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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: Correspondence Files

OA/ID Number: 62005
Folder ID Number: 62005-008

Folder Title:
D. Allan Bromley Correspondence - Presidential [1992]

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THE WHITE HOUSE

October 27, 92.

Dear Mr. President:

Occasionally it is heartwarming
to hear from friendly correspondents.
This appeared in the most recent
issue of The Scientist and I thought
that you might find it interesting.
Sincerely
D. M. A.

COMMENTARY

Science And The Presidency: 1993

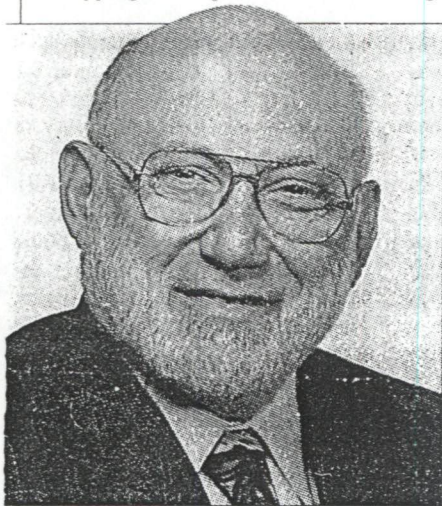
by Joshua Lederberg and Jesse Ausubel

Each four-year presidential election cycle frames an era of United States politics, including science in high politics.

The greenhouse effect, the *Valdez* oil spill, and biodiversity; AIDS, tuberculosis, and other emerging diseases; fetal tissue research, genome mapping, DNA patents, and DNA fingerprinting; chemical weapons and

unemployed Soviet bomb scientists; the space station and the supercollider: The past term has been a busy one for science in the White House.

The next term will be busy, too. Outstanding challenges include stopping the proliferation of high-tech weapons, rationalizing medical care systems, building a civilian technology agency, and effecting widespread improvements in secondary school education in math and science. Scientists will be particularly concerned about an informed sensitivity to the consequences of budget restrictions on investigator-initiated ("small") science.



JOSHUA LEDERBERG

Can the accomplishments and lessons of the past presidential term help set goals for the next?

The incumbent administration has given high priority to improving the processes of governmental decision-making about science, with notable and, it is hoped, durable accomplishments, among them:

- An articulate, accessible, vigorous presidential science adviser. Embedded in the complex political environment of the Oval Office, Allan Bromley has displayed command of many issues and worked constructively with diverse constituencies in academia and industry. He has energetically sought a balance in dealing with other White House units, the executive branch agencies, and the Congress; and he has immersed himself in budget battles when necessary. He has pioneered means for international cooperation in science by networking with science advisers to other governments and forming the Forum on Megascience in the Office of Economic Cooperation and Development.

- A strengthened White House Office of Science and Technology Policy (OSTP). With support from both the Congress and the president, OSTP has grown from a handful to a score of professionals, including extraordinarily well-qualified and respected associate directors.

- An active, high-level coordination of government programs of research. The Federal Coordinating Committee on Science, Engineering, and Technology (FCCSET) has successfully been reconstituted as the way the top R&D officials in all major government agencies work together. FCCSET has been notably effective in building better and more coherent government programs in global environmental change, supercomputing, data networking, and materials science.

Regardless of who wins the election, what should lead the science agenda during the presidential term that begins in 1993?

The main theme, in our opinion, is to take full advantage of the renovated capacity of the White House to obtain science advice, to analyze problems, and to apply scientific insights in government programs. For example:

- To direct the enhanced governmental decision-making apparatus for science to be as helpful in "science for policy" as in "policy for science." During the past four years, the moderating influence of the science adviser on the threats to the \$70 billion federal budget for research and development—the heart of federal policy for science—has been evident. The government's science and technology leadership should now exercise a constructive influence at the highest level on federal policies for environment, health, education, national security, and economic performance.

- To assemble a full, top-flight government science and technology team. Outstanding individuals must be recruited in a more timely way to the key posts calling for skills in science, engineering, and medicine. Sources such as John Trattner's *The Prune Book: The 60 Toughest Scientific and Technical Jobs in the Federal Government* (Lanham, Md., Madison Books, 1992) point out that dozens of the men and women whom the president appoints and the Senate confirms hold federal science and engineering leadership posts. But too often there has been "room at the top"—posts unfilled owing to lagging efforts to attract candidates, frustration and confusion over conflict-of-interest rules, and needlessly lengthy bureaucratic procedures. The science adviser, White House personnel office, Cabinet heads, and key members of Congress must work together to make sure the U.S. government is always putting a full, top-flight science and technology team on the field. The No. 1 priority for the president in 1993 is either the early reaffirmation of Bromley or the appointment and confirmation of his successor.

- To use the President's Council of Advisers in Science and Technology (PCAST) more effectively. This group, re-established three years ago, is a remarkable concentration of knowledge and experience from many fields and a unique resource for the president. A recently initiated PCAST study on American research universities and their relationship with the federal government, for example, is desperately needed if this critical and frayed partnership is to be repaired. Increasingly, PCAST should be challenged to advise on similarly difficult and important questions facing the next administration, such as how to convert technical military assets

in the U.S. economy to new purposes and how science and technology can be better applied to achieve both economic development and improved environmental quality.

Science and technology now pervade government. And the president had best be prepared.



JESSE AUSUBEL

Joshua Lederberg is co-chairman and Jesse Ausubel is director of studies of the Carnegie Commission on Science, Technology, and Government. In 1993, the commission will complete a five-year examination of organization and decision-making in science and technology in all branches of American government.

THE WHITE HOUSE
WASHINGTON

October 22, 1992

MEMORANDUM FOR THE PRESIDENT

FROM:

D. ALLAN BROMLEY *Alan*
THE ASSISTANT TO THE PRESIDENT
FOR SCIENCE AND TECHNOLOGY

SUBJECT:

PRESS RELEASE FOR ANNOUNCING THE
ESTABLISHMENT OF THE HIGH-PERFORMANCE
COMPUTING ADVISORY COMMITTEE

In accordance with Public Law 102-194, the President is required to establish the High-Performance Computing Advisory Committee. In conjunction with this mandate, I am forwarding a Press Release that announces the establishment of such a committee. This Advisory Committee would provide the Administration with advice and information on all areas of high-performance computing.

As the Press Release indicates, I recommend that I be authorized to form and select the members of the Advisory Committee. My office has extensively solicited nominations from the community, and we have prepared a list of qualified individuals. We have also kept Constance Horner's office informed of our intentions on the establishment of this committee.

We are under considerable Congressional pressure to have the Advisory Committee formed and appointments made.

Attachment

THE WHITE HOUSE
Office of the Press Secretary

For Immediate Release

October 22, 1992

In accordance with the High-Performance Computing Act of 1991 (Public Law 102-194, Dec. 9, 1991), the President today announced the establishment of the High-Performance Computing Advisory Committee. The purpose of the Advisory Committee will be to provide the Administration with advice on all areas of high-performance computing, including advanced computing, communications, and information technologies; scientific workstations; supercomputer systems; high-capacity and high-speed networks; special purpose and experimental systems, and applications and systems software.

The President has asked Dr. D. Allan Bromley, the Assistant to the President for Science and Technology and the Director of the Office of Science and Technology Policy to form and select the members of the Advisory Committee. The recommendations of the Advisory Committee will be considered in reviewing and revising the National High-Performance Computing Program (Sec.101, High-Performance Computing Act of 1991). In performance of their duties, the Advisory Committee will provide the Administration with an independent assessment of progress made in implementing the National High-Performance Computing Program; the need to revise the Program; the balance between the components of the Program; whether the research and development undertaken pursuant to the Program is helping to maintain United States leadership in computing technology; and any other high-performance computing issues identified to have national importance.

#

THE WHITE HOUSE

WASHINGTON

September 4, 1992

MEMORANDUM FOR TAMMY MARTIN
PRESIDENTIAL MESSAGES

FROM: D. ALLAN BROMLEY **DAB.**

SUBJECT: DRAFT PRESIDENTIAL MESSAGE TO INSTRUMENT
SOCIETY OF AMERICA (PHILA. CHAPTER)
50th ANNIVERSARY

I am delighted to send greetings to all those gathered for the 50th anniversary of the Philadelphia Section of the Instrument Society of America. Congratulations on achieving this milestone, particularly in light of your being one of the founding sections of the Society.

History shows us that advances in instruments and their applications have had major beneficial impact on the lives of our citizens and are often leading components of our economic engine. For example, the modern computer has gone from a large-scale device occupying several rooms to one which now sits on a desk top and even to single processor chips in our automobiles and appliances. They can be used in a host of activities from sophisticated calculations in science and engineering to aiding in automatic controls for the heating and lighting of our homes to achieve better energy efficiency. Robotics represent another example of the application of instrumentation and its controls to the betterment of society and a more efficient use of its resources. Your Society has been a recognized leader in these and other areas. The education, guidance and vision provided by you will continue to enrich and strengthen the United States, and indeed the world, in the years to come and into the 21st century.

Barbara joins me in sending best wishes for a memorable anniversary celebration and for every future success.

