

Originally Processed With FOIA(s):
2005-0336-F

FOIA Number:
2005-0336-F

FOIA MARKER

**This is not a textual record. This is used as an
administrative marker by the George Bush Presidential
Library Staff.**

Record Group/Collection: George H.W. Bush Presidential Records
Collection/Office of Origin: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: International Files

OA/ID Number: 62062
Folder ID Number: 62062-005

Folder Title:
International - General [1992]

Stack:

Row:

Section:

Shelf:

Position:

0

0

0

0

THE WHITE HOUSE
WASHINGTON

January 23, 1992

MEMORANDUM FOR BOB GRADY

FROM: D. ALLAN BROMLEY 
SUBJECT: GRIST FOR YOUR MILL

Enclosed herewith are a series of one-pagers that we discussed last Saturday covering a variety of science and technology topics. They are the following:

1. Science and Technology in the Bush Administration
2. Technology for a Productive America
3. Biomedical Research
4. * The Federal Coordinating Council for Science, Engineering and Technology
 - a) Membership list
 - b) Committee list
 - c) Agency participation
5. * High Performance Computing and Communication
6. * Advanced Materials and Processing
7. * Biotechnology Research
8. * The US Global Change Research Program
9. * Mathematics and Science Education
10. The President's Council of Advisors on Science and Technology
 - a) Membership list
11. Small US High Technology Businesses

These, as we discussed, are intended as input to your development of appropriate material on R&D in the Bush Administration and for possible use subsequently as fact sheets for more general use.

We would welcome your suggestions for changes in content, format, or whatever to make these as effective as possible.

I will be out of town most of Thursday (today) and Friday since the New Haven Colony Historical Society is dedicating a new archival wing in my late wife's memory and I am attending the dedication activities.

In my absence please contact Steve Olson (extension x2734) or Tom Ratchford (extension x2894) if you want changes made.

*These are the sheets specifically related to FCCSET activities.

On a different topic: Today is the absolute deadline for getting material for the FCCSET crosscut booklets to the printers if we are to have even a small number of copies available for distribution at the press conferences scheduled for January 30 and 31. I would very much appreciate your turning them loose.

Many thanks. My office can reach me anytime today or tomorrow and the White House operators can get me over the weekend when I will be in town.

Enclosures

SCIENCE AND TECHNOLOGY IN THE BUSH ADMINISTRATION

- Science and technology are transforming the lives of people around the world. Technology is a major factor in driving economic growth and for 150 years has consistently been relied upon for creating new jobs and improving living standards. Communications technologies have brought the message of freedom to oppressed peoples, inspiring them to rise up against unjust governments. New materials, electronic devices, and medical treatments continue to improve the conditions of our lives. Defense technologies deter international aggression and promise a new era of peace. And new discoveries about ourselves and the universe we inhabit continue to astonish and delight us.
- The Bush Administration fully recognizes the profound impact of science and technology on our lives and on our world, and science and technology have been central elements of Bush Administration policies. In the three years since George Bush became President, federal support for nondefense R&D has gone up by a third. Basic research funding has gone up by a quarter. Defense research and development has risen, although the defense budget has decreased over that time.
- The Fiscal Year 1993 budget reaffirms the President's commitment to science and technology. It proposes to spend \$76.6 billion for research and development, an increase of 3 percent over last year. Within this total, the conduct of civilian research and development would go up 7 percent, to over \$30 billion. Basic research would go up by more than a billion dollars, to \$14.3 billion, an increase of 8 percent.
- Specific Bush Administration actions in basic research include doubling the budget of the National Science Foundation, increasing support to individual investigators in our nation's colleges and universities, pursuing the human genetic code through the Human Genome Program, focusing on competitive research through the National Research Initiative in agriculture, and building the major facilities -- such as telescopes, satellites, and particle accelerators -- that will take scientists to the frontiers of their fields.
- Funding increases are only one measure of the Administration's commitment to research and development. It has also organized special interagency Presidential Initiatives in areas of particular promise and importance. It has sought to speed the transfer of technology from federal laboratories to private industry. And it has worked to create an economic climate in which industries can invest in the research and development that will keep them competitive.
- The Bush Administration sees these actions as vital investments in the future of the nation. Nearly all the great post-war inventions -- computers, microelectronics, genetic engineering, fiber optics, to name but a few -- were "made in America." These inventions did not happen by accident. They were the results of the organized U.S. effort in science, the largest and most accomplished scientific effort in history.
- The United States has led the world into the modern age of science and technology. Now it is preparing to lead the world into a future of unlimited potential.

