THE WHITE HOUSE

Office of the Press Secretary

FILE

For Immediate Release November 13, 1990

REMARKS BY THE PRESIDENT
AT PRESENTATION OF
NATIONAL MEDALS OF SCIENCE AND NATIONAL MEDALS OF TECHNOLOGY

The East Room

2:01 P.M. EST

THE PRESIDENT: Welcome everybody. Thank you all. Please be seated and delighted to see you here. Pleased to see Secretary Mosbacher, our Secretary of Commerce; Secretary Watkins, Secretary of Energy. And, of course ,Dr. Bromley; Admiral Truly, right here in front, of NASA. Mike -- Governor Castle, good to see you, sir. And we especially want to greet our honored guests, this extraordinary gathering of scientific and technological genius. Welcome to the White House and welcome to the presentation of the 1990 National Medals of Science and the National Medals of Technology.

The timing of these awards is fortuitous. A year ago this week, Barbara and I awarded medals to some of the artistic giants of our time: Alfred Eisenstaedt and Dizzy Gillespie and John Updike, among others. And with all that assembled talent, guess what led the evening news. The Rose Garden presentation of the National Turkey. (Laughter.) So you're in luck. (Laughter.) This year the turkey doesn't arrive until Thursday. (Laughter.)

And this gathering marks a proud moment for me, just as it was when this year's Nobel Prizes were announced, and it turned out that eight of the nine winners in science and economics were born in the United States of America. It is, indeed, a tribute to America's frontier spirit and to our nation's steadfast resolve and sense of the future. For when it comes to leadership in science and technology, best in America means best in the world.

America's tradition of excellence has long been nurtured by a tradition of free inquiry aimed at the simple goal of better understanding ourselves and the world. In the 1945 report that led to the founding of the N.S.F., the National Science Foundation, Vannevar Bush -- no relation -- wrote that, "As long as scientists are free to pursue the truth wherever it may lead, there will be a flow of new scientific knowledge to those who can apply it to practical problems."

And so it is today. More and more, nearly every product from electronics to agriculture incorporates the latest in technology. And more and more, our nation depends on basic scientific research to spur economic growth, longer and healthier lives, a more secure world and, indeed, a safer environment.

Today, our government must help carry that research forward and contribute to the development of generic technologies that build on basic discoveries. If America is to maintain and strengthen our competitive position, we must continue not only to create new technologies, but learn to more effectively translate those technologies into commercial products. In this way, we can help leverage the R&D of the private sector, helping whole industries advance in an increasingly competitive global market.

The budget highlights our administration's commitment to

science and technology. We won double-digit increases for both NASA and the N.S.F. and expanded funds to investigate global climate change. We remain committed to doing even more, doubling the N.S.F. budget over five years and extending the tax credit for R&E -- research and experimentation. And we're going to keep raising America's sights. Space Station Freedom will give us a permanent presence in Earth orbit and the Space Exploration Initiative will take us to the Moon and Mars and beyond -- back to space, back to the future, and this time, back to stay.

Thirty years from now, when the Nobel Prizes are announced, I want America to be well represented. And 30 years from now, when the Medals of Science and of Technology are bestowed, I want to see America graced by a group as accomplished as that here today.

Many of today's honorees serve as prime examples of how we can effectively translate basic science into commerical technology. I think of Millie Dresselhaus, arguably the most important and prominent woman physicist and engineer of her generation, whose hard work helped to revolutionize semiconductors. Or Allan Cormack whose pioneering efforts earned him a Nobel Prize and made CAT scan a household word. And scholars as diverse as Boston's Baruj Benacerraf or Seattle's Donnall Thomas -- another Nobel laureate whose contributions to immunology may lead to new answers in our battle against cancer and AIDS. Scientists like you have, indeed, helped America to understand that AIDS is a disease, not a disgrace. And scientists like you have helped America to appreciate our responsibility to those who are living with HIV and AIDS. And they deserve our compassion, they deserve our care, and they deserve more than a chance -- they deserve a cure.

Another legacy of these prestigious medals and the work they honor must be the cultivation of excellence in science and math in classrooms across America. The National Science Scholars program we proposed soon after taking office has now been enacted and will encourage budding scholars of today to become the scientists of tomorrow. Guiding our efforts is an ambitious but critical goal for this decade: By the year 2000, U.S. students will be first in the world in science and math.

This week is Education Week, and its theme is "Educating Everyone Takes Everyone." A fitting motto for the challenges that lie ahead. If we are truly to remain a world leader in science and technology, then we must achieve a renaissance of quality in our schools and we must tap the talent, the energy, and the commitment of all our families, businesses, and universities.

The people we honor today are American trailblazers, real-life pioneers who pressed the very limits of their fields. You have distinguished not only yourselves, but also your nation. And that's why America continues to need, and want, and appreciate your creativity, your genius and your diversity.

Thank you. Congratulations to all. And God bless the United States. Thank you for coming. (Applause.)

(The awards are presented.)

END 2:10 P.M. EST

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release November 13, 1990

The President today will present the Nation's highest honors in science and technology -- the National Medal of Science and the National Medal of Technology -- to 30 renowned scientists, engineers, and mathematicians and to a representative of the DuPont Company at a special joint ceremony in the East Room of the White House.