THE WHITE HOUSE

WASHINGTON

T
9/2

MEMORANDUM FOR DR. ALLEN BROMLEY
OFFICE OF SCIENCE AND TECHNOLOGY

FROM: TAMMY MARTIN
PRESIDENTIAL MESSAGES
456-2941 / 18-OEOB
FAX-456-2926

SUBJECT: REQUEST FOR A PRESIDENTIAL MESSAGE FOR THE 50TH
ANNIVERSARY OF THE INSTRUMENT SOCIETY OF AMERICA
PHILADELPHIA SECTION ON SEPTEMBER 16, 1992.

The White House has been requested to provide a message from
President Bush for the event described on the attached
correspondence.

May we please have talking points or a draft by COB September 4.

If you feel that a message from the President should not be sent,
please send a written explanation ASAP.

IT IS IMPORTANT THAT WE HAVE YOUR REPLY BY THE DUE DATE. Please
call me if you will have any problems meeting this deadline.

Thank you very much for your assistance.



Instrument Society of America

PHILADELPHIA SECTION

332345

Please reply to:

John N. McGrath
503 Long Lane
Hatboro, PA 19040

Presidential Correspondence
Old Executive Office Building
Room 94
Washington, DC 20500

Sept 19

Dear Sirs,

On September 16, 1942, thirty five men met in Philadelphia to form the "Philadelphia Society for Instrumentation". In March 1945, the Philadelphia Society for Instrumentation officially became the Philadelphia Section of the Instrument Society of America, one of the founding Sections of the ISA. The ISA has become an international organization dedicated to furthering the art and science of instrumentation, computers, measurement and control systems for the benefit of mankind.

The Philadelphia Section of the Instrument Society of America is pleased and proud to announce the celebration of the 50th anniversary of its founding, to be held on September 19, 1992 at the Guest Quarters Hotel in Plymouth Meeting, Pennsylvania.

May we have a congratulatory card or proclamation signed by the president to proclaim this proud event? This would contribute significantly to our celebration. You can forward it to me at the above address. Thank you in advance.

Sincerely yours,

John N. McGrath

ISA District 2 Vice-President-elect
Past Philadelphia Section President

★6554★ INSTRUMENT SOCIETY OF AMERICA (Instrumentation) (ISA)

PO Box 12277

67 Alexander Dr.

Phone: (919) 549-8411

Research Triangle Park, NC 27709

Glenn F. Harvey, Exec. Dir.

Founded: 1945. **Members:** 41,000. **Staff:** 100. **Budget:** \$16,000,000.

Local Groups: 235. Educational organization dedicated to advancing knowledge and practice related to the theory, design, manufacture, and use of instruments and controls in science and industry. Operates training center for industry; conducts symposia; develops standards; recognizes individual achievement. Maintains library, speakers' bureau, and placement service. **Automation and Technology Department Divisions:** Analysis; Automatic Control Systems; Computer Technology; Cryogenic Instrumentation; Electro-Optics; Maintenance; Management; Open Systems Interconnection Communication; Process Measurement and Control; Robotics and Expert Systems; Scientific Instrumentation and Research; Telemetry and Communication; Test Measurement; **Industries and Sciences Department Divisions:** Aerospace; Chemical and Petroleum; Food and Pharmaceutical; Glass and Ceramics; Marketing and Sales; Metals; Mining and Metallurgy; Power; Pulp and Paper; Textile; Water and Waste Water. **Telecommunications Services:** Fax, (919) 549-8288; telex, 802540 ISA DURM; toll-free number, (800) 334-6391. **Formerly:** (1939) American Society of Instrument Engineers; (1944) American Society for Measurement Control.

Publications: *Advances in Instrumentation and Control: Proceedings of the International Conference and Exhibit*, annual. Proceedings in three parts containing papers on recent developments in instrumentation and automatic control; illustrated with graphs and flow charts. **Price:** \$100/set for members; \$125/set for nonmembers. **ISSN:** 0065-2814. **Advertising:** not accepted. **Alternate Formats:** microform; online. • *Industrial Computing*, bimonthly. **Magazine.** **Circulation:** 45,000. **Advertising:** accepted. • *InTech*, monthly. Journal providing information on instrumentation and control in process industry; also covers some association news. Includes advertisers' index, book reviews, calendar of events, employment listings, new members, and new products and literature. **Price:** Included in membership dues; \$45 for nonmembers. **ISSN:** 0192-303X. **Circulation:** 56,000. **Advertising:** accepted. **Alternate Formats:** microform. • *ISA Directory of Instrumentation*, annual. Lists over 1500 manufacturers and over 1000 manufacturers representatives; includes product specifications and trade names. Also includes product category, manufacturers' specifications, product specifications, and product catalog indexes. **Price:** Included in membership dues; \$100/copy for nonmembers. **ISSN:** 0272-8141. **Circulation:** 42,000. **Advertising:** accepted. • *ISA Transactions*, quarterly. Transactions of papers on instrumentation and measurement in control engineering presented at recent ISA conferences, symposia, and technical meetings. **Price:** \$60/year for members; \$85/year for nonmembers. **Advertising:** not accepted. • *Standards and Practices for Instrumentation*, biennial. • Also issues 200 other publications including standards, books, and training aids; produces software and videotapes.

Convention/Meeting: semiannual conference (with exhibits) - 1991 (next) Oct. 27-31, Anaheim, CA; 1992 Apr. 28-30, Toronto, ON, Canada and Oct. 18-22, Houston, TX.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

September 4, 1992

MEMORANDUM FOR D. ALLAN BROMLEY

FROM:

LEE S. SCHROEDER *LS*

SUBJ:

DRAFT PRESIDENTIAL MESSAGE TO INSTRUMENT SOCIETY
OF AMERICA (PHILA. CHAPTER)--50TH ANNIVERSARY *ARY*

I am delighted to send greetings to all those gathered for the 50th anniversary of the Philadelphia Section of the Instrument Society of America. Congratulations on achieving this milestone, particularly in light of your being one of the founding sections of the Society.

History shows us that advances in instruments and their applications have had major beneficial impact on the lives of our citizens and are often leading components of our economic engine. For example, the modern computer has gone from a large-scale device occupying several rooms to one which now sits on a desk top and even to single processor chips in our automobiles and appliances. They can be used in a host of activities from sophisticated calculations in science and engineering to aiding in automatic controls for the heating and lighting of our homes to achieve better energy efficiency. Robotics represent another example of the application of instrumentation and its controls to the betterment of society and a more efficient use of its resources. Your Society has been a recognized leader in these and other areas. The education, guidance and vision provided by you will continue to enrich and strengthen the United States, and indeed the world, in the years to come and into the 21st century.

Barbara joins me in sending best wishes for a memorable anniversary celebration and for every future success.

OFFICE OF PRESIDENTIAL MESSAGES
REQUEST FOR CLEARANCE - COMMENTS

TO: Dr. Allen Bromley, OSTP 358

Teresa Gorman, OPD

Date Due:

10:00 am today

Date of Event:

May 5 -- TODAY

Subject:

Presidential message for the Offshore Technology Conference in Houston

Requested by:

Dept. of Energy

Background:

Presidential message attached for your approval

Copy of incoming request, FYI

Telephone clearance would be appreciated ASAP

Thank you.

Signature:

Tammy Martin

Date:

May 5

*Presidential Messages
Old Executive Office Building
Room 18
(202) 456-2941*

Your Recommendation/Comments:

Nancy Maynard called in "message looks fine as is" to Linda De Hart 5/5/92 at 9:50 a.m.

SIGNATURE:

DATE:

THE WHITE HOUSE

WASHINGTON

May 4, 1992

I am delighted to send greetings to all those who are gathered in Houston for the Offshore Technology Conference. Congratulations to your honorees who have contributed to technological advancements in the offshore drilling business.

As you know, the past few years have presented the oil and gas industry with considerable challenges. Drilling restrictions, environmental concerns, and a sluggish economy have all contributed to difficult times. Rest assured, my Administration recognizes the importance of a healthy oil and gas industry to this Nation, and we are working hard to help alleviate the problems that you currently face.

Since the beginning of this Administration we have deregulated natural gas prices, passed the first positive changes in the tax laws to stimulate drilling, and presented to Congress our National Energy Strategy. We are fighting to have that proposal passed by the Congress and are making good progress. However, we are not waiting on this important legislation. My Administration has already identified more than 100 steps that we can take at the Executive level, which will increase production of oil and gas and use our existing reserves more efficiently while relieving the burden of excessive regulation.

Having served in your exciting industry some years ago, I am both heartened by and proud of advances in technology that have led to further oil and gas discovery with fewer wells and less damage to the environment. I congratulate you on your exemplary efforts to meet America's need for greater energy productivity and security, and send best wishes for an enjoyable and productive convention.

THE WHITE HOUSE
WASHINGTON

May 4, 1992

MEMORANDUM FOR LINDA DEHART

FROM:

MELISSA TEMELES *MT*

SUBJECT:

Presidential Message for the Offshore Technology Conference

*May 5
Assigned to MJS*

Draft attached

Attached is a draft Presidential message that Secretary Watkins has requested for the Offshore Technology Conference. Because the conference begins tomorrow, we would like to have the message by late tonight or early tomorrow morning. I realize this is very short notice, but the request was just received by our office today. Thank you.

