recognize ~~individuals for their~~ "outstanding contributions to knowledge in the physical, biological, mathematical, or engineering sciences."

~~Then,~~ Nine years ago, the National Medal of Technology was established. ~~Its purpose was~~ to "recognize scientists and engineers for projects that improve the well-being of the United States through the development or application of technology." similarly

Over the past several decades, these contributions and projects have helped make America a richer, better place. New types of grain and fertilizers have spurred greater crop yields. Diagnostic technology has helped combat disease. Progress in biology and biotechnology has begun unmasking the secrets of heredity. And the work goes on -- through pioneers, like you.

For ours is a pioneering heritage -- from Eli Whitney to Lee De Forest to the Salk vaccine for polio. ~~And~~ This year's 27 recipients of the Science and Technology medals embody the best and brightest of that heritage -- Americans inspired by the belief that the trailblazers of today will be the heroes of tomorrow.

Think of Professor Richard Bernstein, whose work in molecular beams has helped shape modern chemistry. Or Professor ~~Emeritus~~ Katherine Esau, enriching the study of the botanical sciences. Or Jay Forrester and Robert Everett, helping technologies and computers enhance America's defense.

Since the 1940s, for instance, Robert Sharp has overcome physical and logistical barriers to illumine our knowledge of planetary surfaces. He's climbed glaciers, and felt permafrost -- dared mountains and ravines. Like each of you, he has shown that progress ~~often~~ comes neither quickly nor cheaply. It demands devotion and sacrifice. It knows adversity and pain. And like each of you, he knows that dreams realized make possible even bigger dreams.

Today, we celebrate those dreams -- dreams that you are making possible. And I only wish I had time to mention each recipient. ~~For all of~~ Your dreams will keep America competitive, ~~Dreams that will~~ raise our standard of living, and, ~~moreover,~~ improve our quality of life. ~~They are~~ Yours dreams ~~that~~ presage a new Golden Age of information, understanding, and technology. ~~Dreams that show how creativity comes from the human heart and mind.~~

In closing, then, let me first salute your achievements and your commitment. Many of you have been teachers. Some have served in government. All have shown that America has no natural resource more precious than her intellectual resources.

Next, let me promise you: Our Administration will do its part. We know that scientific knowledge must be renewed and expanded. And so we will continue the American tradition of strong, broad-based support for research and development in all areas of science and technology.

Our approach will be balanced, and fair: It includes both "large science and technology projects" as well as "small science principal investigator" funding.

In "large science and technology," look at the opportunities ahead: The Superconducting Super Collider and the Human Genome initiatives. & Space Station Freedom, which will lead us toward the stars. And the "small science" potential is no less dazzling: We want to double the National Science Foundation budget over the next five years, And give our youth a special incentive to excel in science, mathematics, and engineering through our new program of National Science Scholars.

Ladies and gentlemen, these new initiatives -- this investment -- can help science and technology help America triumph in the future. ~~Uplifting this~~ generation. ~~And inspiring~~ generations to come. For you are America's true pioneers. Dreaming the dreams that enhance our energy and health, medicine

and productivity, national security and education. The dreams that your remarkable deeds are helping to come true.

Again, my heart-felt congratulations on behalf of each and every citizen. And now it is my great pleasure to introduce my Advisor for Science and Technology, Allan Bromley, and my Secretary of Commerce, Bob Mosbacher, who will present you with America's highest technological and scientific achievement. But, you know, I like my end of the bargain. I get to shake your hands.

Thank you very much, God bless you, and God bless America.

# # # #

MAURICE R. HILLEMAN is Director, Merck Institute for Therapeutic Research and Adjunct Professor of Pediatrics, School of Medicine, University of Pennsylvania, Philadelphia, Pa. From 1948-1958, he was Chief, Department of Respiratory Diseases, Walter Reed Army Institute of Research, Washington, D.C. In 1951, he was a Visiting Investigator at the Hospital of the Rockefeller Institute for Medical Research. He has published more than 440 original articles in the fields of virology, immunology, epidemiology and infectious diseases. He has served on numerous advisory boards and committees, academic and governmental, and has been a member of the Expert Advisory Panel of the World Health Organization, Geneva, since 1952. He received the Lasker Medical Research Award in 1983 and is a member of the National Academy of Sciences and the American Academy of Arts and Sciences. Dr. Hilleman received his B.S. degree from Montana State University in 1941 and a Ph.D. from the University of Chicago in 1944. He holds several honorary doctorate degrees.

ERIC R. KANDEL, M.D.

Eric R. Kandel is University Professor at the Center for Neurobiology and Behavior of the College of Physicians and Surgeons of Columbia University and a Senior Investigator at the Howard Hughes Medical Institute. Born in Vienna, Austria, he graduated from Harvard College in 1952 and from the New York University School of Medicine in 1956. After residency training in psychiatry at the Massachusetts Mental Health Center, Harvard Medical School, Kandel held faculty positions at the Harvard Medical School and the New York University School of Medicine before coming to P & S in 1974. AT P & S, Kandel was the founding director of the Center for Neurobiology and Behavior, a position he held from 1974 to 1983, when he became University Professor.

Kandel studies the neurobiology of behavior and learning. In particular, he has sought to determine on the cellular and molecular level how the brain acquires new information about the environment, stores it in the memory, and reflects it in behavior. By developing an experimentally advantageous invertebrate animal, the marine snail Aplysia, Kandel has been able to analyze the cellular and molecular mechanisms of three forms of learning -- habituation, sensitization, and classical conditioning -- as well as the short- and long-term memory for each of the three forms. Since these forms of learning in Aplysia are strikingly similar to those found in higher animals, including humans, this research opens the way for the development of a realistic and empirical cellular neuropsychology that is already proving instructive for understanding the human brain.

The studies of Kandel and his colleagues have provided the first evidence that learning results in functional and structural changes in specific nerve cells and their interconnections. In addition, he has characterized the biophysical and biochemical mechanisms underlying the cellular changes that are produced by learning in a particular component -- the monosynaptic component of the gill withdrawal reflex. Here he has shown that each of the three forms of learning is related to the others both in mechanism and in cellular locus. In each form, the site of the learning can be pinpointed to the presynaptic component of this critical synapse. In each case, learning involves a change in transmitter release mediated by alterations in the calcium influx into a neuron's presynaptic terminals and in the handling of Ca^{++} within the terminals. Complex learning results from modifications of the same mechanistic building blocks that account for the simple forms, indicating that a unifying molecular grammar underlies a range of basic mental processes. Kandel's recent studies on short- and long-term memory have demonstrated that the long-term form involves the same locus of change and aspects of the same mechanism (an alteration in synaptic strength) as does the short-term process. But whereas short-term memory involves covalent modifications of pre-existing proteins, long-term memory requires new protein synthesis.

In addition to research articles, Professor Kandel has summarized his work in two books, The Cellular Basis of Behavior and A Cell Biological Approach to Learning. He, James H. Schwartz, and the neurobiology faculty at P & S have published a textbook entitled Principles of Neural Science.