Twenty outstanding scientists, engineers, and mathematicians will be awarded the National Medal of Science, and ten outstanding engineers and the DuPont Company will be awarded the National Medal of Technology.

The National Medal of Science was established by Congress in 1959 to recognize outstanding contributions to knowledge in the physical, biological, social, behavioral, mathematical, or engineering sciences.

The National Medal of Technology was established in 1980 to recognize scientists and engineers for their outstanding contributions to improving the well-being of the United States through the development or application of technology or the establishment of a technologically trained workforce.

The work of this year's medalists has had a great impact in areas such as energy, health, medicine, industrial productivity, education, and national security. Many of them have also devoted many years to teaching, and some have served in government.

# # #

1990 National Medal of Science Recipients

Baruj Benacerraf
President & Chief Executive Officer
Dana-Farber Cancer Institute
Boston, MA

Elkan R. Blout
Dean of Faculties
Harvard School of Public Health
Boston, MA

Herbert W. Boyer
Professor of Biochemistry and Biophysics
University of California
San Francisco, CA

George F. Carrier
T. Jefferson Coolidge Professor
of Applied Mathematics Emeritus
Harvard University
Cambridge, MA

Allan M. Cormack
University Professor
Tufts University
Medford, MA

Mildred S. Dresselhaus
Institute Professor
Massachusetts Institute of Technology
Cambridge, MA

Karl Folkers
Director, Institute for Biomedical Research
The University of Texas
Austin, TX

Nick Holonyak, Jr.
Professor of Electrical and Computer
Engineering
University of Illinois
Urbana, IL

Leonid Hurwicz
Curtis L. Carlson Professor of Economics
University of Minnesota
Minneapolis, MN

Stephen C. Kleene
Professor Emeritus
University of Wisconsin
Madison, WI

Daniel E. Koshland, Jr.
Professor of Biochemistry
University of California, Berkeley
Berkeley, CA

Edward B. Lewis
Thomas Hunt Morgan Professor of Biology
Emeritus
California Institute of Technology
Pasadena, CA

John McCarthy
Professor of computer Science
Stanford University
Stanford, CA

Edwin M. McMillan
Professor of Physics Emeritus
University of California
Berkely, CA

David G. Nathan
Physician-in-Chief
The Children's Hospital
Boston, MA

Robert V. Pound
Professor of Physics
Harvard University
Cambridge, MA

R. D. Revelle
Director Emeritus
Scripps Institution of Oceanography
University of California
La Jolla, CA

John D. Roberts
Institute Professor of Chemistry
California Institute of Technology
Pasadena, CA

1990

NATIONAL MEDAL OF TECHNOLOGY

FACT SHEET

What is the National Medal of Technology?

The National Medal of Technology is the highest award bestowed upon American technologists by the President of the United States. Presented annually, the Medal is awarded to provide recognition of extraordinary individuals and companies for their outstanding contributions to improving the well-being of the United States, either through the development or commercialization of technology, or for their contributions to the establishment of a technologically-trained workforce.

When was the Medal established?

The National Medal of Technology was signed into law in 1980 as part of the Stevenson-Wydler Technology Innovation Act. The first Medals were awarded in 1985.

Who is eligible to receive the Medal?

Any U.S. citizen or U.S.-owned company is eligible to win the Medal. Persons connected with Technology Administration or who serve on the Medal's Nomination Evaluation Committee are not eligible during the period of their service and for a period of five years thereafter.

How many Medals have been awarded? How many are given each year?

As of 1989, 40 individuals and one company have received the National Medal of Technology. Though 11 Medals are being presented in 1990, it is anticipated that -- beginning in 1991 -- a maximum of six Medals will be awarded in future years.

Who administers the Medals?

The Medal program is administered by the Department of Commerce's Technology Administration, under the management of the Assistant Secretary for Technology Policy.

What is the nomination/evaluation process?

A steering committee, chaired by the Under Secretary of Technology, oversees the solicitation of nominations. In addition to the Under Secretary, the steering committee consists of the Assistant Secretary for Technology Policy, the Director of the National Institute of Standards and Technology (NIST), and the Assistant Secretary/Commissioner of the Patents and Trademarks.

Nominations can be made either by individuals or by companies. The nominations are then evaluated by the National Medal of Technology Nomination Evaluation Committee which is selected by the Secretary of Commerce. Committee members are selected from U.S. industry, government, professional organizations and academia to serve three-year staggered terms.

Aver evaluating the nominations, the committee recommends a list of recipients in priority order to the Secretary of Commerce. The Secretary then makes his recommendations to the President, who in turn, makes the final selection.

When is the deadline for submitting nominations?

Nominations for the 1992 Medal must be submitted by September 30, 1991. Nomination instructions can be obtained by writing to: Dr. Paul V. Braden, National Medal of Technology, Room 1418, U.S. Department of Commerce, 14th Street and Constitution Avenue, N.W., Washington, D.C. 20230, or by calling, (202)377-5572.

NATIONAL MEDAL OF SCIENCE

FACT SHEET

What is the National Medal of Science?

It is the Nation's highest scientific honor bestowed by the President.

How was it established?

By Public Law 86-209, 86th Congress, August 25, 1959. The law also provides that the design of the Medal is based on recommendations by the National Science Foundation and that no more than 20 Medals can be awarded in any given calendar year.