Attachment

*Because of imp. of this
issue and GB's personal
involvement in it, I
believe we'd better do -
sg*

0#714681

Handed with GB 25TP4 Doc

DRAFT PRESIDENTIAL MESSAGE FOR OFFSHORE CONFERENCE

Mr. Chairman, please accept my apologies for being unable to attend this year's Offshore Technology Conference. I am with you in spirit as you award those individuals and companies who have contributed so much to the technological advancements in the offshore drilling business.

Perhaps if we had this kind of technology when I was in the offshore business, I would have stayed in it and been out there in the crowd rather than sending you this message.

The last few years have been difficult for the oil and gas industry and I know that. Drilling restrictions, environmental challenges, a shaky market, and uncertainty about the taxes and rules Washington lays on you have all contributed to some tough times in your industry.

But believe me, we are working to alleviate those problems just as quickly as we can. Since I came into office, we have decontrolled the price of natural gas, passed the first positive changes in the tax laws to stimulate drilling, and presented to the Congress and the Nation our National Energy Strategy.

That strategy, born after 18 months of public hearings, study, and hard work, is a balanced, comprehensive strategy to address this nation's energy problems for the next 20 years. No one else has come up with anything better. We are currently fighting to have that proposal pass the Congress and are making good progress. I am pleased that, as I had requested, the House Ways and Means Committee agreed to an amendment during its consideration of energy legislation on April 30th which would allow for alternative minimum tax (AMT) relief for oil and gas producers.

But we are not waiting on legislation to pass. Already we have identified over 100 items that we can do administratively which will increase production of oil and gas, use our existing reserves more efficiently, and relieve the mountains of regulation your industry faces.

Advances in technology have led to more oil and gas being discovered with fewer wells and less damage to the environment. Your conference highlights that. But there is a long way to go to get to the point where America has all the energy it needs, either from within its borders or from secure sources. Technology will help us get there and I commend you and your awardees today for your help.

OFFICE OF PRESIDENTIAL MESSAGES
REQUEST FOR CLEARANCE - COMMENTS

TO: Lisa Jaeger, OPL

Dr. Allen Bromley, OSTP 258

Date Due: August 26, 1992

Date of Event: NEEDED AUGUST 28 FOR PRINTING

Subject: Presidential message for the National Science Scholars Program

Requested by:
Department of Education

Background:

Presidential message attached for your approval.

Copy of incoming request, FYI.

Telephone clearance would be appreciated **ASAP**.

Thank you.

Signature: Tammy Martin

Date: August 26, 1992

*Presidential Messages
Old Executive Office Building
Room 18
(202) 456-2941*

Your Recommendation/Comments:

Good

SIGNATURE:

[Signature] Acting Director

DATE:

8/27/92

THE WHITE HOUSE

WASHINGTON

August 24, 1992

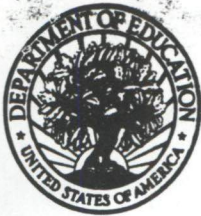
I am pleased to inform you that you have been selected as a National Science Scholar. Congratulations.

Under the National Science Scholars Program, you will receive an academic scholarship for the 1992-93 school year. As you know, the National Science Scholars Program, which was proposed by the Administration in 1989 and authorized a year later, awards scholarships to graduating high school students or to recipients of General Education Development (GED) certificates who have demonstrated excellence in mathematics, in engineering, and in the physical, life, and computer sciences. You have been selected for this award because of your outstanding accomplishments at the secondary level and because of your commitment to pursuing a post secondary education.

As intended, the National Science Scholars Program is contributing to the fulfillment of America 2000, our National strategy to achieve excellence in education by the 21st century. One of the key aims of America 2000 is to make American students the first in the world in mathematics and science achievement, and I am delighted that our Nation can count on your help in achieving that goal.

Within several days, you will receive a letter from the Department of Education providing you with more detailed information regarding your selection.

Congratulations again on your outstanding achievement, and best wishes for a successful and rewarding future.



UNITED STATES DEPARTMENT OF EDUCATION

OFFICE OF THE SECRETARY

August 5, 1992

#344921

Linda DeHart
Presidential Correspondence, Room 18
Old Executive Office Building
The White House
Washington, DC 20500

Aug 28
Assign to: LW 9/2
FD draft attached

Dear Linda:

I am forwarding for White House review and approval a draft of the Presidential letter which we would appreciate being sent to the recipients of the National Science Scholars Program merit awards.

The National Science Scholars are chosen by the Department of Education and the National Science Foundation. We would be grateful if the President would again notify the recipients of their selection, as he did in 1991. The language of this letter is similar to the one approved last year.

Because we plan to make the awards by September 30, it would be helpful if we could have the letter approved by August 21, so they may be prepared and mailed by the end of August.

Thank you for your assistance.

Sincerely,

Rebecca O. Campoverde

Rebecca O. Campoverde
Deputy Chief of Staff and Director
of Executive Secretariat

ROC/jm

Enclosure

C# 498336

Clear final with Colvin & Apparis

Draft Presidential Letter for recipients
of the National Science Scholars Awards Program
for the 1992-93 academic year

August , 1992

Dear National Science Scholar:

It gives me great pleasure to inform you that you have been selected as a National Science Scholar and will receive a scholarship under the National Science Scholars Program for the 1992-93 academic year. You have been chosen for this award because of your outstanding accomplishments at the secondary level and your demonstrated motivation to complete a postsecondary education at a high level of academic achievement in a scientific discipline.

The National Science Scholars Program recognizes excellence and achievement in mathematics, in engineering, and in the physical, life, and computer sciences by providing scholarships to meritorious graduating high school students or General Education Development (GED) certificate recipients to enable them to continue their studies at the postsecondary level.

The National Science Scholars Program is contributing to the success of AMERICA 2000, our strategy to reach the six National Education Goals by the year 2000. By striving for academic excellence, you are helping America meet Goal Four of the national goals — to become first in the world in science and mathematics achievement.

Within a few days, you will receive a letter from the U.S. Department of Education providing you with more detailed information regarding your selection as a National Science Scholar.

Congratulations on your selection, and best wishes for a successful and rewarding future.

Sincerely,

George Bush

OFFICE OF PRESIDENTIAL MESSAGES
REQUEST FOR CLEARANCE - COMMENTS

TO:

Dr. Allan Bromley, OSTP 358 ✓

Mark Albrecht, Space Council 423

Date Due:

August 27, 1992

Date of Event:

AUGUST 28-29 / DUE ASAP TODAY

Subject:

Presidential message for the fifth annual and final meeting of the Space Agency Forum on International Space Year.

Requested by:

OFFICE OF SCIENCE AND TECHNOLOGY POLICY

Background:

Presidential message attached for your approval.

Copy of incoming request, FYI.

Telephone clearance would be appreciated ASAP.

Thank you.

Signature:

Tammy Martin

Date:

August 27, 1992

Presidential Messages
Old Executive Office Building
Room 18
(202) 456-2941

Your Recommendation/Comments:

Please make 4 changes indicated.

SIGNATURE:

Allan Bromley

DATE:

8/27/92

THE WHITE HOUSE

WASHINGTON

August 27, 1992

I am delighted to send greetings to all who gather here in Washington, D.C. for the fifth annual and final meeting of the Space Agency Forum on International Space Year.

When the United States Congress proposed, seven years ago, that 1992 be designated International Space Year, expectations and spirits were high. Thanks, in large part, to the work of SAFES, such expectations were met -- even exceeded -- and spirits are still high with a rightful sense of achievement and hope.

The growth of your ^{forum} ~~agency~~ from 17 to 29 member agencies and 10 affiliates has clearly affirmed both the importance of your work and the value of international cooperation on space and the environment. Since 1988, your fine education and outreach projects, such as "Space Age" and Global Change Video, have greatly enhanced young people's knowledge of both space exploration and the earth itself. You have faithfully served the scientific community through efforts like the World Forest Watch and the Enhanced Greenhouse Effect Detection Project, and through your sponsorship of training programs in Asia and Africa, you have enabled the peoples of those regions to increase their capacity for environmental assessment.

I am delighted that members of ~~SAFES~~ share our commitment to continuing progress in education, space exploration, and the earth sciences, and I congratulate each of you on this very successful International Space Year.

Best wishes for a productive meeting.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

August 24, 1992

MEMORANDUM FOR LINDA DEHART

FROM:

D. ALLAN BROMLEY

SUBJECT:

PRIORITY REQUEST FOR PRESIDENTIAL MESSAGE

*Aug 28-29 8/25
Assign to SL
OSTP draft attached
D. Allan Bromley
EPB*

As a result of a congressional initiative in 1985 and subsequent endorsement of both Presidents Reagan and Bush, 1992 has been designated the International Space Year (ISY). In order to coordinate a comprehensive education and scientific program for ISY among the world's space agencies, the Space Agency Forum on International Space Year (SAFISY) was established in 1988. The U.S., through NASA, will be hosting the fifth annual meeting of SAFISY on August 28-29, 1992, in Washington, D.C. This is planned as the final meeting of SAFISY.

SAFISY's membership consists of 29 space agencies and Ministries from around the world, as well as 10 affiliated organizations with space interests. A broad program of activities in education, space science, and Earth science has been coordinated by SAFISY and is underway. This final meeting of SAFISY will be chaired by Professor Hubert Curien, French Minister for Research and Space, a strong proponent of international space cooperation.