In recognition of his research contributions, Kandel has received the Karl Spencer Lashley Prize in Neurobiology from the American Philosophical Society (1981), the Dickson Prize in Biology and Medicine from the University of Pittsburgh (1982), the New York Academy of Science Award in Biological and Medical Sciences (1982), the Albert Lasker Basic Medical Award for Research Contributions (1983) (shared with Vernon B. Mountcastle), the Lewis S. Rosenstiel Award for Distinguished Work in Basic Medical Research from Brandeis University (1984) (shared with Daniel Koshland), the Howard Crosby Warren Medal from the Society of Experimental Psychologists (1984), the AAMC Award for Distinguished Research in Biomedical Sciences (1985), a Special Presidential Commendation from the American Psychiatric Association (1986), the Gairdner International Award for Outstanding Achievement in Medical Science from the Gairdner Foundation in Canada (1987), the J. Murray Luck Award for Scientific Reviewing from the National Academy of Sciences (1988), and the Gold Medal for Scientific Merit from the Fondazione Giovanni Lorenzini in Milan, Italy (1988). He is a member of the National Academy of Sciences, The American Academy of Arts and Sciences, and the American Philosophical Society. He has received an honorary doctorate degree from Mount Sinai, Johns Hopkins, The State University of New York at Stony Brook, Hahnemann, and the Jewish Theological Seminary. From 1980 to 1981, he was president of the Society for Neuroscience.

AEROSPACE

JOHN L. ATWOOD
CLARENCE L. (KELLY) JOHNSON

The United States aerospace industry has been a pace setter since the Wright Brothers. While some industries are giving up ground to foreign competitors, 1988 is expected to be the sixth consecutive year of growth for the aerospace industry, whose shipments surpassed $100 billion for the first time in 1987. The industry is the leading positive contributor to the U.S. balance of trade among all merchandise industries, including agriculture. The industry employs over 800 thousand workers, about half directly in manufacturing.

John L. Atwood

Mr. Atwood's technical contributions to aviation, which span five decades, began when, as chief of structural design of Douglas Aircraft Company, his engineering analysis and component design were instrumental in the development of the DC-1, DC-2 and DC-3 series of aircraft. He moved to North American Aviation, Inc. as chief engineer and was responsible for the design and direction of the design for the BT-9, BT-14, and AT-6 trainers, P-51 fighter series, XB-21 experimental bomber, and B-25 Mitchell bomber. He was responsible for supervision and management of wartime production of over 40,000 P-51s. He was instrumental in development of the F-86, F-100, the XB-70, and the B-1, now in production. He undertook rocket engine development and has caused important contributions in electronics and navigation systems. He advanced to become the President and Chief Executive Officer of North American Rockwell Corporation. He risked large sums of company funds, without government committment in developing many products and systems. His engineering and management skills have made him one of the truly important men in the history of aerospace progress. He has also made extensive contributions of his time for national and community service.

Clarence L. (Kelly) Johnson

Clarence L. "Kelly" Johnson has played a leading role in world aviation, by designing more than 40 renowned aircraft and setting and attaining goals never before reached in the aircraft industry. He used his uncanny organizational and management skills to recruit the best talent available and establish tight but practical schedules. In addition to performing the original design work, he led the development programs following design, and was frequently the flight test engineer on the first flights of his aircraft. The aircraft include the P-38 Lightning (the twin engine-twin tailed WW II fighter), P-80 Shooting Star (the first U.S. production jet), the Constellation series of transport aircraft, the F-104 Starfighter (the first jet fighter to reach speeds of Mach 2), the U-2 (high-altitude reconnaissance plane), the SR-71 Blackbird (the world's fastest aircraft and highest flying jet). He founded Lockheed's "Skunk Works", which became a model for well-managed technology development programs. Kelly has received 35 of some of the highest awards that this and other countries can bestow.

Recipients of the 1988 National Medal of Science

William O. Baker

For pioneering studies of the complex relationships between the molecular structures and physical properties of polymers and for leadership in the disciplines of science and engineering.

Konrad E. Bloch

For discovery of the principle of suicide inhibitors for enzymes (substances that cause an enzyme to self-destruct) and for an example of that principle. His discovery points the way to the rational design of therapeutic agents.

D. Allan Bromley

For seminal work on nuclear molecules, for development of tandem accelerators and semi-conductor detectors for charged particles, for contributions to particle-gamma correlation studies, and for his role in founding the field of precision heavy-ion physics.

Michael S. Brown and Joseph L. Goldstein

For their historic discovery of the basic mechanisms controlling cholesterol metabolism, opening the way to a new pharmacologic approach to the treatment of cardiovascular disease, the leading cause of death and disability in the Western world.

PHOTOGRAPHIC EQUIPMENT AND SUPPLIES — HOWARD E. EDGERTON
EDWIN H. LAND

The photographic industry has sales of $19 billion and employs 93 thousand people. As with computers and scientific instruments, photographic tools are vital to almost every industry and field of science in addition to their artistic, historical, educational, journalistic, archival, medical, ecological, military, and family uses.

Howard E. Edgerton

Dr. Howard Edgerton invented the stroboscope in the 1930's and his pioneering research in stroboscopic photography laid the foundation for development of the modern electronic speed flash. In addition to providing a powerful research tool for study of moving machinery and industrial processes, his stopped-motion photographs of high speed events such as bullets in flight, light bulbs shattering, and athletes in action have been seen by millions of people. He and two of his students founded EG&G, a company which employees 22,000 people working in more 170 high technology markets. He has made major contributions to underwater photography and exploration. Among his many honors and awards are the National Medal of Science (1973) and the Medal of Freedom (1946).

technology

Not given half enough publicity

Edwin H. Land

Dr. Land invented a plastic material that absorbed light of a specific polarization. When he was unable to find a company that would market his invention, he founded his own company in 1937 to make polarizers for sunglasses and other optical shields. During World War II, he conceived of the idea of a camera that would produce developed pictures shortly after they were taken. The first instant camera was produced in 1948. Today, Polaroid dominates the technology and marketing of instant photography throughout the world. Dr. Land now holds 533 U.S. Patents, some of which were recently upheld in an infringement case involving Kodak. By the time Dr. Land stepped down from his positions as president, chairman of the board, and director of research, the company had annual sales of nearly $1.5 billion and employed 13,000 employees.