How are recipients selected?

Executive Order 10961, signed on August 23, 1961 by President Kennedy, established the Committee on the National Medal of Science. The committee receives nominations from the National Academy of Sciences and other scientific and engineering sources. The Committee selects its candidates from among these nominations and transmits its recommendations through the Science Advisor to the President for final decision.

What are the selection criteria?

The total impact of an individual's work on the present state of physical, biological, mathematical, engineering, behavioral or social sciences. In addition, achievements of an unusually significant nature are considered and judged in relation to the potential effects of such achievements on the development of scientific thought. Also, consideration is given to distinguished service in the general advancement of science and engineering when accompanied by substantial contributions to the content of science at some time.

Who provides nominations?

Letters are sent to approximately 150 universities and colleges, approximately 150 scientific, engineering and other professional societies and organizations, members of the National Academy of Sciences and National Academy of Engineering. Approximately 3,000 letters of invitation are sent each year.

How many new nominations are received each year?

Approximately 150.

How many have been reviewed to date?

Approximately 2,700 nominations have been reviewed since 1962.

How many Medals have been awarded?

265 since 1962.

How are the activities carried out?

The Office of Science and Technology Policy is Ceremony Project Officer and the National Science Foundation (under E.O. 10961) provides staff and administrative services necessary for the performance of the functions of the Committee.

FILE

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release February 2, 1990

SCIENCE AND TECHNOLOGY ACCOMPLISHMENTS
AND INITIATIVES OF THE BUSH ADMINISTRATION

FACT SHEET

The President announced today the appointment of the members of the President's Council of Advisors on Science and Technology (PCAST). This distinguished panel of scientists, engineers and industry leaders will provide high-level advice directly to the President on a wide range of important issues concerning science and technology.

Advances in science and technology are a key to increased economic competitiveness and improving our quality of life. The President's action today caps a year of vigorous activity by the Administration to advance science and technology issues on a broad front. The three broad areas of activity are summarized below:

I. Strengthening Federal Science and Technology Policy

II. Enhancing Federal Research and Development Activities

III. Encouraging Increased Private Sector Research and Development Investment

I. Strengthening Federal Science and Technology Policy

- o Establishing the National Space Council. -- The President issued an Executive Order on April 20, 1989, establishing the National Space Council, chaired by the Vice President. The Space Council provides advice and assistance to the President on space policy and strategy and monitors and coordinates the implementation of space policy among the civil, national security and commercial space sectors.

- o Establishing the Administration's Council on Competitiveness. -- The President established the Council on Competitiveness, chaired by the Vice President, to oversee regulatory and other competitiveness issues, such as reform of product

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liability laws. A new Working Group will coordinate and review Administration policy and regulations, and will focus on enhancing applied research and on streamlining risk-based regulation of new biotechnology products to ensure safety and promote competitive economic development.

- o Upgrading the Status of the Science Advisor and Increasing the Budget for the Office of Science and Technology Policy. -- The President has raised the status of the Science Advisor to Assistant to the President for Science and Technology. The Science Advisor now participates in deliberations of the Cabinet and of the Domestic and Economic Policy Councils to ensure that science and technology issues are fully reflected in Administration policy development. In addition, the FY 1991 budget proposes $3.3 million for OSTP, double the FY 1989 level.

- o Strengthening the Federal Coordinating Council on Science, Engineering and Technology (FCCSET). -- The Science Advisor initiated action to improve the interagency coordination apparatus for science and technology by consolidating and enhancing the current FCCSET committee structure. Building on the successful experience of the FCCSET Committee on Earth Science, new committees will be formed to coordinate Federal efforts in education and human resource development, materials science, and others.

- o Reinvigorating the Council on Environmental Quality (CEQ). -- The President is committed to strengthening the CEQ and to ensuring that it has the capacity to serve as an effective source of environmental analysis and information in the White House. Accordingly, the President's FY 1991 budget increases CEQ's budget by 90 percent and CEQ's staff by 70 percent.

II. Enhancing Federal Research and Development Activities

A. Increased Investment in Federal R&D

- o The President has proposed a total of $71 billion for research and development (R&D), including R&D facilities, in his FY 1991 budget. This is an increase of $4.5 billion, or 7 percent, over FY 1990 enacted levels.

- o Civilian R&D will increase by 12 percent, and defense-related R&D will increase by 4 percent.

- The President has also proposed to allocate $12 billion for basic research, an increase of $1 billion, or 8 percent, over FY 1990. Basic research is an essential investment in the nation's scientific and technological future, including its future scientists and engineers.

B. Science and Technology Education

The President has moved aggressively to address the shortcomings in the nation's science and technology education enterprise. He has set goals for the nation's schools and students in science and math, and the FY 1991 budget will provide over $1 billion in direct spending in five agencies for science, mathematics and engineering education.

- National Science Foundation (NSF). -- NSF will allocate $463 million in FY 1991, a 30 percent increase over FY 1990, for a wide variety of education activities to improve the quality of teachers and students, the numbers of students choosing science, math, or engineering careers, and the numbers staying in those fields, particularly those in traditionally under-represented groups.