TECHNOLOGY FOR A PRODUCTIVE AMERICA

- Our world has been created by the technologies developed over the last 150 years, many of which have been American in origin. However, continued improvement in our standard of living will not happen automatically. The President has issued a challenge that this Nation rededicate itself to the goal of leading the world in the continuous technical revolution of our times.
- The Bush Administration, through its strong support for research and development, is firmly committed to this goal. For Fiscal Year 1993 the Administration is proposing \$17.3 billion for civilian applied research and development (R&D), an increase of 7 percent. The federal strategy is to invest in areas that support agency missions but also have broad applications in the private sector. This strategy is characterized by collaborative arrangements with industry and academia (such as the U.S. Advanced Battery Consortium).
- The FY 1993 budget presents Presidential Initiatives that will enhance research and development and help bridge the gap between discovery and commercialization, with concomitant creation of new and better jobs for American workers and increases in economic growth. Areas of special focus are biotechnology, high performance computing and communications, advanced materials and processing, and advanced manufacturing.
- Another important element of our technological excellence has been the role played by small startup companies in America. These small companies foster new industries every year, often achieving revenues of billions of dollars a year in a decade or less. Small high-technology companies also have been responsible both for creating a disproportionate share of new jobs in America and for a major share of innovations.
- However, economic growth depends on sustaining market growth and retaining market share for the industries that we launch. These factors depend less on innovations than they do on the art of continual improvement and on the ability to manufacture products with the highest possible quality. Severe challenges in these areas must be met.
- To retain world industrial leadership, we must continue our commitment to the discovery of basic knowledge and new understanding, to foster the timely translation of ideas and discoveries into new products, and to revive the great American tradition of manufacturing so that we not only start, but sustain and retain, great industries.
- The Bush Administration is firmly committed to these objectives. Specific federal programs have been designed and implemented to strengthen our research base, encourage collaborative efforts with industry in new technologies, and foster the building of a strong manufacturing base.

BIOMEDICAL RESEARCH

- The President's strong support for medical and life sciences research has brought us to the dawn of a new era, an era characterized by new methods for the prevention of disease and disability.
- The President believes that this effort must be sustained and expanded. An investment of \$10.6 billion is proposed for health research in FY 1993, an increase of 4 percent over last year and of 35 percent over the amount appropriated in FY 1989.
- New knowledge and new techniques for both prevention and treatment now promise a significantly improved quality of life at manageable costs. Advances are promised in many areas.
- Modern biological methods have brought new and improved vaccines within reach. A Children's Vaccine Initiative has now been launched with the expectation that 20 or more of the most common diseases of childhood will eventually be prevented with only a few doses of vaccine given at or shortly after birth. This would represent a major public-health advance for the United States and the rest of the world.
- Research will accelerate the development of new and improved drugs. Genetic engineering already enables drug manufacturers to offer products such as human insulin for diabetics that would be prohibitively expensive to produce by conventional means.
- The development of low-cost, simple diagnostic techniques will enable health-care professionals to detect disease more accurately, more reliably, and at earlier stages than ever before.
- Studies of the cause and reasons for progression of the common disorders of middle age and later life -- such as heart disease, cancer, diabetes, arthritis, cataracts, and Alzheimer's disease -- will lead to healthier life styles and better medical management.
- With more powerful diagnostic methods and improved modes of treatment serious illness can be forestalled -- thereby ensuring a higher quality of life throughout life while simultaneously decreasing health-care costs.
- Gene therapy is beginning to harness the tools of molecular medicine to cure inherited diseases by giving patients functionally correct copies of the genes they need to lead a normal life.
- The dramatic progress in decreasing death and disability due to high blood pressure illustrates the advances that can be expected in other areas. The combination of early detection and the use of diet, exercise, and drugs (when necessary) has reduced the mortality due to heart disease by 35 percent over the past 15 years.

THE FEDERAL COORDINATING COUNCIL FOR SCIENCE, ENGINEERING, AND TECHNOLOGY

- The Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) was established in 1976 to serve as a mechanism for coordinating science, engineering, technology, and related activities of the federal government that involve more than one federal agency. FCCSET also provides a forum for interagency discussion and acts to develop authoritative scientific and technological information and advice for the Executive Branch.
- With the strong support of President Bush, FCCSET has been reorganized and revitalized. The Council now consists of the Secretaries or Deputy Secretaries of 12 of the 14 Cabinet agencies and of the Administrators and Directors of the independent agencies involved with science and technology. It is chaired by the Director of the White House Office of Science and Technology Policy. (A membership roster is given in Attachment A.)
- FCCSET has established seven standing committees in specific areas of science and technology. (The committees and their chairmen and vice-chairmen are listed in Attachment B.) These committees bring together representatives from 21 different federal agencies (Attachment C) to coordinate their respective programs; resolve science, engineering, and technology policy issues; identify research areas requiring additional emphasis; and achieve more effective use of the resources and facilities of federal agencies.
- For the past several years, FCCSET has conducted, in close collaboration with the Office of Management and Budget, a number of cross-cutting analyses of programs and budgets in specific areas of science and technology. In preparation for the Fiscal Year 1993 budget, FCCSET conducted these "crosscuts" in five areas: High Performance Computing and Communications, Advanced Materials and Processing, Biotechnology Research, Global Change Research, and Mathematics and Science Education. Each of these areas has been adopted as a Presidential Initiative in the FY 1993 budget.
- FCCSET and its committees also carry out a number of activities in areas that are not directly related to the budget. Interagency working groups are examining topics ranging from coastal ocean research and misconduct in science to risk assessment and the structure of international science and technology agreements. In each case, the goal is to achieve consensus on fundamental assumptions and procedures that can then guide the actions of participating agencies and enable them to achieve more effectively their mission objectives.
- When FCCSET committees identify policy issues that transcend science and technology -- for example, where substantial economic, political, or international issues are involved -- they refer these issues on to the appropriate White House councils for resolution.
- Through his support for FCCSET, the President has reiterated his commitment to building the strongest possible federal science and technology enterprise.