CURRICULUM VITAE

Rosalyn S. Yalow, Ph.D. Date of Birth: 7/19/21

A.B.	- Hunter College, N.Y.C. - Physics and Chemistry	-1941
M.S.	- Univ. of Illinois, Urbana, Illinois - Physics	-1942
Ph.D.	- Univ. of Illinois, Urbana, Illinois - Physics	-1945
D. Sc. (Hon)	- Univ. of Illinois, Chicago, Illinois	-1974
D. Sc. (Hon)	- Philadelphia College of Pharmacy & Science, Pa.	-1976
D. Sc. (Hon)	- New York Medical College, N.Y.	-1976
D. Sc. (Hon)	- The Medical College of Wisconsin, Milwaukee, Wis.	-1977
D. Sc. (Hon)	- Yeshiva University, New York, N.Y.	-1977
D. Hum. Lett. (Hon)	- Hunter College, New York, N.Y.	-1978
D. Hum. Lett. (Hon)	- Sacred Heart University, Bridgeport, Conn.	-1978
D. Sc. (Hon)	- Southampton College, Southampton, N.Y.	-1978
D. Sc. (Hon)	- Bucknell University, Lewisburg, Pa.	-1978
D. Sc. (Hon)	- Princeton University, Princeton, N.J.	-1978
D. Sc. (Hon)	- Jersey City State College, Jersey City, N.J.	-1979
D. Sc. (Hon)	- The Medical College of Pa., Phila., Pa.	-1979
D. Hum. Lett. (Hon)	- St. Michael's College, Winooski Park, Vt.	-1979
D. Honoris Causa	- Universite Claude Bernard, Lyon, France	-1979
D. Hum. Lett. (Hon)	- The Johns Hopkins University, Baltimore, Md.	-1979
D. Sc. (Hon)	- Manhattan College, New York, N.Y.	-1979
D. Honoris Causa	- University of Rosario, Rosario, Argentina	-1980
D. Sc. (Hon)	- University of Vermont, Burlington, Vt.	-1980
D. Sc. (Hon)	- University of Hartford, West Hartford, Conn.	-1980
D. Sc. (Hon)	- Rutgers University, New Brunswick, N.J.	-1980
D. Sc. (Hon)	- Rensselaer Polytechnic Institute, Troy, N.Y.	-1981
D. Med. Sc. (Hon)	- Medical University of South Carolina, Charleston, S.C.	-1981
D. Sc. (Hon)	- St. Lawrence University, Canton, N.Y.	-1981
D. Sc. (Hon)	- Colgate University, Hamilton, N.Y.	-1981
D. Sc. (Hon)	- University So. California, Los Angeles, Calif.	-1981
D. Sc. (Hon)	- Clarkson College, Potsdam, N.Y.	-1982
D. Sc. (Hon)	- University of Maryland Baltimore, Cantonsville, Md.	-1982
LLD (Hon)	- Beaver College, Glenside, Pa.	-1982
D. Sc. (Hon)	- University of Miami, Coral Gables. Fla.	-1983
D. Sc. (Hon)	- St. Mary's College, Notre Dame, Ind.	-1983
D. Sc. (Hon)	- Washington University, St. Louis, Mo.	-1983
D. Sc. (Hon)	- Adelphi University, Garden City, L.I., N.Y.	-1983
D. Sc. (Hon)	- The University of Alberta, Edmonton, Canada	-1983
D. Honoris Causa	- The University of Ghent, Belgium	-1984
D. Hum. Lett. (Hon)	- Columbia Univ., N.Y.	-1984
D. Sc. (Hon)	- University of the State of N.Y.	-1984
D. Sc. (Hon)	- Tel Aviv Univ., Israel	-1985
D. Sc. (Hon)	- Claremont Univ., Claremont, Calif.	-1986
D. Sc. (Hon)	- Mills College, Oakland, Calif.	-1986
D.Phil.Honoris Causa	- Bar-Ilan Univ., Israel	-1987
D. Sc. (Hon)	- Cedar Crest College, Allentown, Pa.	-1988
D. Sc. (Hon)	- Drew Univ., Madison, N.J.	-1988
D. Sc. (Hon)	- Lehigh Univ., Bethlehem, Pa.	-1988

POSITIONS HELD:

Asst. in Physics, Univ. of Illinois	1941-1943
Instructor, Univ. of Illinois	1944-1945
Lecturer and Temp. Asst. Prof. in Physics, Hunter College, N.Y.C.	1946-1950
Consultant, Radioisotope Unit, VAH, Bronx, N.Y.	1947-1950
Consultant, Lenox Hill Hospital, N.Y.C.	1952-1962
Diplomate, American Board of Radiology	1950-
Physicist and Asst. Chief, Radioisotope Service, VAH, Bronx, N.Y.	1950-1970
Acting Chief, Radioisotope Service, VAH, Bronx, N.Y.	1968-1970
Research Service Professor, Mt. Sinai Sch. of Med., CUNY	1968-1974

Radioimmunoassay Reference Laboratory 1969-
Nuclear Medicine Service, VAH, Bronx, N.Y. 1970-1980
Medical Investigator, VA 1972-
ctor, Solomon A. Berson Research Laboratory, VAH, Bronx, N.Y. 1973-
tinguished Service Professor, Mt. Sinai Sch. of Med., CUNY 1974-1979
stinguished Professor-At-Large, Albert Einstein Col. of Med., Yeshiva University, N.Y. 1979-1985
Chairman, Department of Clinical Sciences, Montefiore Medical Ctr, Bx,NY 1980-1985
Professor Emeritus, Albert Einstein Col. of Med., Yeshiva Univ., N.Y. 1985-
Solomon A. Berson Distinguished Professor-At-Large, Mt. Sinai Sch. of Med., CUNY 1986-

SOCIETIES:
Fellow, N.Y. Acad. of Science; Radiation Research Soc.; American Assoc. of Physicists in Med.; Assoc. Fellow in physics, American College of Radiology; Biophysical Soc.; American Diabetes Assoc.; American Physiological Soc.; Endocrine Soc.; Soc. of Nuclear Medicine

OTHER ACTIVITIES:
National Committee on Radiation Protection Subcommittee 13 - 1975
Secretary, U.S. National Committee on Medical Physics - 1963 - 1967
Chairman, Biophysics Division, N.Y. Academy of Sciences - 1964 - 1965
Editorial Board Endocrinology - 1967 - 1972
Medical Advisory Board, National Pituitary Agency - 1968 - 1971
Endocrinology Study Section - National Institutes of Health (NIH) - 1969 - 1972
IAEA Expert, Instituto Energia Atomica, Sao Paulo, Brazil, Dec. 1970
Consultant, Subcommittee on Human Applications of Radioactive Materials, N.Y.C. Dept. of Health - 1972 - present
Board of Scientific Counselors, NIAMDD, NIH - 1972 - 1975, 1978 - 1981
Task Force on Immunology and Disease, NIAID, NIH - 1972 - 1973
Co-Editor, Hormone and Metabolic Research - 1973 - present
Member, Committee for Evaluation of the NPA, - Nat'l Research Council - 1973 - 1974
Endocrine Society: Council, 1974 - 1980, President-elect, 1977-1978, President, 1978 - 1979
Member, Board of Directors, N.Y. Diabetes Assoc. - 1974
Member of the Editorial Advisory Council, Acta Diabetologica Latina - 1975 - 1977
Editorial Board, The Mount Sinai Journal of Medicine - 1976 - 1979
Editorial Board Diabetes - 1976-1979, 82-
WHO Consultant, Radiation Medicine Center, Bombay, India - Jan. 1978
Member of the Editorial Advisory Board for Encyclopaedia Universalis - 1978

HONORS:
NOBEL PRIZE IN PHYSIOLOGY OR MEDICINE - 1977
Member of the National Academy of Sciences - 1975
Member of the American Academy of Arts and Sciences - 1979
Foreign Associate of the French Academy of Medicine - 1981
Designation of Berson Laboratory as American Nuclear Society Nuclear Historic Landmark - 1986