- Department of Education. -- The Department will continue to build on its strong relationships with State educational entities. The FY 1991 budget proposes $230 million, an increase of 69 percent, for the Dwight D. Eisenhower Mathematics and Science program, which provides funds to States to implement improved programs for teaching math and science. In addition, five million is requested for the new National Science Scholars program to recognize outstanding high school students by providing fellowship support for them to study in the fields of mathematics and science in college. The Department will also launch an initiative under its Upward Bound program to provide academic assistance and encouragement to help disadvantaged students pursue study in mathematics and science.

- National Aeronautics and Space Administration (NASA). -- NASA will allocate $51 million in FY 1991, an increase of 21 percent, for education activities including the "Spacemobile" program, teacher and student workshops and research experiences at NASA laboratories, and special efforts to increase minority participation in science and engineering.

- o Department of Energy (DOE). -- DOE will provide $25 million in FY 1991, a 47 percent increase, for educational activities including support for graduate and undergraduate students and high school and university faculty. DOE will implement a new program, in collaboration with the private sector, to train high school faculty in the state-of-the-art science and technology conducted at the DOE laboratories.

- o National Institutes of Health (NIH). -- The research training grant program will be funded at a level of $292 million, which will support almost 12,000 graduate trainees in research laboratories throughout the nation.

C. Doubling the Budget of the National Science Foundation

The President has maintained his strong commitment to the importance of basic research by proposing $2.4 billion in budget authority, a more than 14 percent increase, for the National Science Foundation in FY 1991. This will continue progress toward doubling the NSF budget by FY 1993.

- o World-Class Research Equipment. -- The President has also recognized that world-class science and technology requires world-class research equipment. He has supported the construction of a replacement for the important radiotelescope at Greenbank, West Virginia, and, for FY 1991, has proposed the initiation or continuation of several high-priority, specialized research facilities including the National High Magnetic Field Laboratory, the Laser Interferometer Gravitational Wave Observatory, and two 8-meter optical/infrared telescopes.

- o Academic Research Facilities Modernization. -- In addition to research support, the President will also continue the Academic Research Facilities modernization program begun by NSF in FY 1990. Continuing the program will increase management experience and permit evaluation of its impact on U.S. science and technology.

- o U.S. Antarctic Program. -- NSF manages the U.S. Antarctic Program for the government. This program supports national goals in the Antarctic and is the principal expression of the U.S. presence on the Antarctic continent. The FY 1991

budget will expand an important environmental, safety, and health initiative in the Antarctic to ensure that this world scientific resource is preserved and that the safety and health of scientists working on the continent are assured.

D. Understanding and Exploring Space

The President is committed to a continuing, active and exciting American presence in space -- indeed, to America's leadership in space science and exploration. Overall, the FY 1991 budget proposes $15.2 billion for NASA, an increase of $2.9 billion, or 24 percent. NASA's budget has increased by almost 40 percent over FY 1989.

- o Space Shuttle. -- The current fleet of three Space Shuttles are the world's most versatile launch vehicles. In FY 1989, the Space Shuttle fleet completed four successful flights. The Space Shuttle Columbia recently accomplished the spectacular retrieval of the Long Duration Exposure Facility. The FY 1991 budget proposes $4.2 billion, an increase of 22 percent, for Space Shuttle production and operations. This funding will allow for a safe build-up to 10 Shuttle flights, the delivery of the fourth Shuttle, Endeavor, and enhancements such as the Advanced Solid Rocket Motor and the Extended Duration Orbiter capability.

- o Space Station Freedom. -- Space Station Freedom is the largest international R&D project ever undertaken. In FY 1989, the program underwent a reevaluation that has resulted in a more achievable program and funding profile. The FY 1991 budget continues the President's commitment to the Space Station by proposing a total of $2.6 billion, an increase of 36 percent. This will provide for the critical transition from design to actual fabrication.

- o Moon/Mars Exploration. -- On July 20, 1989, the President proposed that America undertake an ambitious mission of manned exploration of the solar system. This journey will begin with the first step in the FY 1991 budget towards this new goal -- nearly $1.3 billion, an increase of 47 percent -- to support robotic science missions and to develop the pacing and innovative technologies that will be needed. Of particular interest is the continued commitment of the Administration to

the National Aerospace Plane (NASP) program. In FY 1989 the National Space Council reviewed and revised this program in keeping with a more stable and sustainable pace of technology and funding.

- o Space Science and Applications. -- The U.S. is committed to maintaining its world leadership in space science. An exciting new era of discovery has now begun in unmanned planetary exploration, astronomy, and Earth observations. In 1989, three important scientific missions were launched: Magellan to Venus, Galileo to Jupiter, and the Cosmic Background Explorer. The FY 1991 budget proposes $3.3 billion, an increase of 22 percent, for the continued support of missions planned for launch in 1990 including the Hubble Space Telescope, the Gamma Ray Observatory, and the Ulysses mission to explore the Sun, and development of future missions such as the Comet Rendezvous/Asteroid Flyby and the Cassini mission to Saturn.

E. Global Environmental Change

- o U.S. Global Change Research Program (USGCRP). -- The U.S. is the world leader in global change research. The President has endorsed the USGCRP, a coordinated, multi-agency research program of space- and ground-based research and observations designed to provide a sound scientific basis for rational policy decisionmaking on global change issues. The FY 1991 budget proposes over $1 billion for this effort, an increase of 57 percent.