ATTACHMENT A
FCCSET MEMBERS

Chairman

The Honorable D. Allan Bromley
Assistant to the President for Science & Technology and
Director, Office of Science and Technology Policy

Members

The Honorable Manuel Lujan, Jr.
Secretary of the Interior

The Honorable Edward Madigan
Secretary of Agriculture

The Honorable Robert A. Mosbacher
Secretary of Commerce

The Honorable Lynn Martin
Secretary of Labor

The Honorable Louis W. Sullivan
Secretary of Health and Human
Services

The Honorable James D. Watkins
Secretary of Energy

The Honorable Lamar Alexander
Secretary of Education

The Honorable Richard G. Darman
Director, Office of Management &
Budget

The Honorable William K. Reilly
Administrator, Environmental
Protection Agency

The Honorable Brent Scowcroft
Assistant to the President
for National Security Affairs

The Honorable Donald J. Atwood, Jr.
Deputy Secretary of Defense

The Honorable James B. Busey
Deputy Secretary of Transportation

The Honorable Anthony J. Principi
Deputy Secretary
Department of Veterans Affairs

Ambassador Reginald Bartholomew
Under Secretary for International
Security Affairs, Department of State

The Honorable Alfred DelliBovi
Under Secretary, Department of
Housing and Urban Development

The Honorable Richard Austin
Administrator, General Services
Administration

The Honorable Richard H. Truly
Administrator, National Aeronautics
and Space Administration

The Honorable Walter E. Massey
Director, National Science Foundation

ATTACHMENT B

FEDERAL COORDINATING COUNCIL FOR SCIENCE, ENGINEERING AND TECHNOLOGY COMMITTEES

Committee on Earth and Environmental Sciences

Chairman: Fred Bernthal, Deputy Director, National Science Foundation

Vice Chairmen: John Sayre, Assistant Secretary for Water and Science,
Department of Interior

Lennard Fisk, Associate Administrator, Office of Space
Science and Applications, National Aeronautics and Space
Administration

Committee on Education and Human Resources

Chairman: Admiral Richard Truly, Administrator, National Aeronautics
and Space Administration

Vice Chairmen: Luther Williams, Assistant Director for Education and Human
Resources, National Science Foundation

David Kearns, Deputy Secretary, Department of Education

Committee on Food, Agriculture and Forestry Research

Chairman: Harry C. Mussman, Acting Assistant Secretary, Department
(Acting) of Agriculture

Vice Chairmen: David O'Neal, Assistant Secretary of the Interior for Land and
Minerals Management

Michael Taylor, Deputy Commissioner for Policy, Food and
Drug Administration, Department of Health and Human
Services

Committee on International Science and Engineering Technology

Chairman: Reginald Bartholomew, Under Secretary for Security
Assistance, Science and Technology, Department of State

Vice Chairmen: Philip Schambra, Director, Fogarty International Center, National Institutes of Health, Department of Health and Human Resources

Margaret G. (Peggy) Finarelli, Associate Administrator for Policy Coordination and International Relations, National Aeronautics and Space Administration

Committee on Life Sciences and Health

Chairman: James O. Mason, Assistant Secretary for Health, Public Health Service, Department of Health and Human Services

Vice Chairmen: David Galas, Associate Director for Health and Environmental Research, Department of Energy

Erich Bretthauer, Assistant Administrator for Research and Development, Environmental Protection Agency

Committee on Physical, Mathematical and Engineering Sciences

Chairman: Walter E. Massey, Director, National Science Foundation

Vice Chairmen: Victor Reis, Director, Defense Research and Engineering, DOD

William Happer, Director, Office of Energy Research, Department of Energy

Committee on Industry and Technology

Chairman: Robert White, Under Secretary for Technology, Department of Commerce

Vice Chairmen: T S Ary, Director, Bureau of Mines, Department of Interior

W. Henson Moore, Deputy Secretary, Department of Energy

Ad Hoc Working Group on Risk Assessment

Chairman: F. Henry Habicht, Deputy Administrator, Environmental Protection Agency

ATTACHMENT C

PARTICIPATION IN FY 1993 BUDGET INITIATIVES BY AGENCY

<u>Agency</u>	<u>Global</u>	<u>M&S Ed</u>	<u>Adv Mat</u>	<u>Biotech</u>	<u>HPCC</u>
DOS	3		3	3	
DOD	X	X	2	X	X
DOI	X	X	2	2	
USDA	X	X	X	X	
DOC	X	X	X	X	X
DOL		3			
HHS	X	X	X	X	X
HUD	3	3			
DOT	3		X	3	
DOE	X	X	X	X	X
ED		X			3
DVA		3		X	
NASA	X	X	X	X	X
EPA	X	X	X	X	X
NSF	X	X	X	X	X
DOJ ¹				X	
AID ¹				X	
NRC ¹				X	
TVA ¹	X				
SMITHSONIAN ¹	X	X			

¹Is not a member of Full FCCSET.

²Participates in the crosscut but has no new program proposals for FY 1993.

³Participates in the FCCSET Committee but has no funding proposals for FY 1993 that fall within the scope of the crosscut.