HONORARY MEMBERSHIPS:
Sigma Xi; Phi Beta Kappa; Sigma Pi Sigma; Pi Mu Epsilon; Sigma Delta Epsilon;
Harvey Society (Hon. Member); Clinical Society of the NY Diabetes Assoc. (Hon. Fellow);
Medical Association of Argentina (Hon. Member);
Diabetes Society of Argentina (Hon. Member);
American College of Nuclear Physicians (Hon. Member);
The New York Academy of Medicine (Hon. Fellow);
The New York Academy of Sciences (Hon. Fellow);
American Gastroenterological Assoc. (Hon. Member);
N.Y. Roentgen Society (Hon. Membership);

Norman F. Ramsey -- Higgins Professor of Physics, Harvard University, Cambridge, Massachusetts

Norman Ramsey was born in 1915 in Washington, D. C. He received his A.B. and M.A. from Columbia University and similar degrees from Cambridge University. In 1940 he received a Ph.D. from Columbia University for molecular beam studies of rotational magnetic moments of molecules. He was awarded an Sc.D. by Cambridge University in 1954 and by Oxford University in 1973 as well as honorary D.Sc.'s from Case-Western Reserve University and Middlebury College. After temporary periods at the Carnegie Institution of Washington, the University of Illinois, the MIT Radiation Laboratory and Los Alamos, he became an Associate Professor at Columbia University. He was Executive Secretary of the group scientists who established Brookhaven National Laboratory and was the first Chairman of its Physics Department. Since 1947 he has been at Harvard University where he is Higgins Professor of Physics.

Norman Ramsey's experimental work has ranged from molecular beams to particle physics and has concentrated on precision measurements of the electric and magnetic properties of nucleons, nuclei, atoms and molecules. He and his associates discovered the deuteron electric quadrupole moment, have studied proton-proton and electron-proton scattering and have measured many nuclear magnetic moments including those of the proton, neutron, and deuteron. He has studied nuclear interactions in molecules and the electron distribution within molecules, has proposed the first successful theories of the chemical shift in NMR and of electron coupled spin-spin interactions in molecules and has developed the theory of thermodynamics at negative absolute temperatures. He and his associates have invented high precision methods of molecular beam spectroscopy including the atomic hydrogen maser and have set low limits to the electric dipole moment of the neutron as a test of time reversal symmetry. He and his associates have observed for the first time parity violating spin rotations of neutrons passing through matter. Norman Ramsey's books include Experimental Nuclear Physics, Nuclear Moments, Molecular Beams and Quick Calculus.

Norman Ramsey has been a Guggenheim Fellow and was the George Eastman Professor at Oxford University in 1973-74. He was Chairman of the Physics Section of the American Association for the Advancement of Science 1977-78 and President of the American Physical 1978-79. From 1966 to 1981 he was President of Universities Research Association, which operates the Fermi National Accelerator Laboratory. He has been a Trustee of the Carnegie Endowment for International Peace since 1962 and of Rockefeller University since 1977. Since 1980 he has been Chairman of the Board of Govenors of the American Institute of Physics and since 1982 he has been Vice President of the United Chapters of Phi Beta Kappa.

Norman Ramsey is a member of the American Physical Society, the Institute of Electrical and Electronics Engineers, the American Philosophical Society, the American Academy of Arts and Sciences and the National Academy of Sciences. He received the Presidential Certificate of Merit in 1950, the E. O. Lawrence Award in 1960, the Davisson-Germer Prize in 1974, the 1980 Columbia Award for Excellence in Science, the IEEE Centennial Medal and the IEEE Medal of Honor in 1984, the 1985 Monie Ferst Award of Sigma Xi, the Rabi Prize in 1985, and the 1985 Rumford Premium.

October 1985

George W. Housner

For profound and decisive influence on the development of earthquake engineering worldwide. His research guided the development of earthquake engineering and have had impact on other major disciplines.

Eric R. Kandel

For discovering the first cellular and molecular mechanisms contributing to understanding of simple learning and memory and for providing a stimulus to research that promises to lead to greater understanding of mental processes.

Joseph B. Keller

For contributing to the geometrical theory of diffraction -- a major extension of geometrical optics which succeeds, after centuries, in adding the physics of diffraction to the simple ray concepts of optics and other wave motions.

Walter Kohn

For contributing to the theory of the electronic structure of solids, including the effective mass approach to defects in semiconductors, the KKR method of band structure, and the density functional approach to the many-electron problem.

D. Allan Bromley is the Henry Ford II Professor of Physics and Director of the AW Wright Nuclear Structure Laboratory at Yale University. Born in Westmeath, Ontario, Canada, he received his undergraduate education in the Faculty of Engineering at Queen's University, in Canada, receiving the B.Sc. degree with highest honors in 1948. He received the M.Sc. degree from Queen's University in 1950 and the Ph.D degree from the University of Rochester in 1952, both degrees in nuclear physics. He subsequently has been awarded 10 honorary doctorates from universities in Canada, France, Germany, Italy, South Africa, and the United States.

Remaining on the University of Rochester faculty from 1952-1955, he moved to the Chalk River Laboratories of Atomic Energy of Canada where he was Senior Scientific Officer and Section Head. In 1960 he was appointed to a professorship in physics at Yale; he served as chairman of Yale's physics department from 1970 to 1977, founded the Wright Laboratory in 1963, and has been its Director since that time, and was appointed to the Henry Ford II chair in 1972.

One of the world's leading nuclear physicists, he has carried out pioneering studies on both the structure and dynamics of nuclei and is considered the father of modern heavy ion science, one of the major areas of nuclear science. He has also played major roles in the development of accelerators, of detection systems, and in computer based data acquisition and analysis systems. An outstanding teacher, over the past two decades, his Laboratory at Yale has graduated more Ph.D's in experimental nuclear physics than any other institution, worldwide. He has published over 450 papers in science and technology and edited eighteen books.

Apart from his research and teaching at Yale, he has played an active role in both national and international science and science policy. As chairman of the National Academy's Physics Survey in the early 1970s, he contributed in a central way to charting the future of that science in the subsequent decade. As President of the American Association for the Advancement of Science—the world's largest scientific society—and of the International Union of Pure and Applied Physics—the world coordinating body for that science—he has been one of the leading spokesmen for US science and for international scientific cooperation.

In recent years he has served as chairman of the US side of both the Gandhi-Reagan Indo/US and the Sarney-Reagan Brazil/US Science and Technology Initiatives and is a member of the US/USSR Joint Coordinating Committee for Research on the Fundamental Properties of Matter and of the Council on Foreign Relations.

He is a charter member of the White House Science Council, the senior US advisory group in science and technology policy.

He is married to the former Patricia J. Brassor and they have two children, David John and Karen Lynn.

DAVID PACKARD

We could sort of categorize each of the previous recipients in their respective industry boxes. But David Packard will not be pigeon holed unless we call him one of the deans of technology management and practice.

David Packard

David Packard was co-founder of Hewlett-Packard and eventually its Chairman and CEO. The company, 58th in the Fortune 500 in 1986, is based almost solely on technology. In addition, as Deputy Secretary of Defense, he was greatly concerned with the technological aspects of defense and instituted the "fly before you buy" policy. He has chaired important, technology related, government committees, including the Panel on the Health of U.S. Colleges and Universities, the Federal Laboratory Review Panel, The President's Blue Ribbon Commission on Defense Management, and the U.S. Japan Advisory Commission.