- o Mission to Planet Earth (MTPE). -- On July 20, the President also affirmed the importance of NASA's contribution to the USGCRP, Mission to Planet Earth. The largest part of this initiative consists of a major new program for FY 1991, the Earth Observing System, a series of space platforms and instruments developed by the U.S., Europe and Japan, which will collect a broad spectrum of environmental data related to global warming, drought, oceans, etc. MTPE will permit, for the first time, an analysis of Earth as an integrated system.

- o International Activities. -- The President believes that continuing U.S. scientific leadership is needed to address global environmental issues. In the past year, the

President announced U.S. support for a worldwide phaseout of chloroflurocarbon (CFC) production to the extent safe substitutes are available. In 1990, the U.S. will host the Plenary Session of the Intergovernmental Panel on Climate Change (IPCC) in February; a meeting of the world's economic, scientific, and environmental officials to discuss global environmental issues in the Spring; and the first negotiation session on the Framework Convention on Climate Change in late Fall.

F. Environment

- o Clean Air Act. -- The President demonstrated his commitment to clean air by transmitting Clean Air Act Amendments to Congress in July 1989. The President's plan allows for both environmental protection and economic development and is based on a commitment to using the best science available. In support of his Clean Air proposals, the FY 1991 air research budget of the Environmental Protection Agency will increase by $8 million to a total of $95 million.

G. The Superconducting Super Collider and High Energy Physics

- o The Superconducting Super Collider (SSC). -- The SSC will provide an enormous advance in the capability to explore the secrets of matter and energy. Over the past year, the Department of Energy has established the SSC laboratory at a site near Dallas, Texas. The new laboratory team is conducting a thorough reevaluation of all technical systems with particular attention to magnet design and technical performance of the accelerator. In FY 1989, research continued on the design and testing of magnets. Approximately 8,000 magnets will be used in the 53-mile SSC tunnel. In addition, during FY 1989, DOE continued work on the site-specific Environmental Impact Statement (EIS). The EIS is necessary before DOE makes a decision on the "footprint" of the SSC and starts acquiring land for the project.

- o High Energy and Nuclear Physics. -- The President supports a robust program of research in the areas of high-energy and nuclear physics, which offer the prospects of increasing our knowledge of the basic constituents of matter. Last year,

scientists discovered and conducted measurements of the Z-nought particle utilizing the recently upgraded Stanford Linear Collider. The Z-nought particle is important because it transmits one of the basic forces between elementary particles. The FY 1991 budget provides a funding increase of 8 percent to continue research at Stanford and the three other large accelerator centers: the Brookhaven National Laboratory on Long Island, the Cornell Electron Storage Ring in New York State, and the Fermilab National Laboratory.

H. Life Sciences

- o Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS). -- The Administration remains committed to making continued progress against HIV and AIDS. Five therapies have been approved for use, and since January 1989 over 35 clinical trials have been initiated in a search for additional therapeutic drugs. The Administration has recently taken action to enable State Medicaid programs to cover the costs of the drug AZT for HIV-infected individuals who do not yet exhibit AIDS symptoms. The FY 1991 budget proposes $3.5 billion in total for HIV/AIDS research, treatment, prevention and income support, an increase of 18 percent.

- o Human Genome Project. -- The evolution of genetic engineering techniques over the last decade has enabled the initiation of one of the most exciting science projects ever undertaken -- the development of a map of the full complement of human genetic material (the human genome). Such an undertaking will vastly increase our understanding of the nature and cause of many diseases. Over the past year, important advances have already been made, such as the identification of the gene that accounts for a large proportion of all cystic fibrosis cases. The FY 1991 budget proposes $108 million for the National Institutes of Health and $46 million for the Department of Energy to pursue collaboratively this important project.

- o Biotechnology. -- Recent breakthroughs in biotechnology, such as recombinant DNA techniques, cell fusion and gene therapy, offer unprecedented opportunities for improving the nation's productivity, health, and well-being. Increasing Federal investment in basic biotechnology research

will spur further advances, as will initiatives that improve payoffs on investments. The FY 1991 budget proposes $3.6 billion for biotechnology R&D, an increase of 6 percent over 1990.

- o Agricultural Research Initiative. -- American farmers are among the most productive in the world. New techniques in genetics, molecular and cell biology have led to innovative approaches that will enhance our ability to produce food, while addressing concerns of safety, nutrition and the environment. The FY 1991 budget will launch a National Research Initiative to more than double the size of USDA's competitive grants program. This will expand funds for plant and animal biotechnology to $50 million, with a particular emphasis on mapping the genome of important crop plants. Like the Human Genome Initiative, this effort will create new opportunities to explore the genetic potential of plants.

I. Energy

- o National Energy Strategy. -- The President has directed Secretary of Energy Watkins to develop a National Energy Strategy to guide the Administration's energy policies and programs. The Department has held two rounds of public hearings and plans to issue a draft document in April. A key element of the strategy will be a blueprint for future energy R&D programs and activities.

- o Clean Coal Technology. -- The Administration is committed to a $2.5 billion program to demonstrate emerging clean coal technologies. This program will provide additional cost-effective alternatives for reducing acid rain.