President Bush has previously endorsed ISY, both in a January 31, 1991, letter to Congress forwarding a report on ISY (attached) and in a January 24, 1992, media event involving the Young Astronaut Society.

In view of the U.S. origin of the concept of ISY and the U.S.-hosting of this meeting during 1992, it is highly appropriate for the President to send a message to the participants. A suggested text for such a message is also attached.

Please contact Ralph Brescia, my Special Assistant, if you need additional information.

Attachment

*Clear final 2 - OSTP's Space Council - Brocky
C# 800701*

DRAFT PRESIDENTIAL STATEMENT TO
THE SPACE AGENCY FORUM ON INTERNATIONAL SPACE YEAR

I am pleased to offer my personal welcome to the delegates participating in the fifth meeting of the Space Agency Forum on International Space Year (SAFISY).

In 1988, NASA hosted the first meeting among space agencies to consider International Space Year activities. Out of that meeting, SAFISY was formed. In 1988, there were 17 space agencies represented--now there are 29 members and 10 affiliate members, indicating the value attached to international space cooperation around the world.

ISY celebrates the themes of global cooperation, discovery, exploration and education. The projects sponsored by SAFISY have built on these themes to identify activities in space and earth sciences, as well as education and training. The projects include analysis of scientific data, conferences to report on scientific results, educational programs to inspire young people to pursue careers in math and science, and public outreach to stimulate interest in space. All of these projects have been enhanced through international coordination.

I applaud the activities of SAFISY, and send my best wishes for another successful meeting as you review the fruits of your labors to promote worldwide recognition of a new era of global cooperation in space.

THE WHITE HOUSE
WASHINGTON

August 12, 1992

MEMORANDUM FOR THE PRESIDENT

FROM:

D. ALLAN BROMLEY

Alan

SUBJECT:

THE REPORT OF YOUR PCAST PANEL ON SCIENCE,
TECHNOLOGY AND NATIONAL SECURITY

The PCAST Panel, cochaired by Drs. Sol Buchsbaum and John Foster, Jr., has completed its study of the roles of science and technology in the vastly changed national security environment in which -- thanks in substantial measure to your activities -- we find ourselves in the post Cold War era. There are major opportunities here as well as major potential pitfalls.

The Panel members have brought a broad range of expertise and experience to their task and I am happy to transmit their report to you with the unanimous support of the entire PCAST. We would welcome the opportunity, perhaps at our next meeting, to discuss this report with you or expand at any time on any section or sections of the report.

Enclosure

THE WHITE HOUSE
WASHINGTON

August 4, 1992

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY 
SUBJECT: INTERNATIONAL FAMILY PLANNING

In your correspondence with David Packard, letter dated June 26, 1992, you indicated to him your desire to get out a strong statement of support for international family planning. I am most supportive of such an action.

Although much more could and should be done internationally in family planning, it is important to note that significant progress is being made and that the United States can take a measure of pride in its contributions to that effort. Draft material for a statement is attached.

Attachment

DRAFT POPULATION STATEMENT

Continued growth in world population beyond manageable levels threatens the global environment. It taxes the ability of governments and societies in their efforts to provide adequate health services, education and suitable employment for their citizens. It can create insoluble problems of urbanization and migration.

World population has doubled, in just 30 years, to 5.4 billion persons -- 95% of that population growth is occurring in the developing countries of Africa, Asia and Latin America. Those countries themselves recognize this problem. Today, 66 nations with more than 90% of the developing country population have policies that encourage slower population growth. They are expending some four billion dollars a year, only a quarter of which is received from international sources.

The United States has demonstrated international leadership in meeting the challenge of population growth. It supports population activities in 95 countries and provides 30% of all international population assistance funds. Through the U.S. Agency for International Development and in cooperation with both private and government agencies, more than 150,000 medical and paramedical personnel in 120 countries have been trained in family planning methods; new educational approaches in fostering sexual responsibility have been introduced; and safer and more effective contraceptive methods have been developed. Today, the U.S. provides three-fourths of the developing world donor-provided contraceptives.

Greater efforts must be made but much has been achieved. Over the past 25 years, fertility rates have dropped in every region of the world -- by 60% in Thailand and South Korea; by 40% in Mexico and Brazil; and by 17% in Kenya. The overall fertility rate in AID-assisted developing countries has dropped from 6.0 children per family to 3.85.

Surveys show that as many as 65 to 75% of women in developing countries either want no children now or desire to limit the size of their families. However, only half of them have reasonable access to voluntary family planning services of satisfactory quality. Such services, by preventing births at too frequent intervals or to women who are at high risk because of age, would have an important impact on the health of both mothers and young children. It has been conservatively estimated that the deaths of more than 200,000 women and as many as 3 million children could be averted if family planning services were made universally available.

Family planning today is one of the world's most important challenges. We support the right of a couple to choose the number and spacing of children as a basic human right, at the same time recognizing that each sovereign nation must respond to its own specific needs and cultural and religious values. We seek a future in which population is in reasonable balance with expanding resources and sustainable development in the global community. We seek a community in which women are more effectively and more fully integrated into the economy of nations; in which education and

opportunity are widely available to all; and in which the number of maternal and infant illnesses and deaths are lowered through the availability of quality, affordable services that promote improved health, responsible parenthood and a productive family.

This problem is of vital importance to our own and to the world's well-being. It deserves special attention. To assess what additional measures might be taken, I propose to establish a blue-ribbon commission on "Population Growth and the Future" to initiate a national discussion on international population issues and to identify alternative mechanisms to achieve early stabilization in population growth. I will ask the commission, as well, to explore the feasibility of developing an international consensus on the population problem so that all countries might share in the commitments and contributions of necessary resources.

THE WHITE HOUSE
WASHINGTON

July 29, 1992

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY 

SUBJECT: IMMUNOSUPPRESSIVE ILLNESSES WITHOUT EVIDENCE
OF HIV VIRAL INFECTION

Sam Skinner recently suggested that you would be interested in a status report on AIDS-like disease that does not appear to be associated with either of the two viral types, HIV-1 and HIV-2, that are characteristically present in AIDS patients. The concern, of course, is that cases of this nature might signal the outbreak of a totally new form of the AIDS disease based on a virus that is not detectable by any of our current tests.

The press has prominently featured reports of a number of persons with such immunosuppressive disease without evidence of HIV infection. (Please see the attached example.) This press interest was in part, stimulated by reports presented at a recent international conference in Amsterdam. Government credibility as well as the safety of our nation's blood supply and the validity of HIV testing have been called into question in these press reports worldwide.

Without minimizing the seriousness with which all Government authorities view such reports, it is critical that these observations be kept in perspective. At present, there are not more than 25 to 35 cases known to have occurred worldwide. Contrast this to the occurrence to date of 230,000 cases of AIDS in the U.S. and an estimated 1,000,000 persons infected with HIV and it is apparent that the problem (if there is a problem) is, at present, minuscule. Efforts are being made by CDC to elicit additional reports, if any.

The cases to date have been characterized by an abnormally low count (<300 per mm^3) of the so-called "CD-4" white cells (infection fighting cells which are commonly low in AIDS patients) and, sometimes in patients having opportunistic infections of the type observed in AIDS patients. None of these patients have shown the presence of antibodies to HIV or the presence of the virus itself. Some of these unusual cases have occurred among high-risk groups (drug abusers and homosexuals) but some have occurred in individuals without known high risk exposures. The patients report onsets of illness beginning at least as early as 1983. There are no apparent "outbreak" cases in any single geographic area or occurring over any particular short span of time.

What is not clear is whether the occurrence of such cases represents a new phenomenon or whether such cases may have been occurring sporadically over many decades. Such a determination is especially difficult because measurement of CD-4 cell levels did not begin until the late 1970's.

If there is, in fact, an unusual occurrence of such cases, a second question arises -- "were they caused by a virus?" Three investigators reported at the Amsterdam meeting that they had detected unusual viruses in certain of these unusual patients but available information suggests that each had identified quite different entities. From available information, it seems probable that two of the three laboratories (Gupta at the University of California-Irvine and Lawrence at Cornell University) are describing contaminants in their virus cultures, a not unusual problem in this field rather than new HIV-like viruses as they have suggested. Further information is awaited from the third laboratory.

Both the National Institutes of Allergy and Infectious Diseases and the Centers for Disease Control believe that the reports deserve careful scrutiny and have embarked on special programs to elicit additional reports of cases of the type noted, to conduct special virological studies on such patients, and to evaluate the nature of the viruses purported to have been isolated. A special meeting of leading scientific investigators will be convened by CDC within the next 10 days to permit public presentation and evaluation of all available data.

The personal, professional judgment of my Associate Director for the Life Sciences -- Dr. D. A. Henderson, an internationally renowned expert in the field of public health and the one person given the major credit for the elimination of smallpox from our planet -- is that the reports of occurrence of cases such as those described in the recent international meeting, otherwise lacking unusual or spectacular developments, generated an unwarranted level of media attention far out of proportion to the significance of the observations. Responses to media queries, unexpected and impromptu, failed to provide needed perspective or reassurance.

It is important now to proceed deliberately to make widely available such information as is available, to pursue appropriate epidemiological and virological leads, and to reassure the public, as may be appropriate, regarding the credibility of testing measures being used to protect the blood supply and to test individuals for infection. Such efforts will be orchestrated by CDC through the above mentioned public meeting, and through frequent published reports. Meanwhile, Dr. Henderson and I believe that it is appropriate to say that there is, at present, no substantive information which causes us to question the safety of our nation's blood supply or to question the validity of current routine testing procedures for HIV infection.