Not only big 'industrialists' he helps out his government whenever we ask!

Milton Friedman

For theoretical contributions, and for application of the principles of scientific, empirical, and statistical methods to economics and the social sciences, and to problems critical to the nation in general.

Ralph E. Gomory

For contributions to the mathematics of discrete optimization; for bringing to a leading position one of industry's most significant research establishments; and for contributions to public and private scientific enterprise.

Willis M. Hawkins

For contributions -- through invention, development, management, and advice -- to the technical health and competitive status of U. S. aeronautical products, deterrent weapons systems, and space prowess.

Maurice R. Hilleman

For brilliant discoveries in basic research and inventiveness in creating vaccines that are the foundation for control of infectious diseases, preventing death and disability in millions of persons worldwide.

and pain. And like each of you, he knows that dreams realized make possible even bigger dreams.

Today, we celebrate dreams that you are making possible -- dreams that will keep America competitive, raise our standard of living, and improve our quality of life. Your dreams presage a new Golden Age of information, understanding, and technology. And show how creativity comes from the human heart and mind.

In closing, then, let me first salute your achievements and your commitment. Many of you have been teachers. Some have served in government. All have shown that America has no natural resource more precious than her intellectual resources.

Next, let me promise you: Our Administration will do its part. We know that scientific knowledge must be renewed and expanded. And so we will continue the American tradition of strong, broad-based support for basic research and R and D in the areas of science and technology.

Our approach will be balanced, and fair: It includes both "large science and technology projects" as well as "small science principal investigator" funding.

In "large science and technology," look at the opportunities ahead: The Superconducting Super Collider and the Human Genome Initiatives. Or Space Station Freedom, which will lead us toward the stars. And the "small science" potential is no less dazzling: We want to stay on the path to doubling the National Science Foundation budget if Congress will cooperate. And give our youth a special incentive to excel in science, mathematics,

and engineering through our new program of National Science Scholars.

Ladies and gentlemen, these priorities constitute an investment in the future -- strengthening the education which is crucial to that future.

This investment in education is vital if America is to remain the leader of a very competitive world -- both intellectually and commercially. And if science and technology are to uplift this generation. As you already have. And inspire generations to come. As you must. For you are America's true pioneers. Dreaming the dreams that enhance our energy and health, medicine and productivity, national security and education. The dreams that your remarkable deeds are helping to come true.

Again, my heart-felt congratulations on behalf of each and every citizen. And now it is my great pleasure to introduce Allan Bromley and my Secretary of Commerce, Bob Mosbacher, who will present you with America's highest technological and scientific award. But, you know, I like my end of the bargain. I get to shake your hands.

Thank you very much, God bless you, and God bless America.

# # # #

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

NOTICE:

Enclosed are comments from staff members of the Office of Management and Budget (OMB). Such comments do not necessarily represent the official position of the Director of OMB or of the Office of Management and Budget. If you wish to have the Director's personal comments, please let me know -- and contact me if you have any questions.

David J. Haun
Executive Assistant
to the Director

Document No. 081507SS

WHITE HOUSE STAFFING MEMORANDUM

DATE: 10/14/89 ACTION/CONCURRENCE/COMMENT DUE BY: MONDAY, OCT. 16, NOON

SUBJECT: PRESIDENTIAL REMARKS: SCIENCE AND TECHNOLOGY AWARDS CEREMONY
THE EAST ROOM
WEDNESDAY, OCTOBER 18, 1989 (10/13 - draft three)

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☐	☑	MCCLURE	☑	☐
SUNUNU	☐	☑	NEWMAN	☐	☐
SCOWCROFT	☑	☐	PORTER	☑	☐
DARMAN	☑	☐	ROGICH	☑	☐
BATES	☑	☐	UNTERMEYER	☐	☐
CARD	☐	☑	ROGERS	☐	☑
CICCONI	☐	☑	WINSTON	☐	☑
DEMAREST	☑	☐	PINKERTON	☑	☐
FITZWATER	☐	☑	BROMLEY	☑	☐
GRAY	☑	☐	FIRESTONE	☐	☑
HAGIN	☐	☐	_____	☐	☐

REMARKS:

Please forward any comments directly to Chriss Winston, Room 122, x2930, no later than NOON Monday, October 16, with a copy to my office. Thank you.

RESPONSE: See comments

James W. Cicconi
Assistant to the President
and Deputy to the Chief of Staff
Ext. 2702

(Smith/Blessey)
Draft Three
October 13, 1989
TECH

1989 OCT 13 PM 6:46

PRESIDENTIAL REMARKS: SCIENCE & TECHNOLOGY
THE EAST ROOM
WEDNESDAY, OCTOBER 18, 1989

Let me welcome you to the White House. And on behalf of ~~each~~ every American, thank you for your magnificent efforts on behalf of this Nation and the world.

Molli x3060

It is indeed an honor to address this singularly diverse and distinguished group of Americans. And to present America's highest honor in the areas of science and technology: The National Medal of Science and the National Medal of Technology.

Three decades ago the National Medal of Science was created by Congress. Its purpose was to recognize individuals for their "outstanding contributions to knowledge in the physical, biological, mathematical, or engineering sciences."

Then, nine years ago, the National Medal of Technology was established. Its purpose was to "recognize scientists and engineers for projects that improve the well-being of the United States through the development or application of technology."

Over the past several decades, these contributions and projects have helped make America a richer, better place. New types of grain and fertilizers have spurred greater crop yields. Diagnostic technology has helped combat disease. Progress in biology and biotechnology has begun unmasking the secrets of heredity. And the work goes on -- through pioneers, like you.

For ours is a pioneering heritage -- from Eli Whitney to Lee De Forest to the Salk vaccine for polio. And this year's 27 recipients of the Science and Technology medals embody the best and brightest of that heritage -- Americans inspired by the belief that the trailblazers of today will be the heroes of tomorrow.

Think of Professor Richard Bernstein, whose work in molecular beams has helped shape modern chemistry. Or Professor Emeritus Katherine Esau, enriching the study of the botanical sciences. Or Jay Forrester and Robert Everett, helping technologies and computers enhance America's defense.

Since the 1940s, for instance, Robert Sharp has overcome physical and logistical barriers to illumine our knowledge of planetary surfaces. He's climbed glaciers, and felt permafrost -- dared mountains and ravines. Like each of you, he has shown that progress often comes neither quickly nor cheaply. It demands devotion and sacrifice. It knows adversity and pain. And like each of you, he knows that dreams realized make possible even bigger dreams.

Today, we celebrate those dreams -- dreams that you are making possible. And I only wish I had time to mention each recipient. For all of your dreams will keep America competitive. Dreams that will raise our standard of living -- and, moreover, our quality of life. They are dreams that presage a new Golden Age of information, understanding, and technology. Dreams that show how creativity comes from the human heart and mind.

In closing, then, let me first salute your achievements and your commitment. Many of you have been teachers. Some have served in government. All have shown that America has no natural resource more precious than her intellectual resources.