- o Solar/Renewables and Energy Conservation R&D. -- The President is committed to assisting the development of emerging technologies that offer the potential to provide new sources of energy as well as new ways to use it more efficiently, while protecting the environment. On January 26, 1990, the Department of Energy announced a new 11-point initiative in this area. The FY 1991 budget provides an increase of 8 percent in funding for conservation, solar and other renewable energy technology R&D.

- o Enhanced Oil and Gas Recovery Research. -- Up to two-thirds of oil and gas reserves are still left in the ground with conventional recovery techniques. In order to stimulate the use of new technologies to increase production from these existing fields, the President proposed four new tax initiatives, including a 10 percent credit for new tertiary enhanced recovery projects. In addition, the FY 1991 budget proposes $17 million to establish oil and gas geosciences research consortia with industry and universities to advance the science underlying oil and gas recovery.

J. Advanced Technology

- o National Institute of Standards and Technology (NIST). -- The FY 1991 budget proposes $198 million for NIST, a 21 percent increase over the 1990 enacted level, and includes substantial increases for core NIST research programs such as robotics, lightwave technology, quality chemical measurements, and advanced semiconductor measurement. NIST research programs form the basis for the development of the measurements and standards on which U.S. industries depend. The FY 1991 budget also includes increased funding for improvements to NIST facilities. In addition, the budget includes funding for two programs to encourage the development and transfer to the private sector of a wide range of advanced technologies.

  - -- Manufacturing Technology Centers. -- The budget proposes to continue funding for these centers, requesting $5 million in FY 1991. This program provides matching grants to universities or non-profit organizations to establish centers for the transfer of innovative, advanced manufacturing technology to small and medium-sized businesses.

  - -- Advanced Technology Program (ATP). -- The budget requests $10 million in FY 1991, the 1990 funding level, for this program. The ATP will provide seed money to industry-led consortia doing generic, pre-competitive research into promising technologies.

- o Magnetic Levitation Transportation. -- The FY 1991 budget proposes nearly $10 million for R&D on this

emerging technology, an increase of almost 400 percent. These efforts are being carried out by both the Department of Transportation (about $6 million) and the Army Corps of Engineers (almost $4 million). Each agency is pursuing a public-private partnership designed to facilitate private development of an operational maglev system in the U.S.

K. National Security

- o DOD Technology Base. -- The President supports a strong technology base to develop options for future weapons systems and to guard against technological surprise by adversaries. The FY 1991 budget includes $3.4 billion for the technology base (basic and applied research) funded through the Department of Defense. This will support programs ranging from basic research in the physical sciences to development of high-speed semiconductors for use in advanced communications systems and computers.

- o Strategic Defense Initiative (SDI). -- The SDI program remains a high priority of the President. The FY 1991 budget requests $4.5 billion for SDI, an increase of $0.9 billion over 1990. The SDI program is developing options for strategic defenses based on advanced technologies. Particular emphasis is being placed on promising new concepts such as the "Brilliant Pebbles" small space-based interceptor missiles.

III. Encouraging Increased Private Sector R&D Investment

Private sector investment accounts for about 50 percent of the total national investment in R&D. In addition, the private sector is the principal performer for R&D and is ultimately responsible for transforming R&D results into useful new products and processes. The Administration has taken a number of steps to encourage increased private sector R&D investment and technological innovation.

- o Encouraging Savings and Investment. -- The President is proposing the Family Savings Account to stimulate increased savings that provide the resources needed for investments in the future. In addition, the President is proposing to lower the tax on capital gains in order to promote increased entrepreneurial activity and investment.

- Research and Experimentation Tax Credit. -- The President again proposes to make permanent the 20 percent tax credit targeted specifically to research and experimentation (R&E) by allowing 100 percent of total research expenses to be used for the computation of the credit for all years after December 31, 1989. In 1989, the Congress enacted a short-term extension in response to the President's proposal of last February.

- Encouraging R&D by Transnational Companies. -- The President proposes to make permanent the rules, as modified by the Omnibus Budget Reconciliation Act of 1989, for the allocation of foreign and domestic R&E expenditures for companies with foreign operations. The proposal would also allow 100 percent of U.S. expenditures to be covered rather than the current 75 percent. This proposal would apply to all tax years beginning after August 1, 1990, when the current rules expire.

- Intellectual Property. -- The President is committed to pursuing aggressively improved international protection of intellectual property. The current negotiations in the Uruguay Round of the General Agreement on Tariffs and Trade are an important forum for this activity.

- Tort Reform/New Product Liability. -- The Administration has endorsed changes in product liability laws to help restore balance to the tort system, to increase competitiveness, and to reduce uncertainty, particularly for new products, while providing incentives to produce safe products.

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FILE Science & Tech

THE WHITE HOUSE

Office of the Press Secretary
(Knoxville, Tennessee)

For Immediate Release February 2, 1990

The President today announced the appointment of the President's Council of Advisers on Science and Technology (PCAST), comprised of 12 distinguished scientists and engineers. This panel will provide high-level advice directly to the President on a wide range of important issues concerning science and technology.

PCAST will be the first Presidential scientific advisory group in many years to report directly to the President. Its establishment is a measure of the Bush Administration's high esteem for science and a recognition that advances in science and technology contribute in a major way to increased economic competitiveness. It also reflects the President's desire to strengthen Federal science and technology policy, enhance Federal research and development activities, and encourage private sector involvement in research and development.