Attachment

THE DOCTOR'S WORLD

C.D.C. Is Embarrassed By Its Tardy Response To AIDS-Like Illness

By LAWRENCE K. ALTMAN, M.D.

Special to The New York Times

AMSTERDAM, July 27 — For officials of the Centers for Disease Control and other Federal health agencies, the international AIDS meeting here last week was an embarrassment because they had overlooked two fundamental principles of public health.

Those principles are swiftly investigating mysterious cases of an illness to determine their cause and rapidly communicating with the public and with scientists to allay alarm about the perceived threat.

The cases involve an AIDS-like illness without evidence of infection with H.I.V., the human immunodeficiency virus, which causes AIDS. The alarm centers on a threat to the nation's blood supply from what may be a new AIDS-like virus and alarm over how such a virus might spread.

From the meeting it was evident that the C.D.C., the Federal centers in Atlanta responsible for tracking AIDS and other communicable diseases, waited too long to issue a call to doctors to report such cases. The centers had collected six cases over the last two years, and their only report on them had been given last spring at a Colorado conference that severely restricted news coverage.

In their brief summary of the cases for the spring meeting, the C.D.C. authors, Dr. Thomas J. Spira and Bonnie M. Jones, said that "H.I.V. may not be the only infectious cause of" immunodeficiency. But they did not find a cause, and their abstract was not read by many researchers who knew of such cases and who were hot on the trail of a potentially new virus.

The C.D.C. has earned high marks for solving a myriad of epidemiological puzzles. A celebrated one was the discovery of the bacterium that causes Legionnaire's disease.

But in recent months, the C.D.C.'s image has been tarnished by its handling of major AIDS issues. For example, after announcing that it would issue a new definition of AIDS, the C.D.C. quietly shelved the plan in June, infuriating many state health officials, the very people whom the agency needs to work with most closely. At the time, officials said they needed more time for consultations before changing the definition.

Also, the C.D.C. has come under severe criticism for its handling of the issue of health-care workers infected by H.I.V.

In 1990, it published in its weekly report a small number of cases in which H.I.V. had been transmitted to patients of a Florida dentist who had AIDS. The C.D.C. then published guidelines calling on health-care workers infected with H.I.V. to stop performing certain procedures or to tell patients they were infected, an announcement that would be tantamount to ending a career.

The criticism came from the C.D.C.'s chief supporters, among them key infectious-disease specialists and leaders of other professional groups, who said it was impossible to draw up a list of procedures in which transmission of H.I.V. might occur.

The C.D.C. revised the guidelines but abandoned them after failing to gain approval from Health and Human Services officials in Washington.

Despite the setbacks, the criticism shouted by participants at the AIDS meeting here was astonishing.

It started after Dr. Jeffrey Laurence of Cornell University Medical School in New York City not only reported five cases of an AIDS-like illness but also said he had tantalizing clues suggesting that a new virus might be among them.

Dr. James Curran, the C.D.C.'s leading AIDS expert, followed, adding the agency's six cases. He asked aloud whether the C.D.C. should have published them earlier in its widely read weekly report, and he also put out a call for doctors to report additional cases. Participants shouted, "Yes!" because earlier reporting could have speeded up the recognition and investigation of the problem.

Then a number of European and American scientists stepped forward to report even more cases. The number was small, about two dozen. But the C.D.C.'s embarrassment was now huge because the agency had lost control over the dissemination of new information in the field of AIDS.

Medical Journals Are Warned

Also criticized were university scientists who had uncovered clues pointing to a potentially new AIDS-like virus but who had not shared that information with health officials because they were holding it for publication in scientific journals. The scientists were criticized for appearing



An agency's image has been tarnished by its handling of AIDS issues.

to put the desire for credit for their work ahead of public-health concerns.

Dr. Anthony S. Fauci, the head of the National Institute of Allergy and Infectious Diseases, a Federal agency in Bethesda, Md., sternly warned scientists and medical journal editors against continuing the practice.

Many journals penalize authors who disclose information before it is published. Although journals say they exempt information concerning public health, scientists are keenly aware of instances in which researchers provided the C.D.C. with data only to see their reports rejected by prestigious medical journals. For example, The New England Journal of Medicine refused to publish the first report of a case of AIDS from a blood transfusion because the case had already

been reported in report. Now Dr. scientists to hold their pledge to v matters of public

If a new virus what about the s supply? reporters

The questions reassurance from number of other cluding Dr. James the National AIDS Washington, and I co-head of the Na on AIDS.

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But Dr. Curran factors for the AII unknown. He and scientists and repc the AIDS model by scientific evidence cases were caused spread like H.I.V.

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been reported in the centers' weekly report. Now Dr. Fauci was telling scientists to hold journal editors to their pledge to waive such rules in matters of public health.

If a new virus was on the loose, what about the safety of the blood supply? reporters asked.

The questions drew responses of reassurance from Dr. Curran and a number of other health officials, including Dr. James Allen, who directs the National AIDS Program Office in Washington, and Dr. June Osborn, the co-head of the National Commission on AIDS.

There is no cause for concern, Dr. Osborn and Dr. Allen said repeatedly, because blood banks have systems to screen out potential blood donors who are at risk for H.I.V.

But Dr. Curran said that the risk factors for the AIDS-like illness were unknown. He and others cautioned scientists and reporters not to invoke the AIDS model by assuming, without scientific evidence, that the AIDS-like cases were caused by a virus that is spread like H.I.V.

"It is so easy to slip into this AIDS mentality because we are talking

about it at an AIDS conference and we have AIDS researchers doing the work," Dr. Curran said, adding, "This is not AIDS caused by something else."

But when health officials acknowledged under the pressure of repeated questioning that there was a gap in their logic and that they had no scientific evidence to support their contention that such a virus was not being spread through the blood supply, they changed their tune. A scientific investigation is now a high priority, Dr. Curran said. They continued to say that the blood supply seemed safe because the number of cases reported is small, about 30, and most independent experts agreed.

Last winter, C.D.C. officials said to this reporter that Dr. Sudhir Gupta of the University of California at Irvine had told them he might have found a new virus among such cases but that he had declined to share the data with them until his paper was published. At the time, Dr. Gupta also refused to discuss his findings with this reporter because Dr. Gupta said it would be improper to do so until the paper was published in a peer-reviewed journal.

His report is due to appear next month in The Proceedings of the National Academy of Sciences, which is not a peer-reviewed journal in the usual sense because papers are sponsored by members of the organization. But, responding to Dr. Fauci's plea, the editor released the paper last week. In it, Dr. Gupta said he had detected a virus in a 66-year-old woman with an AIDS-like illness and her healthy 38-year-old daughter.

Dr. Gupta raised the issue of transmission of the virus through blood because the mother's only risk factor was a transfusion in 1949 or 1950. Experts at two news conferences here scoffed at the prospect of a four-decade interval from infection to AIDS-like symptoms.

But most scientists would have scoffed at a 10-year incubation period before AIDS was discovered, the experts were told, and they conceded that a very long interval could not be dismissed so readily without an investigation.

The situation was reminiscent of 1981, when AIDS was discovered after the recognition of fewer than a dozen cases of a puzzling syndrome of Kaposi's sarcoma, an unusual cancer, and immune deficiency in gay men. At the time, no C.D.C. or Federal health official predicted the huge worldwide epidemic of AIDS.

Dr. Curran insisted that the analogy was incorrect. The new cases, he said, were not clustered in time or concentrated in a particular region or in distinct groups, as were the first cases of AIDS that were recognized among gay men in New York and California.

Some participants suggested that Federal health officials were striving to avoid any controversies related to AIDS during a Presidential campaign.

For every 10 preliminary reports of what seems to be a new epidemic, only one usually turns out to be real. The only way to rule out the nine false ones is to investigate all suspect reports as soon as possible.

Because quick communication goes far in calming public anxiety, health officers usually start by calling a news conference to tell the public how they plan to check out a problem.

Dr. Jonathan Mann, the conference co-chairman and a state epidemiologist in New Mexico, said: "The worse thing you can do in an epidemic is say, 'Relax, don't worry, we are sending a team next week,' because the perception is health officials don't care, and rumors get out of control."

The New York Times
is as close as your
nearest newsstand.
Or have it delivered.

THE WHITE HOUSE
WASHINGTON

July 14, 1992

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY



SUBJECT: YOUR SCIENCE AND TECHNOLOGY REPORT

As you know, the National Science and Technology Policy Organization and Priorities Act of 1976 (42 U.S.C. 6615) requires that you submit to the Congress a biennial report on science and technology.

I am pleased to enclose herewith the final published version of the most recent report which includes your transmittal letter dated March 17, 1992. The contents of the report have been cleared by OMB through the usual interagency process.

In the past these reports have tended to be simple compilations of contributions submitted by the different Federal agencies. Although informative, they have lacked coherence or any overall pattern; they also have not been widely read.

Because I believe that your Administration has built an outstanding record of accomplishments in science and technology, I have changed the format of this year's report so that it no longer attempts to be inclusive but does strive for substantially improved coherence and readability. The report was prepared with widespread cooperation and coordination throughout the Administration and serves both as a summary of the accomplishments of your Administration in science and technology as well as an outlook on the future in a number of key areas. I believe that we have a great story to tell.