Next, let me promise you: Our Administration will do its part. We know that scientific knowledge must be renewed and expanded. And so we will continue the American tradition of strong, broad-based support for research and development in all areas of science and technology.

Our approach will be balanced, and fair: It includes both "large science and technology projects" as well as "small science principal investigator" funding.

In "large science and technology," look at the opportunities ahead: The Superconducting Super Collider and the Human Genome initiatives. Or Space Station Freedom, which will lead us toward the stars. And the "small science" potential is no less dazzling: We want to ~~double~~ stay on the path to doubling the National Science Foundation budget ~~over the next five years~~ if Congress will cooperate. And give our youth a special incentive to excel in science, mathematics, and engineering through our new program of National Science Scholars.

Grady 4844

Ladies and gentlemen, these new initiatives -- this investment -- can help science and technology help America triumph in the future. Uplifting this generation. And inspiring generations to come. For you are America's true pioneers. Dreaming the dreams that enhance our energy and health, medicine

These priorities constitute an investment in the future -- and investment in the future must be our watchwords if America is to remain the leader of a very competitive world — both intellectually and commercially.

and productivity, national security and education. The dreams that your remarkable deeds are helping to come true.

Again, my heart-felt congratulations on behalf of each and every citizen. And now it is my great pleasure to introduce my ~~Advisor~~ Assistant for Science and Technology, Allan Bromley, and my Secretary of Commerce, Bob Mosbacher, who will present you with America's highest technological and scientific achievement. But, you know, I like my end of the bargain. I get to shake your hands.

Thank you very much, God bless you, and God bless America.

# # # #

(Smith/Blessey)
Draft Four
October 16, 1989
TECH

PRESIDENTIAL REMARKS: SCIENCE & TECHNOLOGY
THE EAST ROOM
WEDNESDAY, OCTOBER 18, 1989
2:00 P.M.

Dr. Bromley, Secretary Mosbacher, Secretaries Derwinski and Cavazos, Senators Garn and Pressler, Congressmen Roe, Walker, Walgren, and LaFalce, Award-Recipients and other distinguished scientists, ladies and gentlemen, friends.

Let me welcome you to the White House. And on behalf of every American, thank you for your magnificent efforts on behalf of this Nation and the world.

It is indeed an honor to address this singularly diverse and distinguished group of Americans. And to present America's highest honor in the areas of science and technology: The National Medal of Science and the National Medal of Technology.

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Dreams that will raise our standard of living -- and, moreover, our quality of life. They are dreams that presage a new Golden Age of information, understanding, and technology. Dreams that show how creativity comes from the human heart and mind.

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Next, let me promise you: Our Administration will do its part. We know that scientific knowledge must be renewed and expanded. And so we will continue the American tradition of strong, broad-based support for basic research and R and D in the areas of science and technology.

Our approach will be balanced, and fair: It includes both "large science and technology projects" as well as "small science principal investigator" funding.

In "large science and technology," look at the opportunities ahead: The Superconducting Super Collider and the Human Genome Initiatives. Or Space Station Freedom, which will lead us toward the stars. And the "small science" potential is no less dazzling: We want to stay on the path to doubling the National Science Foundation budget if Congress will cooperate. And give our youth a special incentive to excel in science, mathematics, and engineering through our new program of National Science Scholars.

Ladies and gentlemen, these priorities constitute an investment in the future -- strengthening the education which is crucial to that future. This investment in education is vital if America is to remain the leader of a very competitive world -- both intellectually and commercially. And if science and technology are to uplift this generation. As you already have. And inspire generations to come. As you must. For you are America's true pioneers. Dreaming the dreams that enhance our energy and health, medicine and productivity, national security and education. The dreams that your remarkable deeds are helping to come true.

Again, my heart-felt congratulations on behalf of each and every citizen. And now it is my great pleasure to introduce my Assistant for Science and Technology, Allan Bromley, and my Secretary of Commerce, Bob Mosbacher, who will present you with America's highest technological and scientific award. But, you know, I like my end of the bargain. I get to shake your hands.

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THE EAST ROOM
WEDNESDAY, OCTOBER 18, 1989 (10/13 - draft three

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VICE PRESIDENT	☐	☑	MCCLURE	☑	☐
SUNUNU	☐	☑	NEWMAN	☐	☐
SCOWCROFT	☑	☐	PORTER	☑	☐
DARMAN	☑	☐	ROGICH	☑	☐
BATES	☑	☐	UNTERMEYER	☐	☐
CARD	☐	☑	ROGERS	☐	☑
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DEMAREST	☑	☐	PINKERTON	☑	☐
FITZWATER	☐	☑	BROMLEY	☑	☐
GRAY	☑	☐	FIRESTONE	☐	☑
HAGIN	☐	☐	_____	☐	☐

REMARKS:

Please forward any comments directly to Chriss Winston, Room 122, x2930, no later than NOON Monday, October 16, with a copy to my office. Thank you.

89 OCT 16 P12:24

RESPONSE:

~~[redacted]~~ (10/16/89)

Only comment is that there should be a link made in these remarks to the more ~~general~~ general issue of Education. See attempt to make link on p. 3.

James W. Cicconi
Assistant to the President
and Deputy to the Chief of Staff
Ext. 2702

(Smith/Blessey)
Draft Three
October 13, 1989
TECH

1989 OCT 13 PM 6:46

PRESIDENTIAL REMARKS: SCIENCE & TECHNOLOGY
THE EAST ROOM
WEDNESDAY, OCTOBER 18, 1989

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Today, we celebrate those dreams -- dreams that you are making possible. And I only wish I had time to mention each recipient. For all of your dreams will keep America competitive. Dreams that will raise our standard of living -- and, moreover, our quality of life. They are dreams that presage a new Golden Age of information, understanding, and technology. Dreams that show how creativity comes from the human heart and mind.

We have ... this country nation's educational system. The fundamentals including basic math and science - must be emphasized. For this emphasis is the basis upon which

In closing, then, let me first salute your achievements and your commitment. Many of you have been teachers. Some have served in government. All have shown that America has no natural resource more precious than her intellectual resources.

Next, let me promise you: This Administration will do its part. We know that scientific knowledge must be renewed and expanded. And so We will continue the American tradition of strong, broad-based support for research and development in all areas of science and technology.

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Ladies and gentlemen, these new initiatives -- this investment -- can help science and technology help America triumph in the future. Uplifting this generation. And inspiring generations to come. For you are America's true pioneers. Dreaming the dreams that enhance our energy and health, medicine

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THE EAST ROOM
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	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☐	☑	MCCLURE	☑	☐
SUNUNU	☐	☑	NEWMAN	☐	☐
SCOWCROFT	☑	☐	PORTER Working on it.	☑	☐
DARMAN	☑	☐	ROGICH	☑	☐
BATES	☑	☐	UNTERMEYER	☐	☐
CARD	☐	☑	ROGERS	☐	☑
CICCONI	☐	☑	WINSTON	☐	☑
DEMAREST	☑	☐	PINKERTON Not in office	☑	☐
FITZWATER	☐	☑	BROMLEY coming	☑	☐
GRAY	☑	☐	FIRESTONE 3840	☐	☑
HAGIN	☐	☐		☐	☐

REMARKS:

Please forward any comments directly to Chriss Winston, Room 122, x2930, no later than NOON Monday, October 16, with a copy to my office. Thank you.