The United States scientific community leads the world in creating new knowledge. Through PCAST, the President is seeking to provide the best obtainable private sector advice to Executive Branch decision-making in science and technology.

PCAST will be chaired by Dr. D. Allan Bromley, Assistant to the President for Science and Technology. A list of the members and their affiliations is attached, along with a fact sheet on science and technology accomplishments in the Bush Administration.

PCAST was established January 19, 1990, by Executive Order 12700. Its members will be sworn in later today by the Vice President at the White House.

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NORMAN E. BORLAUG

Nobel Laureate Borlaug, of Texas, is currently leader of the Sasakawa-Global-2000 agricultural program in sub-Saharan Africa, Distinguished Professor of International Agriculture at Texas A&M University, and a Senior Consultant to CIMMYT. He was Director of the Wheat Research and Production Program of the International Maize and Wheat Improvement Center, Mexico, from 1964 until his retirement in 1979.

Dr. Borlaug's career began in 1935 in the U.S. Forest Service, and he subsequently worked as an instructor in plant pathology at the University of Minnesota in 1941, where he received his Ph.D. From 1942 through 1944 he was a microbiologist with the E. I. DuPont de Nemours & Co.. He also served as research scientist in charge of wheat improvement with the Cooperative Mexican Agricultural Program, Mexican Ministry of Agriculture and the Rockefeller Foundation, 1944-60, and later, as Associate Director of the Foundation assigned to the Inter-American Food Crop Program, 1960-63.

D. ALLAN BROMLEY, CHAIRMAN

D. Allan Bromley, of Connecticut, is Assistant to the President for Science and Technology and Director of the Office of Science and Technology Policy (OSTP).

Dr. Bromley carried out pioneering studies on both the structure and dynamics of nuclei and is considered the father of modern heavy ion science. He has played major roles in the development of accelerators, of detection systems, and in computer based data acquisition and analysis systems. He is currently on leave from his position as Henry Ford II Professor of Physics at Yale University, where he was founder and Director of the A.W. Wright Nuclear Structure Laboratory.

Dr. Bromley has been a leader in the national and international science and science policy communities for more than 20 years, serving as a member of the White House Science Council throughout the Reagan Administration and as a member of the National Science Board in 1988-89. He received the President's National Medal of Science in 1988 and the Presidential Medal of the New York Academy of Sciences in 1989. He has served as President of the American Association for the Advancement of Science and of the International Union of Pure and Applied Physics.

Dr. Bromley received the B.Sc. degree in 1948 at Queen's University, Canada, the M.Sc. degree from Queen's University in 1950, and the Ph.D. degree in nuclear physics from the University of Rochester in 1952. He has since been awarded 10 honorary doctorates.

SOLOMON J. BUCHSBAUM

Solomon J. Buchsbaum, of New Jersey, has been Senior Vice President, Technology Systems, at AT&T Bell Laboratories since 1979. His early career included work at the MIT Research Laboratory of Electronics. He received his Ph.D. in physics from MIT in 1957. He joined Bell Laboratories in 1958 as a member of the technical staff and later became department head and director of the Electronics Research Laboratory. In 1968, he was named Vice President for Research at the Sandia Laboratories and served in a number of different capacities. He returned to Bell Laboratories in 1971 as an Executive Director. In 1976 he became Vice President, Network Planning and Customer Systems.

Dr. Buchsbaum is a member of the National Academy of Sciences and of the National Academy of Engineering. He was the recipient of the President's National Medal of Science in 1986.

CHARLES L. DRAKE

Charles L. Drake, of Vermont, has been the Albert Bradley Professor of Earth Sciences at Dartmouth since 1984 and Professor of Geology since 1969. Dr. Drake's professional career began at Columbia University in 1953. He joined the staff at Dartmouth in 1958 after receiving his Ph.D. in geology from Columbia University where he has continued his career, including service as Professor and Chairman of the Department, 1967-69; as Dean of Graduate Studies and as Associate Dean of the Science Department, 1978-81.

Dr. Drake is a recipient of the G. P. Woollard Award, Geophysical Division of the Geological Society of America.

RALPH E. GOMORY

Ralph E. Gomory, of New York, is President of the Sloan Foundation and, until his recent retirement, was Senior Vice President for Science and Technology, IBM Corporation. He received his Ph.D. in mathematics from Princeton in 1954.

Dr. Gomory's professional experience includes teaching and research at Princeton from 1957-59. In 1959, he joined the Research Division of IBM and was named Director of the Mathematical Sciences Department in 1965. In 1970 he became IBM Director of Research and held that position until 1985, becoming IBM Vice President in 1973, Senior Vice President in 1985, and IBM Senior Vice President for Science and Technology in 1986. He has been awarded a number of honorary degrees and prizes, including the John von Neumann Theory Prize in 1984 and the National Medal of Science in 1988.

BERNADINE HEALY, VICE CHAIRMAN

Bernadine Healy, of Ohio, is Chairman of the Research Institute of The Cleveland Clinic Foundation, a position she assumed in 1985, and is a staff member of the Clinic's Department of Cardiology. Prior to that time, she was Deputy Director of the Office of Science and Technology Policy at the White House, and until that appointment had been a Professor at The Johns Hopkins University School of Medicine and Hospital. Dr. Healy received her medical degree from Harvard Medical School in 1970. Her medical career continued at Johns Hopkins from 1976 to 1984, where she was Professor of Cardiology and Medicine, Director of the Coronary Care Unit, and Assistant Dean for Postdoctoral Programs and Faculty Development.