HIGH PERFORMANCE COMPUTING AND COMMUNICATIONS

- In less than a lifetime, information technology has become the largest and the fastest growing industry in the world. The industry was largely created in America, and America continues to lead the world in information technology. The President is committed to maintaining and strengthening that lead.
- In the Fiscal Year 1992 budget, the President proposed an interagency initiative in High Performance Computing and Communications (HPCC). A total of nine agencies are participating in the program, with four concentrating on technology development and five focusing on applications. The Congress appropriated \$655 million for the initiative in FY 1992. For FY 1993, the President is proposing a budget of \$803 for the initiative, representing an increase of 23 percent.
- The program has three main goals. The first is to extend U.S. leadership in information technology. The second is to disseminate and apply HPCC technologies to serve national needs in economic growth, national security, education, and health and the environment. The third is to improve national industrial productivity by making HPCC an integral part of the design and production process.
- To achieve these goals, the program has adopted a number of strategies. It is fostering novel computer designs in which a single architecture can span the range from desktop to teraop (trillions of operations per second) models. It is pursuing "Grand Challenge" applications -- important problems throughout government and industry that are beyond current computing capabilities -- to achieve software innovations and serve major human needs. It is seeking to combine the power of major computing resources with extremely fast communications and to make that combination more widely available through a high speed National Research and Education Network (NREN). And it is developing the human resources needed for information technology in the United States through the support of basic research.
- The Initiative specifies ambitious technical goals. It will achieve a thousandfold increase in effective computing speed by making teraop machines not only available but also usable and affordable. It will also achieve a hundredfold increase in network speed by making multi-gigabit data communication possible through NREN.
- These four components of the program -- Computer Systems, Advanced Software Technology and Algorithms, the National Research and Education Network, and Basic Research and Human Resources -- are all poised for major advances.
- The program has enjoyed enthusiastic support from every relevant sector. The High Performance Computing Act of 1991, signed into law by President Bush on December 9, 1991, provides a strong Congressional endorsement for the initiative. The Computer Systems Policy Project, formed by the CEO's of twelve leading American computer companies, undertook a year-long review of the program.
- In time, this visionary initiative of the Bush Administration will be seen as a watershed event in computing. Its ultimate impact will far transcend even the ambitious scope of the present and proposed programs.

ADVANCED MATERIALS AND PROCESSING

- Materials science and engineering has become as fundamental to technology development as mathematics is to the natural sciences. Materials science and technology has a tremendous impact on fields all the way from manufacturing through medicine to some of the fundamental aspects of physics. In fact, research and development on materials has changed -- and will continue to change -- the way we live.
- Almost every industrial process in the United States is ultimately limited in its efficiency by the performance of some material -- particularly at high temperatures. It has been said that for every degree Fahrenheit that we could increase the temperature of the average industrial process, the annual national payback would be \$2 billion.
- The Administration's FY 1993 budget launches a Presidential Initiative on advanced materials and processing, coordinated across 10 agencies. This Advanced Materials and Processing Program (AMPP) will improve the manufacture and performance of materials to enhance the Nation's economic growth, security, industrial productivity, and quality of life. For FY 1993, the Administration is requesting \$1.82 billion for the program, an increase of 10 percent over FY 1992 levels.
- This increased research and development will focus on synthesis and processing -- areas that encompass the creation of new materials and processes, applied research and development to transfer laboratory achievements to pilot plants, and process integration with design and manufacturing requirements. This emphasis will help bridge the gap between the creation of new materials and their applications.
- The industries that use advanced materials and processes range from communications to aerospace. For example, composite materials will account for over 20 percent of the material in the next generation of commercial aircraft. Military aircraft such as the F-117 stealth fighter rely on composites technology for their low radar cross-section.
- In communications, silica optical fiber moved from being an experimental material in 1977 to the point that industry is now installing optical fiber cable at a rate of one million miles per year. Four fibers, two in each direction, carry 40,000 transatlantic telephone calls at one time, 1,000 times more than the copper cable they replace. The present optical system cost less than \$10,000 per circuit to install, compared to over \$1 million per circuit for copper cable.
- The Advanced Materials and Processing Program launched by the President reflects the recommendations of private sector organizations as well as the mission needs of the individual agencies involved. Interactions with the private sector will be emphasized as the initiative progresses to improve the synergism between the federal R&D program and industrial research activities.

BIOTECHNOLOGY RESEARCH

- Biotechnology has the potential to change and improve virtually every facet of American life, from the food we eat and the water we drink to the energy that fuels our machines and the materials from which they are constructed. In addition, it offers novel approaches to conquering disease, easing world hunger, and reducing environmental pollution.
- Biotechnology will also be a powerful influence on our nation's economic growth and industrial leadership. One analyst has estimated sales of biotechnology products at \$4 billion in 1991 with prospects for growth to more than \$50 billion within the next ten years. These advances will require careful planning across government agencies and close cooperation with the Congress and with the wide variety of industrial users of biotechnology.
- The President has proposed a National Biotechnology Research Program in the FY 1993 budget coordinated across 12 federal agencies. The goal of this Presidential Initiative is to extend U.S. leadership in biotechnology research and commercialization for the 21st century to enhance the quality of life for Americans and the growth of the U.S. economy. The President's FY 1993 budget requests \$4 billion for the program, an increase of \$271 million or 7 percent above the FY 1992 level.
- As we grow more experienced in cutting and splicing DNA, the material that carries genetic information from one generation to the next, the variety of applications becomes ever wider. Today, the powerful set of tools that we call biotechnology enables us to harness bacteria to produce safer, more effective drugs, such as recombinant human insulin for the treatment of people with diabetes and vaccines to protect children against flu.
- Another application of biotechnology can be seen in the dramatic results of bioremediation on the devastating oil spill in Valdez, Alaska. Bacteria were used to break oil into chemicals that would be harmless in the environment. Other bacteria are now being used to detoxify harmful waste and to recover valuable minerals from industrial runoff.
- Biotechnology offers new versatility to manufacturing and bioprocessing. Traditional methods for synthesizing fine chemicals or refining petroleum-based fuels often require high temperatures or high pressures. Biological processes that accomplish the same goals can take place under less demanding conditions, thus saving valuable resources.
- Most critically, biotechnology may be the key to solving world hunger through improved food production. Crop yields can be increased and food quality improved, while decreasing our farmers' dependence on harmful chemicals.
- The President's FY 1993 budget provides for the needed strengthening of research and development to meet these and other important goals.