RESPONSE:

89 OCT 16 A8:39

James W. Cicconi
Assistant to the President
and Deputy to the Chief of Staff
Ext. 2702

(Smith/Blessey)
Draft Three
October 13, 1989
TECH

1989 OCT 13 PM 6:46

PRESIDENTIAL REMARKS: SCIENCE & TECHNOLOGY
THE EAST ROOM
WEDNESDAY, OCTOBER 18, 1989

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education comment

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Ladies and gentlemen, these new initiatives -- this investment -- can help science and technology help America triumph in the future. Uplifting this generation. And inspiring generations to come. For you are America's true pioneers. Dreaming the dreams that enhance our energy and health, medicine

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Thank you very much, God bless you, and God bless America.

# # # #

THE WHITE HOUSE

WASHINGTON

October 16, 1989

MEMORANDUM FOR CHRISS WINSTON

FROM: ROGER B. PORTER RBP

SUBJECT: Presidential Remarks: Science and Technology Awards Ceremony The East Room

The remarks are well written and properly praise these distinguished Americans. We have one comment. We suggest changing the last sentence of the second paragraph on page three. Our modification is noted in the attached draft. This change reflects the importance we place on basic research in addition to R&D.

cc: James W. Cicconi

Document No. 081507SS

WHITE HOUSE STAFFING MEMORANDUM

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THE EAST ROOM
WEDNESDAY, OCTOBER 18, 1989 (10/13 - draft three)

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James W. Cicconi
Assistant to the President
and Deputy to the Chief of Staff
Ext. 2702

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PRESIDENTIAL REMARKS: SCIENCE & TECHNOLOGY
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WEDNESDAY, OCTOBER 18, 1989

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CARD	☐	✓	ROGERS	☐	✓
CICCONI	☐	✓	WINSTON	☐	✓
DEMAREST	✓	☐	PINKERTON	✓	☐
FITZWATER	☐	✓	BROMLEY	✓	☐
GRAY	✓	☐	FIRESTONE	☐	✓
HAGIN	☐	☐		☐	☐

REMARKS:

Please forward any comments directly to Chriss Winston, Room 122, x2930, no later than NOON Monday, October 16, with a copy to my office. Thank you.

RESPONSE: OK. S.R.

89 OCT 16 P1:16

James W. Cicconi
Assistant to the President
and Deputy to the Chief of Staff
Ext. 2702

(Smith/Blessey)
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For ours is a pioneering heritage -- from Eli Whitney to Lee De Forest to the Salk vaccine for polio. And this year's 27 recipients of the Science and Technology medals embody the best and brightest of that heritage -- Americans inspired by the belief that the trailblazers of today will be the heroes of tomorrow.

Think of Professor Richard Bernstein, whose work in molecular beams has helped shape modern chemistry. Or Professor Emeritus Katherine Esau, enriching the study of the botanical sciences. Or Jay Forrester and Robert Everett, helping technologies and computers enhance America's defense.

Since the 1940s, for instance, Robert Sharp has overcome physical and logistical barriers to illumine our knowledge of planetary surfaces. He's climbed glaciers, and felt permafrost -- dared mountains and ravines. Like each of you, he has shown that progress often comes neither quickly nor cheaply. It demands devotion and sacrifice. It knows adversity and pain. And like each of you, he knows that dreams realized make possible even bigger dreams.

Today, we celebrate those dreams -- dreams that you are making possible. And I only wish I had time to mention each recipient. For all of your dreams will keep America competitive. Dreams that will raise our standard of living -- and, moreover, our quality of life. They are dreams that presage a new Golden Age of information, understanding, and technology. Dreams that show how creativity comes from the human heart and mind.

In closing, then, let me first salute your achievements and your commitment. Many of you have been teachers. Some have served in government. All have shown that America has no natural resource more precious than her intellectual resources.

Next, let me promise you: Our Administration will do its part. We know that scientific knowledge must be renewed and expanded. And so we will continue the American tradition of strong, broad-based support for research and development in all areas of science and technology.

Our approach will be balanced, and fair: It includes both "large science and technology projects" as well as "small science principal investigator" funding.

In "large science and technology," look at the opportunities ahead: The Superconducting Super Collider and the Human Genome initiatives. Or Space Station Freedom, which will lead us toward the stars. And the "small science" potential is no less dazzling: We want to double the National Science Foundation budget over the next five years. And give our youth a special incentive to excel in science, mathematics, and engineering through our new program of National Science Scholars.

Ladies and gentlemen, these new initiatives -- this investment -- can help science and technology help America triumph in the future. Uplifting this generation. And inspiring generations to come. For you are America's true pioneers. Dreaming the dreams that enhance our energy and health, medicine

and productivity, national security and education. The dreams that your remarkable deeds are helping to come true.

Again, my heart-felt congratulations on behalf of each and every citizen. And now it is my great pleasure to introduce my Advisor for Science and Technology, Allan Bromley, and my Secretary of Commerce, Bob Mosbacher, who will present you with America's highest technological and scientific achievement. But, you know, I like my end of the bargain. I get to shake your hands.

Thank you very much, God bless you, and God bless America.

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THE WHITE HOUSE
WASHINGTON

October 16, 1989

MEMORANDUM FOR CHRISS WINSTON
DEPUTY ASSISTANT TO THE PRESIDENT
FOR COMMUNICATIONS

FROM: NELSON LUND
ASSOCIATE COUNSEL TO THE PRESIDENT

SUBJECT: Draft Presidential Remarks: Science and Technology Awards Ceremony

At the request of James W. Cicconi, Counsel's office has reviewed the captioned remarks. We have no legal objections. We have, however, marked one suggested change on page 4 of the attached hard copy.

We appreciate having had the opportunity to review these remarks.

Attachment

cc: James W. Cicconi

(Smith/Blessey)
Draft Three
October 13, 1989
TECH

1989 OCT 13 PM 6:46

PRESIDENTIAL REMARKS: SCIENCE & TECHNOLOGY
THE EAST ROOM
WEDNESDAY, OCTOBER 18, 1989

Let me welcome you to the White House. And on behalf of each American, thank you for your magnificent efforts on behalf of this Nation and the world.

It is indeed an honor to address this singularly diverse and distinguished group of Americans. And to present America's highest honor in the areas of science and technology: The National Medal of Science and the National Medal of Technology.

Three decades ago the National Medal of Science was created by Congress. Its purpose was to recognize individuals for their "outstanding contributions to knowledge in the physical, biological, mathematical, or engineering sciences."

Then, nine years ago, the National Medal of Technology was established. Its purpose was to "recognize scientists and engineers for projects that improve the well-being of the United States through the development or application of technology."

Over the past several decades, these contributions and projects have helped make America a richer, better place. New types of grain and fertilizers have spurred greater crop yields. Diagnostic technology has helped combat disease. Progress in biology and biotechnology has begun unmasking the secrets of heredity. And the work goes on -- through pioneers, like you.