Copies of the report have been made available to Members of the House and Senate, to senior members of your Administration, to a broad cross section of industrial leaders, to each college and university across the Nation and to a selected cross section of senior scientists and engineers. The response has been very gratifying.

We are also planning a media distribution in cooperation with Marlin Fitzwater's office.

Your strong and vigorous support for science and technology has been critical to all this activity and is widely recognized. I should like to express to you both my personal thanks as well as that of both the scientific and technological communities.

I enclose also a brief, more popular brochure that was prepared in response to a continuing demand for a document describing in outline the activities and functions of the Office of Science and Technology Policy. It was fully cleared by OMB and it also has been very well received.

I shall be happy to provide any further information that might be of interest to you in connection with either of the enclosed documents.

Enclosures

THE WHITE HOUSE

WASHINGTON

June 22, 1992

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY *D. Allan*

SUBJECT: A PCAST REPORT ON HIGH PERFORMANCE COMPUTING
AND COMMUNICATIONS

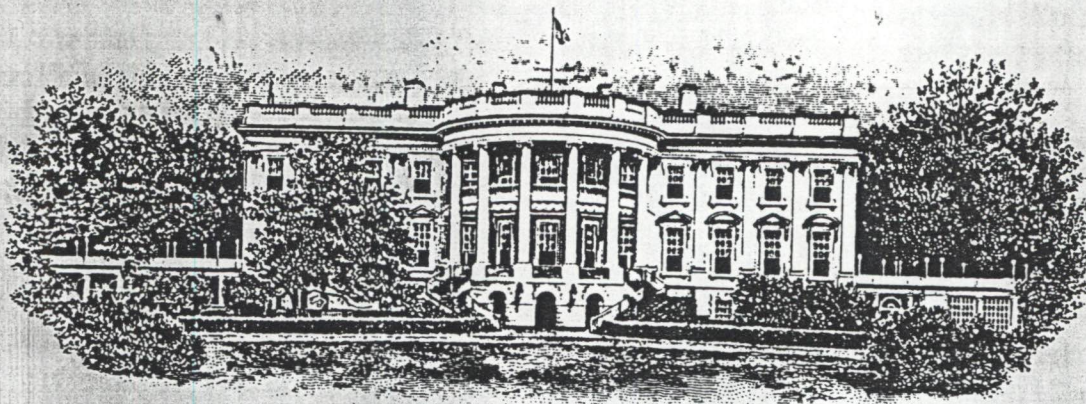
I am pleased to present a PCAST report on your High Performance Computing and Communications Program. This report was prepared by PCAST member Dr. Solomon Buchsbaum and a panel of industrial and academic experts, and has the concurrence of all PCAST members. This report is presented to you for your information, and no other action is being requested.

In my opinion, it is an excellent assessment of the state of the program. The report presents a program analysis based on strategy, balance, management, and vision. Both constructive recommendations for program improvement and positive reinforcement of successful program elements are contained within the report.

We plan on providing copies of the report to the various Federal agencies who participate in the program. It is my hope that this report will serve as an example of the value that PCAST can bring to the Federal government by performing independent reviews of Federal science and technology programs.

Attachment.

**PRESIDENT'S COUNCIL OF ADVISORS
ON
SCIENCE AND TECHNOLOGY**



**HIGH PERFORMANCE COMPUTING AND
COMMUNICATIONS PANEL REPORT**

THE WHITE HOUSE
WASHINGTON

May 19, 1992

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY *Amor*

SUBJECT: U.S. Signs Agreement Establishing the
Inter-American Institute for Global Change Research

I am pleased to report to you that an unprecedented international agreement for research on global change was signed last week in Montevideo, Uruguay, at a high-level meeting of governments of the inter-American region. The United States was joined by ten other countries of the region in signing the agreement which establishes the Inter-American Institute for Global Change Research. This number represents only the charter group and it is anticipated that the remaining eleven countries that have participated actively in the discussion leading to the formation of the Institute will also sign in the near future. President LaCalle of Uruguay hosted and addressed the meeting. I signed the agreement on your behalf in Montevideo.

The Inter-American Institute for Global Change Research is a major U.S.-led initiative which you can be proud to carry into UNCED. You introduced the concept of the Institute during your closing remarks at the 1990 White House Conference on Science and Economics Research Related to Global Change. I believe that it is the most successful product of that conference thus far.

Following are some background notes on the establishment of the Institute which may prove useful to you in your preparations for UNCED and in your discussions with Prime Minister Brian Mulroney, whom I understand will wish to raise this issue with you in his visit later this week.

I would welcome an opportunity to meet with you, at your convenience, to discuss further the development of this Institute, how you might include it as part of the U.S. message at UNCED, and the plans for completing your envisioned global system through the establishment of similar regionally-focused institutes in the Euro-African and Western Pacific areas.

Background

Your proposal to establish several north-south 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 in your closing remarks. More recently, this concept has been further 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 the legal agreement and scientific agenda for the Institute. From the beginning, however, we have emphasized that we were developing a cooperative activity among equals. The cooperation among the participating countries has been unprecedented and remarkably effective.

International Involvement

To date, twenty-two different countries from the Americas have participated -- at senior policy levels -- in the development of the Institute. They are the following:

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

Eleven of these countries (underlined) became founding charter members of the Institute by signing the agreement in Montevideo last week. Others are expected to join in the near future as they complete the necessary domestic procedures and approvals.

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 and have participated in the meetings. The Japanese have indicated their willingness to play a leading role in establishing the Pacific Institute -- as have the Indonesians.

THE WHITE HOUSE

May 19, 1992

Dear Phil:

Since the attached memo is
purely informational and since it
is important that the President have
this information prior to his
meeting with Russian leadership,
I hope that you would be able to

get them to the President without
the necessity of staffing.
My thanks.

Amen

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01a. Memorandum	To: President Bush From: Allan Bromley Re: Report of PCAST Panel on Science, Technology and National Security (1 pp.)	4/29/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Correspondence Files
WHORM Cat.:
File Location: D. Allan Bromley Correspondence - Presidential [1992]

Date Closed:	2/11/2010	OA/ID Number:	62005-008
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

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

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

C. Closed in accordance with restrictions contained in donor's deed of
gift.

PRM. Removed as a personal record misfile.

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

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an
agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial
information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of
personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement
purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of
financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01b. Memorandum	To: Phillip Brady From: Allan Bromley Re: PCAST Report (1 pp.)	4/23/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Correspondence Files
WHORM Cat.:
File Location: D. Allan Bromley Correspondence - Presidential [1992]

Date Closed:	2/11/2010	OA/ID Number:	62005-008
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AR Disposition:		MR Disposition:	
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(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information



ABOARD AIR FORCE ONE

4-27-92

Allan,

I read Dr.
Ralph Gomory's
excellent paper
and I will be
anxious to see
how your discussions
with Shinner et al
come out. Please
thank Dr. Gomory
for me. Hastily -

GB,

ONE PRESIDENT HAS SEEN

4/27/92

THE WHITE HOUSE

WASHINGTON

April 16, 1992

02 APR 17 A10: 52

MEMORANDUM FOR THE PRESIDENT

FROM:

D. ALLAN BROMLEY

Alan

SUBJECT:

**A PCAST WHITE PAPER ON TECHNOLOGY AND THE
AMERICAN STANDARD OF LIVING**

I have the pleasure of enclosing a paper prepared by Dr. Ralph Gomory and your PCAST members on the above topic.

In my opinion it is an excellent statement of the role that technology can play in making America a more productive society and in improving the standard of living for all our citizens.

I have been discussing a possible initiative in this area with Messrs Skinner, Moore and Yeutter and hope to be able to have it available for your consideration in the near future.

Enclosure

THE WHITE HOUSE
WASHINGTON

DATE: 4/28/92

NOTE FOR: DR. BROMLEY

The President has reviewed the attached, and it is forwarded to you for your:

Information ☒

Action ☐

Thank you.

PHILLIP D. BRADY
Assistant to the President
and Staff Secretary
(x2702)

CC:

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02a. Memorandum	To: President Bush From: Allan Bromley Re: Report of PCAST Panel on Science, Technology and National Security (2 pp.)	4/23/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Correspondence Files
WHORM Cat.:
File Location: D. Allan Bromley Correspondence - Presidential [1992]

Date Closed:	2/11/2010	OA/ID Number:	62005-008
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

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

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

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

C. Closed in accordance with restrictions contained in donor's deed of
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PRM. Removed as a personal record misfile.