THE U.S. GLOBAL CHANGE RESEARCH PROGRAM

- President Bush has long been committed to responsible stewardship of the Earth and has established a comprehensive strategy that includes the promotion of sound environmental policies and economic growth. A key component to the President's overall approach to global stewardship is a Presidential Initiative, initially launched in FY 1990, called the U.S. Global Change Research Program (USGCRP). The world's largest program of research and development on global change, the initiative is seeking to provide the best possible scientific and economic understanding of global change so as to produce a sound base of knowledge for policy decisions.
- Because of the President's belief in the importance of the USGCRP, the FY 1993 Budget requests \$1.32 billion for the program; this represents an increase of 19 percent over 1992. The U.S. commitment to the USGCRP has grown dramatically since its inception, doubling over the last three years.
- Central to the USGCRP is a balanced program of ground- and space-based research activities. In-situ and theoretical studies of physical, chemical, biological, and geological processes will be complemented by a space-based program to provide global observations of key environmental parameters.
- The main task of the USGCRP is to develop a predictive understanding of the Earth system, particularly with regard to the Earth's climate. This task is to be complemented by a program of economics research to better understand the economic factors and consequences of global change.
- The highest priority scientific and policy-related issue in this Presidential Initiative is to answer the questions of how and to what extent human activities are changing, or will change, the global climate system.
- The President's FY 1993 USGCRP continues to respond to the most critical scientific uncertainties identified by the science and impacts working groups of the Intergovernmental Panel on Climate Change (IPCC). It also continues to focus on four high-priority integrating themes: (1) Climate Modeling and Prediction, (2) Global Water and Energy Cycles, (3) Global Carbon Cycle, and (4) Ecological Systems and Population Dynamics.
- The President's FY 1993 USGCRP includes a rescoped Earth Observing Satellite (EOS) system based upon the recommendations of the EOS Engineering Review Committee and includes a small satellite and remotely piloted vehicles effort.
- The USGCRP is already providing important information on the scientific aspects of global change and will be providing direct benefits by anticipating and planning for impacts on commerce, agriculture, energy, resource utilization, and human safety.

MATHEMATICS AND SCIENCE EDUCATION

- Three of the six National Education Goals established by the President and the Governors following the historic 1989 Education Summit call for American students to improve dramatically their mathematics and science achievement by the year 2000.
- The AMERICA 2000 strategy, launched by the President in 1991, identifies four tracks for accomplishing national education reform and attaining the National Education Goals
- While primary responsibility for education will remain with the states and localities, the federal government has a significant role in achieving the National Goals, especially those related to mathematics and science achievement.
- The President's FY 1993 budget proposes \$2.1 billion for mathematics and science education in 11 federal agencies at all educational levels. This is an increase of \$137 million or 7 percent over FY 1992. Compared to FY 1990, the increase is 43 percent or \$633 million.
- The top priority in the President's initiative is precollege science and mathematics education. Funding is up 15 percent over FY 1992 and 123 percent over FY 1990.
- The single most important near-term action to improve mathematics and science education is to enhance the quality and enthusiasm of teachers now in the classroom. The President's FY 1993 budget proposes to double the number of federally supported teachers receiving high-intensity training to 45,000.
- The Presidential initiative aims ultimately to provide in-depth, up-to-date training for all of America's precollege science and mathematics teachers.
- Other major elements of the initiative relate to demonstrating the electronic dissemination of mathematics and science education programs and providing excess federal computer and scientific equipment for precollege mathematics and science education.
- The FY 1993 budget also provides resources for the United States to maintain its leadership in graduate research and education and to improve further its undergraduate mathematics and science.
- The growing international competitive challenge can be met successfully only by an American workforce that is second to none in mathematics and science achievement. At the graduate level, we are now first in the world. The Presidential Initiative puts the nation on course for our precollege students also to be first in the world by the year 2000.