For ours is a pioneering heritage -- from Eli Whitney to Lee De Forest to the Salk vaccine for polio. And this year's 27 recipients of the Science and Technology medals embody the best and brightest of that heritage -- Americans inspired by the belief that the trailblazers of today will be the heroes of tomorrow.

Think of Professor Richard Bernstein, whose work in molecular beams has helped shape modern chemistry. Or Professor Emeritus Katherine Esau, enriching the study of the botanical sciences. Or Jay Forrester and Robert Everett, helping technologies and computers enhance America's defense.

Since the 1940s, for instance, Robert Sharp has overcome physical and logistical barriers to illumine our knowledge of planetary surfaces. He's climbed glaciers, and felt permafrost -- dared mountains and ravines. Like each of you, he has shown that progress often comes neither quickly nor cheaply. It demands devotion and sacrifice. It knows adversity and pain. And like each of you, he knows that dreams realized make possible even bigger dreams.

Today, we celebrate those dreams -- dreams that you are making possible. And I only wish I had time to mention each recipient. For all of your dreams will keep America competitive. Dreams that will raise our standard of living -- and, moreover, our quality of life. They are dreams that presage a new Golden Age of information, understanding, and technology. Dreams that show how creativity comes from the human heart and mind.

In closing, then, let me first salute your achievements and your commitment. Many of you have been teachers. Some have served in government. All have shown that America has no natural resource more precious than her intellectual resources.

Next, let me promise you: Our Administration will do its part. We know that scientific knowledge must be renewed and expanded. And so we will continue the American tradition of strong, broad-based support for research and development in all areas of science and technology.

Our approach will be balanced, and fair: It includes both "large science and technology projects" as well as "small science principal investigator" funding.

In "large science and technology," look at the opportunities ahead: The Superconducting Super Collider and the Human Genome initiatives. Or Space Station Freedom, which will lead us toward the stars. And the "small science" potential is no less dazzling: We want to double the National Science Foundation budget over the next five years. And give our youth a special incentive to excel in science, mathematics, and engineering through our new program of National Science Scholars.

Ladies and gentlemen, these new initiatives -- this investment -- can help science and technology help America triumph in the future. Uplifting this generation. And inspiring generations to come. For you are America's true pioneers. Dreaming the dreams that enhance our energy and health, medicine

and productivity, national security and education. The dreams that your remarkable deeds are helping to come true.

Again, my heart-felt congratulations on behalf of each and every citizen. And now it is my great pleasure to introduce my Advisor for Science and Technology, Allan Bromley, and my Secretary of Commerce, Bob Mosbacher, who will present you with America's highest technological and scientific ~~achievement~~ awards. But, you know, I like my end of the bargain. I get to shake your hands.

Thank you very much, God bless you, and God bless America.

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THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release October 18, 1989

REMARKS BY THE PRESIDENT
TO NATIONAL MEDAL OF SCIENCE AND TECHNOLOGY RECIPIENTS

The East Room

2:09 P.M. EDT

THE PRESIDENT: Thank you very much. Secretary Mosbacher and Secretary Sullivan, Dr. Bromley and award-winning recipients and other distinguished scientists, ladies and gentlemen and friends, first, a welcome to the White House. And on behalf of every American, thank you for your magnificent efforts on behalf of this nation, and indeed the whole world.

It's an honor to address this singularly diverse and distinguished group of Americans and to present America's highest honor in the areas of science and technology -- the National Medal of Science and the National Medal of Technology.

Three decades ago the National Medal of Science was created by Congress, and its purpose was to recognize individuals for their outstanding contributions to knowledge in the physical, biological, mathematical or engineering sciences.

And then nine years ago the National Medal of Technology was established. Its purpose was to recognize scientists and engineers for projects that improve the well-being of the United States through the development or application of technology.

Over the past several decades these contributions and projects have helped make America a richer and better place. And new types of grain and fertilizers have spurred greater crop yields; diagnostic technology has helped combat disease; and progress in biology and biotechnology has begun unmasking the secrets of heredity, and the work goes on through pioneers like you.

For ours is a pioneering heritage. From Eli Whitney to Lee DeForest to the Salk vaccine for polio. And this year's 27 recipients of the Science and Technology Medals embody the best and brightest of that heritage -- Americans inspired by the belief that the trailblazers of today will be the heroes of tomorrow.

Think just over our shoulder of just a handful of last year's recipients. Think of Edwin Land who invented a plastic material that absorbed light of a specific polarization; or Maurice Hilleman whose brilliant discoveries in basic research and vaccine creation are combating infectious disease. Or Rosalyn Yalow whose breakthrough diagnostic technique is helping to save thousands of lives.

And think, too, of how another of last year's recipients has been a trailblazer in the aircraft industry. Since the 1940s, Kelly Johnson has designed more than 40 aircraft, including the world's largest aircraft and highest flying jet. And he not only led their development programs, but on the maiden flights was the flight test engineer himself putting his own life on the line, if you will.

Like each of you, Kelly Johnson has shown that progress often comes neither quickly nor cheaply. And it demands devotion -- sometimes even danger. It knows adversity and pain, and like each of you, he knows that dreams realized make possible even bigger dreams.

So today we celebrate dreams that you are making possible, dreams that will keep America competitive, raise our standard of living, improve our quality of life. And your dreams presage a new golden age of information, understanding and technology and show how creativity comes from the human heart and mind.

And so in closing, let me first salute your achievements and your commitment. Many of you have been teachers, and some have served in the government, and all have shown that America has no natural resource more precious than her intellectual resources. And next, let me promise you that our administration will do its part. And if I fall down, I expect my able Science Advisor, friend to all in this room, to dust me off and push me back into the game so I don't forget.

We know that scientific knowledge must be renewed and expanded. And so we will continue the American tradition of strong, broad-based support for the basic research and R&D in the areas of science and technology. The approach is going to be well-balanced and fair, and it includes both large science and technology projects, as well as small science principal investigator funding.

In large science and technology, look at the opportunities ahead. The superconducting supercollider and the human gnome initiatives or space station freedom, which will lead us toward the stars. And then the small science potential is no less dazzling. We want to stay on the path to doubling the National Science Foundation budget if Congress will cooperate. And give our youth a special incentive to excel in science, math and engineering through our new program of National Science Scholars.

So ladies and gentlemen, these priorities constitute an investment in our own future, strengthening the education which is crucial to that future. This investment in education is vital if America is to remain the leader in a very, very competitive world, both intellectually and commercially. And if science and technology are to uplift this generation, as you already have; you've done that. You've displayed your own contribution in a brilliant way. You've inspired generations to come, as you must. For you are, in essence, our true pioneers. Dreaming the dreams that enhance our energy and health, medicine, and productivity, national security and education.

Again, my heartfelt congratulations on behalf of each and every citizen to you for your contributions. And now, it is my great pleasure to introduce the Secretary of Commerce, Bob Mosbacher, and my Assistant for Science and Technology, Dr. Allan Bromley, who will describe your achievements.

I like my end of the bargain somehow. I get to present you with America's highest technological and scientific award. And I also get to shake your hands. So thank you very much, and thank you for your magnificent contribution -- not just to our country, but to the people around the world.

Thank you all, and I look forward to this. (Applause.)

END 2:16 P.M. EDT