(b)(1) National security classified information [(b)(1) of the FOIA]
(b)(2) Release would disclose internal personnel rules and practices of an
agency [(b)(2) of the FOIA]
(b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
(b)(4) Release would disclose trade secrets or confidential or financial
information [(b)(4) of the FOIA]
(b)(6) Release would constitute a clearly unwarranted invasion of
personal privacy [(b)(6) of the FOIA]
(b)(7) Release would disclose information compiled for law enforcement
purposes [(b)(7) of the FOIA]
(b)(8) Release would disclose information concerning the regulation of
financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02b. Memorandum	To: Phillip Brady From: Allan Bromley Re: PCAST Report (1 pp.)	4/23/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Correspondence Files
WHORM Cat.:
File Location: D. Allan Bromley Correspondence - Presidential [1992]

Date Closed:	2/11/2010	OA/ID Number:	62005-008
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

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P-1 National Security Classified Information [(a)(1) of the PRA]
P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
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Freedom of Information Act - [5 U.S.C. 552(b)]

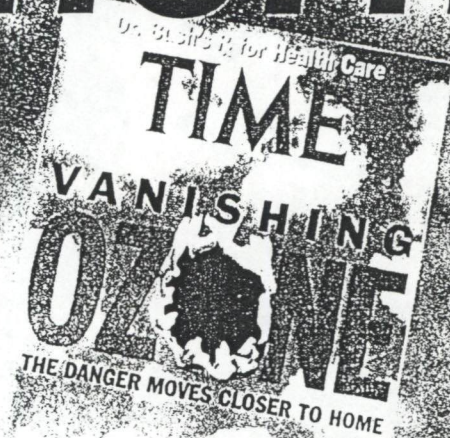
(b)(1) National security classified information [(b)(1) of the FOIA]
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March 22, 1991

Insight

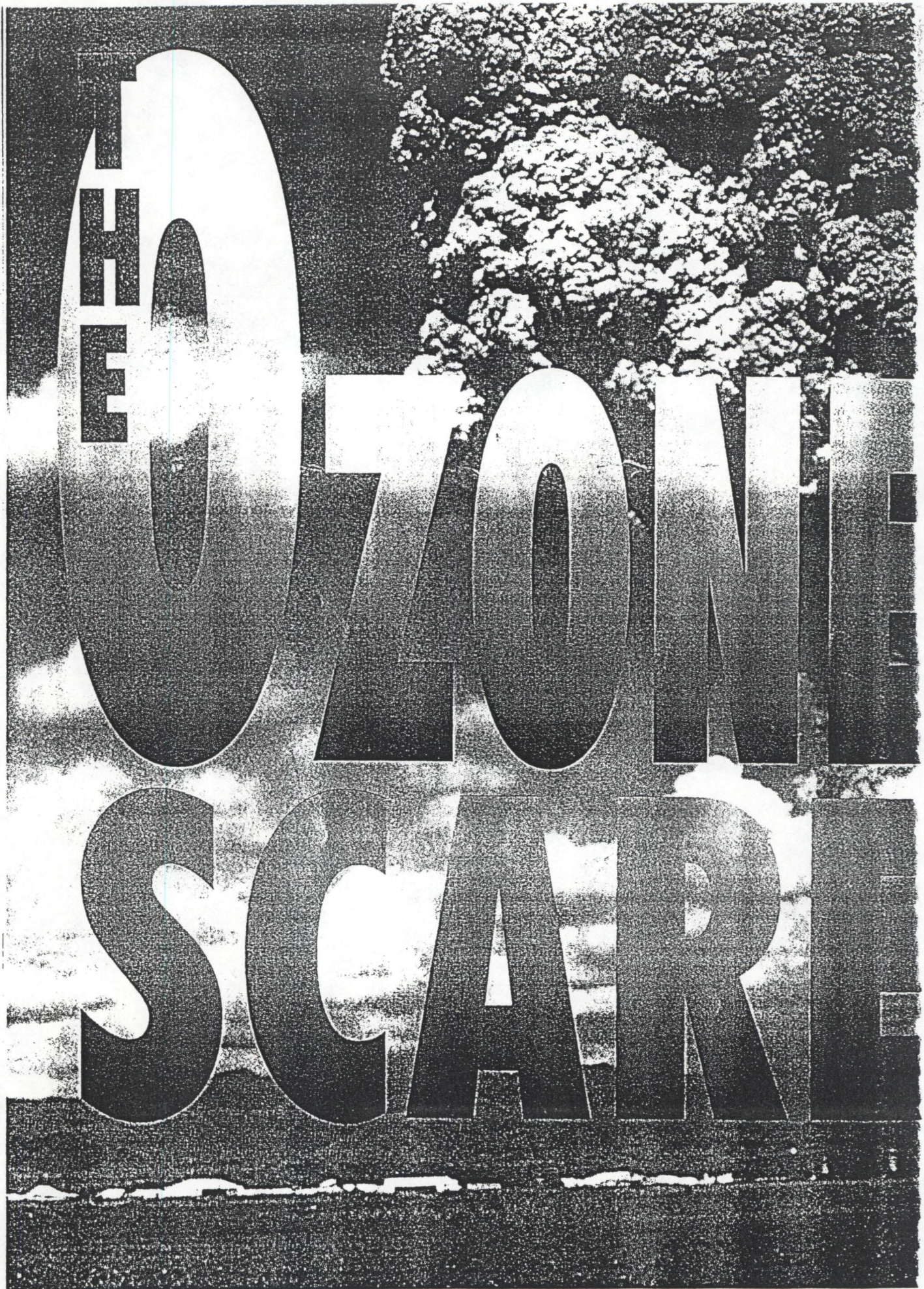
ON THE NEWS

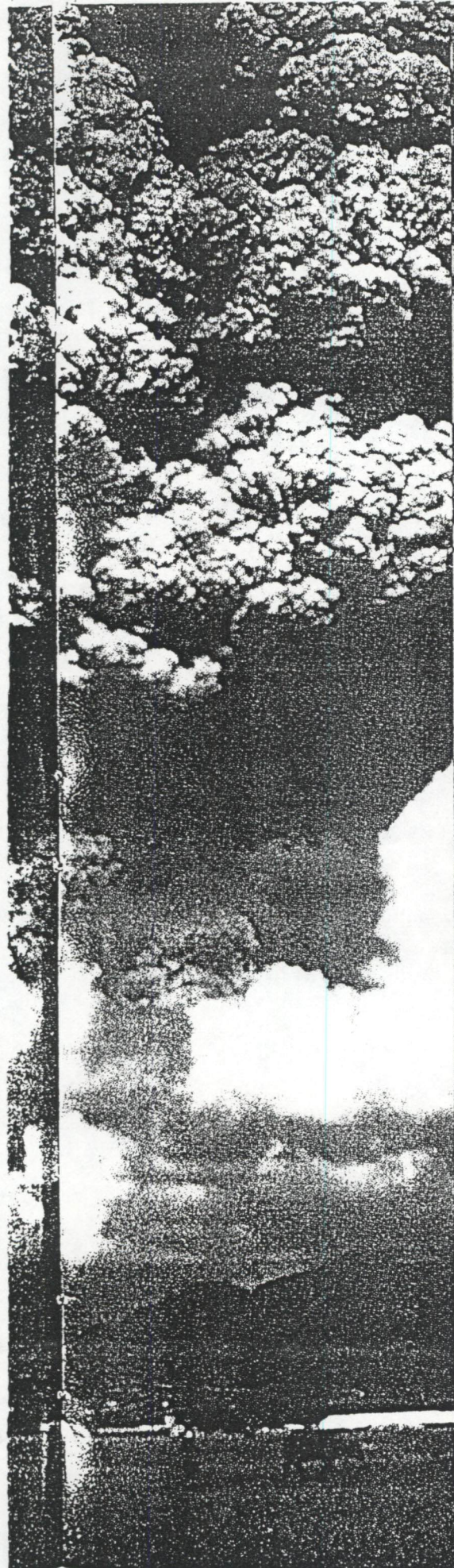
VANISHING



FACTS

NASA, THE MEDIA AND THE OZONE HYPE





Summary: When the leader of a NASA research project announced that an ozone hole could open over populated areas this winter, it set off a chain reaction that quickly pressured President Bush into moving up the phaseout of chlorofluorocarbons. Some scientists are now crying foul. They say the threat is overblown and decay sky-is-falling rhetoric from researchers, politicians and the media.

By Micah Morrison

The elimination of ozone-eating industrial chlorofluorocarbons might seem like an abstract notion to most people, but not to Melvyn Shapiro, chief of meteorological research at a National Oceanic and Atmospheric Administration laboratory in Boulder, Colo. CFCs — chemicals used in refrigeration, aerosol sprays, foam packing and cleaning solvents — are rapidly on the way out, due to a Bush administration decision in February to speed their withdrawal from the marketplace.

"What people are going to have to deal with in five years," says Shapiro, "is that they'll be told they have to buy a new refrigerator because 'we can't recharge your old one' with CFC substitutes. And if your air conditioner breaks during an August heat wave? 'Sorry, [it] won't accept the new chemistry. You'll have to come up with \$1,500 for a new one.'" Shapiro adds: "A terrible thing happened in February."

The genesis of the "terrible thing" actually came Jan. 20, when a converted ER-2 spy plane took off from Bangor, Maine, making an unprecedented flight into the center of a polar vortex over eastern Canada and northern New England. Inside the vortex — an air mass in the upper atmosphere held together by cold polar winds — the ER-2 gathered air samples that would both delight and alarm scientists back on the ground.

The converted spy plane was a new tool in a major mission to study the atmosphere led by the National Aeronautics and Space Administration. The air samples gathered in January showed the highest levels of chlorine monoxide ever measured in the polar

region. Another new NASA tool, the Upper Atmosphere Research Satellite launched in September, seemed to confirm the findings: Chlorine monoxide molecules, thought to derive primarily from CFCs, were building up in the vortex.