THE PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY

- The President's Council of Advisors on Science and Technology (PCAST) was established by an Executive Order of the President in February 1990 to provide independent advice on matters of national importance involving science and technology. The Council reports directly to the President and is the Nation's highest-level independent advisory body in science and technology.
- The Council, which is chaired by the Assistant to the President for Science and Technology, is composed of 12 distinguished members of the private sector who span a very wide range of expertise and experience. A membership list is attached.
- Since its first meeting with the President at Camp David in February 1990, the Council has customarily met each month for a day and a half with Presidential participation. During its meetings, the President has raised a number of topics for the Council to consider, and PCAST has both responded to Presidential requests and raised issues that it considers to merit Presidential attention.
- The Council has also had extensive interactions with senior members of the White House staff and has met with a number of agency and department heads and other government officials and with industrial and academic leaders.
- PCAST has established a number of panels, each chaired by a Council member but drawing widely on the private sector for membership, that address issues raised by the President and other important concerns in science and technology.
- Through its discussions with the President, its meetings with other government officials, and the preparation of reports by panels and the full Council, PCAST has served as a vitally important source of private sector input for a wide range of issues and decisions that are under consideration at the Presidential level.

#

THE PRESIDENT'S COUNCIL OF ADVISORS
ON SCIENCE AND TECHNOLOGY

Members

D. ALLAN BROMLEY, Assistant to the President for Science and Technology, and Director of the Office of Science and Technology Policy, Executive Office of the President. (Chairman)

NORMAN BORLAUG, Distinguished Professor, Department of Soils and Crop Sciences, Texas A&M University.

SOLOMON BUCHSBAUM, Senior Vice President, Technology Systems, AT&T Bell Laboratories.

CHARLES DRAKE, Albert Bradley Professor of Earth Sciences and Professor of Geology, Dartmouth College.

RALPH GOMORY, President, The Sloan Foundation.

MARY L. GOOD, Senior Vice President, Research and Technology, Allied-Signal, Inc.

PETER LIKINS, President, Lehigh University.

THOMAS LOVEJOY, Assistant Secretary for External Affairs, The Smithsonian Institution.

THOMAS J. MURRIN, Dean, School of Business and Administration, Duquesne University.

JOHN McTAGUE, Vice President, Technical Affairs, Ford Motor Company.

DANIEL NATHANS, Professor of Molecular Biology and Genetics, Johns Hopkins University School of Medicine.

DAVID PACKARD, Chairman of the Board, Hewlett-Packard Company.

HAROLD SHAPIRO, President, Princeton University.

SMALL U.S. HIGH-TECHNOLOGY BUSINESSES

- Small businesses account for 99 percent of all establishments operating in the United States and employ 50 million people (non-farm). About 10 million people are directly employed in the high-technology sector; this figure does not account for those businesses that are dependent on high technology but provide services or low-technology products.
- There are about 75,000 small (having less than 500 employees each) high-technology firms in the United States. They have approximately 1.75 to 2.0 million direct employees engaged in key high-technology areas (with "high technology" being defined by standard governmental classification codes).
- This sector of the economy has some unique characteristics. Small high-technology firms innovate more than larger firms, producing two to four times the number of products and patents per employee and per R&D dollar and generating half of the major technical innovations, according to public studies. They create jobs and contribute two to three times their proportionate share of new jobs as compared to other economic sectors. They grow rapidly and, according to one survey of venture-backed firms, increase assets, export sales, and tax payments at 23 percent, 136 percent, and 233 percent compound annual rates, respectively. And they increase productivity of all businesses with innovative products (e.g., personal computers) and stimulate the formation of entirely new businesses.
- The life-cycle of a new high-technology enterprise follows a familiar pattern that begins with the "seed-level" investment (generally less than \$250,000), followed by "start-up" phase funding (typically \$500,000 to \$5 million or higher), after which the firm is either sold or "taken public" with a regulated offering of equity securities (an "IPO" or "underwriting").
- Informal, non-professional (or "angel") investors are the predominant source of funds in the high-risk, seed-level phase of small businesses, while professional venture capital sources generally become important in the start-up and later-stage phases of business development.
- Angel investors are very sensitive to high capital gains tax treatment and are not always exceedingly wealthy individuals. According to one study, one third of the informal investors surveyed earned under \$60,000 per year.
- The amount of available venture capital has declined 75 percent since 1986, and there is strong evidence that angel investment has also been sharply diminished, with new incorporations down by nearly 20 percent since the 1986 capital gains tax reform.

#

Payroll tax
Paperwork (IRS will simplify)



ASSOCIATE DIRECTOR
FOR NATURAL RESOURCES,
ENERGY AND SCIENCE

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

1/25/92

Bob Gately
file

NOTE TO ALLAN BRAMLEY -

The stuff you sent with
your memo "Grist for Your Mill" is
excellent & fantastic.

We should figure out as
many ways as possible to get this
stuff out in — at a minimum,

a.) you should use it at your press conference on
Wednesday

b.) we'll fold ~~it~~ it in to John Gardner's
"Bush Record" project

c.) we'll use it in FY 93 budget fact sheets

d.) I've given it to Tony Snow & speechwriters

THANKS to you, Tom R., & Steve Olson for use in S.O.U. → other speeches → Bob G.

THE WHITE HOUSE
WASHINGTON

May 8, 1992

MEMORANDUM FOR CLAYTON YEUTTER

FROM: D. ALLAN BROMLEY *Ana*

SUBJECT: Presidential Message on Inter-American Institute for
Global Change Research

I plan to travel to Montevideo, Uruguay, next week to sign an agreement formally establishing the Inter-American Institute for Global Change Research. The Institute is a major U.S.-led initiative that we should be proud to carry into UNCED. The Institute was suggested by the President in his closing remarks at the 1990 White House Conference on Science and Economics Research Related to Global Change; it is the most successful by-product of that conference to date. Following are some background notes on the establishment of the Institute and a few suggested talking points that might be included in a presidential message on the subject. I have also attached a draft press release for your use.