Dr. Healy is a member of the Institute of Medicine of the National Academy of Sciences. She is the immediate Past President of the American Heart Association and a former President of the American Federation for Clinical Research.

PETER W. LIKINS

Peter W. Likins, of Pennsylvania, has been President of Lehigh University since 1982. His professional career began as a development engineer with the Jet Propulsion Laboratory, California Institute of Technology, in 1958. In 1964 he joined the faculty at the University of California, Los Angeles, where he became Professor of Engineering and later, Associate Dean. Dr. Likins received his Ph.D. in engineering mechanics from Stanford in 1965. In 1976 he became Professor and Dean of Columbia University, serving until 1980, when he became Provost of the University.

THOMAS E. LOVEJOY

Thomas E. Lovejoy, of Virginia, is the Assistant Secretary for External Affairs, The Smithsonian Institution. His previous experience includes service as a research assistant at the University of Pennsylvania, 1971-74, after receiving his Ph.D. in biology from Yale University in 1971; as Executive Assistant to the Science Director and as Assistant to the Vice President for Resources and Planning of the Academy of Natural Sciences, 1972-73; as the Vice President for Science of the World Wildlife Fund-U.S., 1973-87; and as Executive Vice President, 1985-89.

Dr. Lovejoy is President of the Society for Conservation Biology.

WALTER E. MASSEY

Walter E. Massey, of Illinois, has been the Vice President of the University of Chicago for Research and for Argonne National Laboratory since 1984. He has also been Professor of Physics at the University since 1979.

Dr. Massey previously served as a physics instructor at Morehouse College, 1958-59; and after receiving his Ph.D. in physics from Washington University in 1966, as a staff physicist with the Argonne National Laboratory until 1968; as Assistant Professor of Physics, University of Illinois, Urbana, 1968-70; Associate Professor of Physics and Dean of the College, Brown University, 1975-79. He is Vice President, and President-elect, of the American Physical Society and is the Past President and Chairman of the American Association for the Advancement of Science.

JOHN P. MCTAGUE

John P. McTague, of Michigan, is Vice President-Research, Ford Motor Company, and has served in that position since 1986.

In 1983 Dr. McTague was appointed Deputy Director of the Office of Science and Technology Policy, becoming Acting Science Advisor to the President and Acting Director of OSTP in 1986. Prior to that, he was Chairman of the National Synchrotron Light Source Department, Brookhaven National Laboratory, 1982-83. He was Professor of Chemistry and a member of the Institute of Geophysics and Planetary Physics, University of California, Los Angeles, 1970-82. Dr. McTague began his professional career as a member of the Technical Staff, North American Aviation Science Center, on receiving his Ph.D. in physical chemistry from Boston University, and remained there until 1970. He is U.S. Chairman of the U.S. Japan Joint High Level Advisory Panel on Cooperation in Research and Development in Science and Technology.

DANIEL NATHANS

Nobel Laureate Nathans, of Maryland, is Professor of Molecular Biology and Genetics at The Johns Hopkins University Medical School and Senior Investigator of the Howard Hughes Medical Institute. He has been on the faculty of The Johns Hopkins University Medical School since 1962.

After receiving his Medical Degree from Washington University in 1954, he served as Medical Resident at the Columbia-Presbyterian Medical Center in New York, 1955, 1957-59; as Clinical Associate at the National Cancer Institute, 1955-57, and Guest Investigator in biochemistry at the Rockefeller University, 1959-62.

Dr. Nathans received the Nobel Prize in Physiology or Medicine in 1978 for his research with enzymes that cut DNA into specific pieces, one of the basic tools of genetic engineering.

DAVID PACKARD

David Packard, of California, has been Chairman of the Board of the Hewlett-Packard Co. since 1972. Mr. Packard received his B.A. and B.S.E.E. degrees from Stanford University in 1934 and 1939, respectively.

His professional experience includes service as an engineer with the Vacuum Tube Engineering Department, GE Co., 1936-38; co-founder and partner, the Hewlett-Packard Co., 1939-47; President, 1947-64; and Chairman and Chief Executive Officer, 1964-69. Prior to his present position, Mr. Packard served as U.S. Deputy Secretary of Defense from 1969-71.

Mr. Packard received the Vannevar Bush Award of the National Science Board in 1987 and the President's National Medal of Technology and the Presidential Medal of Freedom in 1988.

HAROLD T. SHAPIRO

Harold T. Shapiro, of New Jersey, has been President of Princeton University since 1988.

Dr. Shapiro's previous academic experience has been with the University of Michigan, after receiving his Ph.D. in economics from Princeton in 1964, first as an Assistant Professor of Economics. His career progressed from Associate Professor, 1967-70; Professor, 1970-76; Chairman of the Department of Economics, 1974-77; Professor of Economics and Public Policy, 1977; Vice President for Academic Affairs, 1977-79.

Dr. Shapiro was President of the University of Michigan from 1980 until 1987. He has served as a member of many industrial, governmental and academic boards and commissions.

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