Background

The proposal to establish several regional research institutes to bring together the critical mass of resources and capabilities needed to address global change research was first presented by the United States during the White House Conference on Science and Economics Research Related to Global Change in April 1990 and was highlighted by President Bush during his closing speech. More recently, this concept has been endorsed by the United States during negotiations on a framework convention on climate change.

The United States has participated actively in promoting the establishment of the first of these institutes -- in the Western Hemisphere -- by: hosting (and chairing) the first developmental workshop in San Juan, Puerto Rico, in July 1991; providing funding and sending personnel to the international Interim Working Group; and chairing the second workshop for the development of the Institute, held in Mar del Plata, Argentina, in March 1992.

The United States has also participated in and supported meetings of scientific and legal experts to negotiate a legal agreement and scientific agenda for the Institute.

International Involvement

To date, twenty-one different countries from the Americas have participated at senior policy levels in the development of the Institute:

Argentina	Colombia	Guyana	Paraguay
Bahamas	Costa Rica	Jamaica	Peru
Brazil	Dominican Republic	Mexico	Suriname
Canada	El Salvador	Nicaragua	U.S.
Chile	Guatemala	Panama	Uruguay
			Venezuela

We expect that 8 or 9 of these countries (including the U.S.) will become founding members of the Institute by signing the agreement next week. Several others are expected to join within the year.

In addition to the countries of the region, the European Community, Germany, Italy, Japan, The Netherlands, Spain, and international organizations including the International Council of Scientific Unions (ICSU) and the Organization of American States (OAS) have actively supported the development of the Institute.

Signing Ceremony

A High-Level (ministerial-level) Meeting of the governments in the region will be held in Montevideo, Uruguay, on May 12-14, 1992, to sign the agreement formally establishing the Inter-American Institute. President LaCalle of Uruguay is hosting and will address the meeting.

Presidential Message

The President should take credit for the establishment of the U.S.-initiated Institute as soon as possible and preferably immediately after the signature ceremony in Uruguay. His remarks might include:

- o Today (May 13) my science advisor, Allan Bromley, signed an agreement in Uruguay together with representatives of several other governments of the Americas formally establishing an Inter-American Institute for Global Change Research.

- o This Institute is a direct outgrowth of a conference I held here in Washington in April 1990 when I called science leaders of the world together to find ways by which we might best undertake a program that would be worthy of our shared global stewardship responsibilities.**
- o As we agreed at the conference, developing a full and useful understanding of global change requires advances not only on a global scale, but also on a regional basis.**
- o I am proud to report to you today that the U.S. has worked with twenty other countries of the Inter-American region to put together an institute that will bring together the critical mass of resources and capabilities needed to address important issues of global change in this region of the world.**
- o We look forward to working with senior representatives in the areas involved to establish two additional regional institutes: one in the European/African region and one in the Western Pacific.**

Attachment

[DRAFT]
[May 8, 1992]

THE WHITE HOUSE

For Immediate Release

May 13, 1992

The President today is pleased to announce that the United States has joined with eight other countries of the Americas in signing an agreement that will formally establish an Inter-American Institute for Global Change Research. The institute will bring together the critical mass of resources and capabilities needed to address important issues of global change in the Western Hemisphere.

The agreement was signed by Assistant to the President for Science and Technology D. Allan Bromley at a meeting in Montevideo, Uruguay, hosted by Uruguayan President LaCalle.

The concept of a network of three regional institutes to study global change was proposed by the President in his closing remarks at the April 1990 White House Conference on Science and Economics Research Related to Global Change. Since then, the United States has actively participated in promoting the establishment of the first of these institutes, which will be located in the Western Hemisphere. The United States will also be working with senior representatives in the areas involved to establish institutes in the European/African region and in the Western Pacific.

The United States welcomes the establishment of the Inter-American Institute for Global Change Research as a major step toward better understanding the effects of humans on the global environment and as sign of our commitment to global stewardship.

#

THE WHITE HOUSE
WASHINGTON

April 17, 1992

MEMORANDUM FOR CLAYTON YEUTTER

FROM:

D. ALLAN BROMLEY *Alan*

SUBJECT:

Meeting Request regarding the Inter-American Institute
for Global Change Research

I would like to meet with you next week to bring you up to date on progress we have achieved toward establishing in mid-May the Inter-American Institute for Global Change Research (IAI), in advance of the UNCED conference.

A meeting of the countries of the inter-american region was held in Argentina two weeks ago and produced a draft legal instrument for the founding of the IAI. This draft is currently undergoing interagency review. The U.S. will host a final negotiating session on the legal instrument in Washington on April 28-29. We anticipate that the document will be signed at a high-level meeting of the countries in Brasilia on May 13.

The signature of the legal document formally establishing the IAI in mid-May puts us in an excellent position to highlight the IAI, and the U.S. role in it, at UNCED. I have attached a brief outline of a communication strategy that I think will help us make the best of this opportunity. I would be pleased to discuss this further at your convenience.

Attachment

cc: Marlin Fitzwater

Inter-American Institute for Global Change Research

Draft Outline - Communication Strategy

- | | |
|--------------------|--|
| April 28-19 | Final Negotiating Session
Washington, D.C. |
| May 13-14 | High-Level Meeting
Signature of IAI Founding Document
Brasilia, Brazil <ul style="list-style-type: none">o Issue Meeting Communiqueo Issue White House Press Release including statement by the President with reference to 1990 White House Conference on Science and Economics Research Related to Global Change*o White House Press Conference* |
| May 18 Week | <ul style="list-style-type: none">o Issue Cable to U.S. Embassies regarding establishment of IAI and instructing on briefings for Foreign Governmentso Briefings on IAI for U.S. Delegation to UNCED Conferenceo Prepare IAI Paper for Release at UNCED stressing U.S. Commitment |
| May 25 Week | <ul style="list-style-type: none">o Selected Congressional Briefings on IAI |
| June 1 Week | <ul style="list-style-type: none">o UNCED Conference |

*Alternatively, a press release/conference might be delayed until closer to UNCED.

THE WHITE HOUSE
WASHINGTON

January 16, 1992

Dear Jack:

Thank you for your letter of December 11, 1991, containing the draft announcement for the Council for Research Policy and Graduate Education (CRPGE)-OSTP Fellowship and your kind offer to introduce us to some key individuals in the State of Pennsylvania to discuss science and technology issues. Let me take these in order.

With respect to the draft announcement, I have no immediate comments but as you begin considering candidates I think that it is extremely important for you to work with us so that we can provide you with at least rough job descriptions for activities where we have need of the support of Fellows. Unfortunately, in the past we have on some occasions had Fellows selected without reference to their expected subsequent activities here in OSTP with the result that both they and we have been disappointed with the experience. I am convinced that by keeping in mind the specific openings that we have at any given period when the Fellow for that year is selected we can hope to achieve an optimum match between the interests and expertise of that Fellow and our activities here in OSTP.

We will look forward to working with you in this area and I have asked Tom Ratchford, my Associate Director for International and Policy Affairs, to work with you on this matter. He can be reached at 202/456-2894.

We are, of course, very much interested in working with you to obtain the most effective working relationship between your organization and the White House.

With respect to the second issue that you mention, we are very much interested indeed in getting you and the people you mention together with Dr. Joseph Broz, who has been heading up, as a White House Fellow and as my Special Assistant during this present year, our study on small high technology businesses. We have been able to assemble a reasonably complete data base and, on the basis of that data base, have been able to draw a number of conclusions, some of which are surprising. These conclusions lead us, both internally and in discussion with a number of other concerned persons throughout the Administration, to begin consideration of a variety of options designed to remove impediments to the growth of this component of our industrial sector. As I am sure you are already very much aware, the small businesses in this country are our competitive edge and, to a very disproportionate level, are responsible both for new job creation and for innovation.

If you would call my scheduling secretary, Ms. Marian Nida, at 202/456-7116, I am sure that we will be able to arrange a mutually convenient time for us to get together with you and your colleagues.

In the meantime, let me again say how much I appreciated your hospitality while in North Carolina and I look forward to meeting you here in Washington.

With all best wishes,

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Allan", written in a cursive style.

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

Dr. K. Jack Yost
Associate Vice President for
Research and Technology Transfer
The Pennsylvania State University
114 Kern Graduate Building
University Park, Pennsylvania 16802



RECEIVED

(814) 865-6331
FAX: (814) 863-4627

K. Jack Yost
Associate Vice President for
Research and Technology Transfer

The Pennsylvania State University
114 Kern Graduate Building
University Park, PA 16802-3396

01 DEC 30 P 2: 22

MAIL ROOM
December 11, 1991

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
Old Executive Office Building
Room 358
Washington, DC 20506

Dear Dr. Bromley:

As promised in my letter of November 19, 1991, herewith a draft announcement for the Council for Research Policy and Graduate Education (CRPGE) - OSTP Fellowship recently held by David Huber. We would hope to have a candidate for the 1992-'93 academic and/or fiscal year. As indicated in the announcement, we will seek candidates with backgrounds which should enable them to significantly contribute to OSTP's mission. Their host institutions would assume responsibility for costs associated with the fellowship appointment. From the host institution perspective, the experience would enhance fellows' knowledge of Washington, and their administrative skills.

CRPGE is most interested in continuing the fellowship. We believe that, as a representative of major research universities with strong technology transfer traditions, we are in a unique position to support both the "S" and the "T" elements of the OSTP agenda.

On another matter, Joe Broz contacted me pursuant to our dinner conversation at the CRPGE annual meeting. We are in the process of setting up a meeting to discuss science and technology issues of mutual interest. Subject to Joe's inclinations, my intention is to bring along the director of the Office of Technology Development in the Pennsylvania Department of Commerce, and a key person from the Naval War College/Global War Game science and technology cell.

Dr. D. Allan Bromley
December 11, 1991
Page Two

I would be pleased to respond to any questions and/or observations you might have regarding the draft fellowship announcement, either by telephone, or in person at your convenience.

Best wishes.

Sincerely,



K. Jack Yost
Chair, CRPGE

Attachment

cc: Tom Collins
Charles Hosler
Luis Proenza
David Shirley
Debra Stewart
Jennifer Wingard
John Yopp