Project scientists were delighted because the samples appeared to verify what they had long suspected: that chlorine from CFCs was increasing inside the arctic polar vortex, a process they had previously observed over Antarctica. The cause for alarm was the possibility that this buildup would destroy parts of the atmosphere's protective layer of ozone, which filters out ultraviolet light rays from the sun. The UV rays would then shine down on the Northern Hemisphere with increased intensity. In a worst-case scenario, this could mean increased skin cancer, cataracts, shifts in the global food chain and immune system damage. In short, a new "ozone hole" was aborning.

Although the Airborne Arctic Stratospheric Expedition was due to run another two months and some members of the large research team — 40 scientists from NASA, NOAA and the National Center for Atmospheric Research — urged caution, the project leader, Harvard chemist James Anderson, rushed the findings to a news conference. The development of a late-winter ozone hole over the Northern Hemisphere, NASA reported, "was increasingly likely."

"We believe now that the probability of significant ozone loss taking place in any given year is higher than we believed before," Anderson said at the Feb. 3 news conference.

"We're not concerned with just remote regions now," added NASA's Michael Kurylo, program manager of the arctic expedition. "What we're dealing with extends to very populated regions."

Kurylo anticipated a 1 to 2 percent loss of ozone per day within the vor-

Pinatubo: How much of an effect?

tex, if it remained stable into March, and a total loss of up to 30 percent.

Events then unfolded with stunning speed. The press briefing touched off a flurry of political maneuvering and breathless news reports and editorials. Brushing aside the tentative phrasing of the NASA statements, Sen. Albert Gore, a Tennessee Democrat, took to the floor of the Senate on Feb. 6 and raised the specter of an "ozone hole over Kennebunkport," President Bush's summer home in Maine. Terming the NASA report evidence of "an immediate, acute, emergency threat," Gore urged that the phaseout of CFCs be completed by 1995, not by 2000, the

deadline hammered out in lengthy international negotiations.

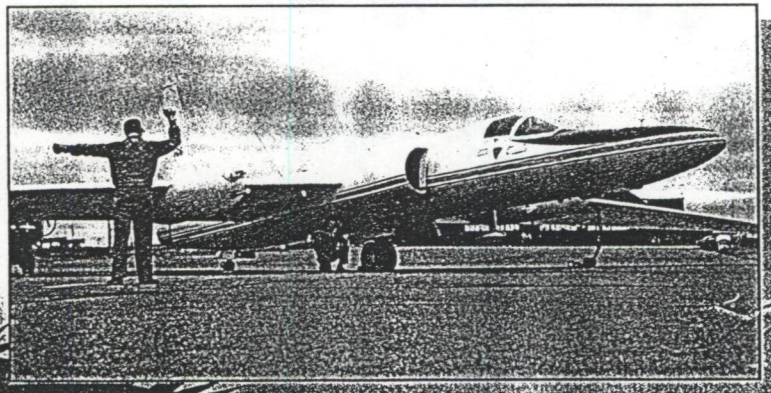
Gore had the big guns of the media on his side. On Feb. 5, less than 48 hours after the NASA press briefing, the *New York Times* and *Washington Post* both blasted the White House with editorials calling for an accelerated phaseout of the ozone-depleting chemicals.

The *Times* editorial, titled "The Ozone Hole Over Mr. Bush's Head," termed ozone depletion "an issue of global importance." In an editorial headlined "The Vanishing Ozone Layer," the *Post* declared: "Once again, it turns out that the protective ozone layer in the sky is being de-

stroyed faster than even the pessimists had expected."

Following Gore's speech and the editorials, the Senate voted 96-0 to call on the president to implement the full CFC phaseout by 1995. The measure, sponsored by Gore, included a Senate "finding" that the "stratospheric ozone layer, which protects all living things from harmful ultraviolet radiation from the sun, has been severely depleted in many areas of the globe." The statement was disingenuous at best — *naturally occurring* global ozone levels can fluctuate radically from week to week — and had little connection with what was actually in the NASA report.

THE WIZARDS OF OZONE



On Jan. 20, a converted ER-2 spy plane took off from Bangor, Maine. Based on the data it brought back, NASA held a news conference on Feb. 3 and announced: "The probability of significant ozone loss taking place in any given year is higher than we believed before." Sen. Al Gore took to the floor of the Senate three days later to raise the specter of an "ozone hole over Kennebunkport." On Feb. 11, the White House announced an accelerated phaseout of CFCs, ozone-depleting chemicals. A month after that, a senior NASA researcher said: "There is no ozone hole over Kennebunkport. There never has been an ozone hole over Kennebunkport. And I don't really expect one."

GRAPHIC BY DOUG STEVENS / INSIGHT
PHOTO CREDITS FROM LEFT, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION;
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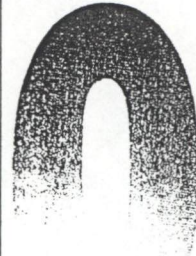
Well, never mind. The ozone bandwagon was rolling. On Feb. 8, the *Post* reported that a new United Nations study had linked increased UV rays from the sun to researchers' "projections" of "300,000 new cases of skin cancer per year by the turn of the century," as well as "an increase of infectious diseases, including AIDS."

The *Post* neglected to mention that research into the matter is in its infancy, is highly speculative and that



many scientists believe a slight increase in UV radiation poses little danger to humans. The focus on AIDS, for example, baffles Sasha Madronich, a scientist at the National Center for Atmospheric Research who participated in a 1989 U.N. report on the environment. "Increased UV might slow down the immune system response," he says, "but it is a temporary slowdown, not permanent." As for skin cancer, Madronich notes that although "rates have been rising dramatically during the last 20 years, this is probably due to smaller bathing suits and more recreational time. You probably can do more damage to yourself by going to a tropical resort

for a week and lying in the sun than by spending several months under the Antarctic ozone hole."

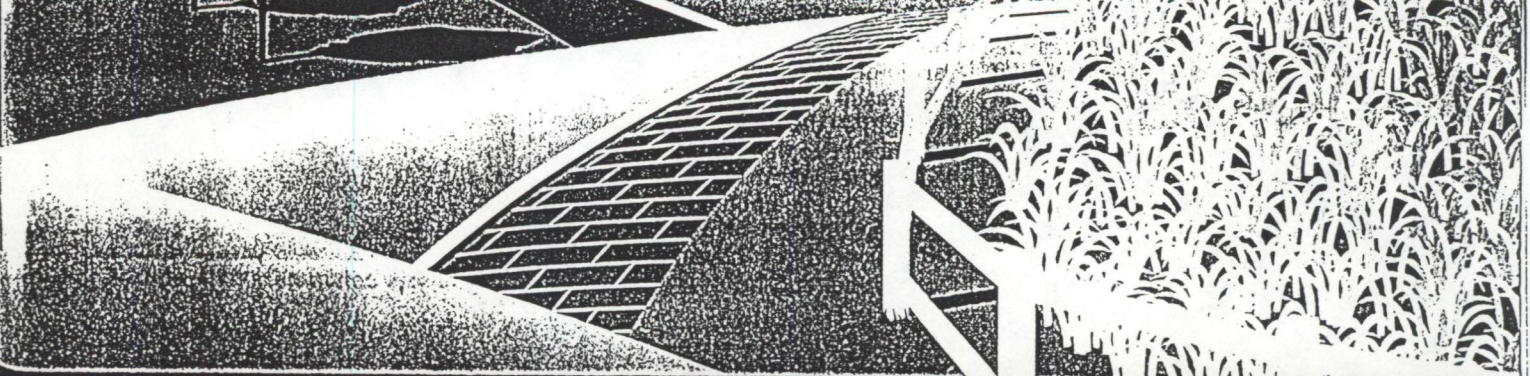
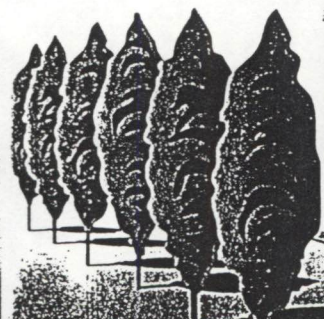


On Feb. 10, *Time* magazine hit the newsstands with a dramatic cover story, "Vanishing Ozone: The Danger Moves Closer to Home." The article cited "overwhelming" evidence that the stratospheric ozone layer "is being

eaten away by man-made chemicals far faster than any scientist had



WHITE HOUSE
WASHINGTON



predicted." The situation was dire, *Time* warned: "This unprecedented assault on the planet's life support system could have horrendous long-term effects on human health, animal life, the plants that support the food chain, and just about every other strand that makes up the delicate web of nature." *Newsweek* weighed in by adding herpes to the list of UV-linked illnesses.

The White House had had enough. The following day, Feb. 11, it announced a faster phaseout of ozone-depleting chemicals. With limited exceptions for essential uses, all production of the substances will be ended in this country by December 1995. The environmental lobby had won a key victory — and a remarkably speedy one, coming within eight days of the NASA news conference.

Yet, as of early March, NASA had not provided evidence of a new "ozone hole." Atmospheric ozone is measured in Dobson units, named for Oxford University scientist Gordon Dobson, who developed the measurement technology. The global ozone average is approximately 300 Dobson units. Arlin Krueger, a senior NASA research scientist who monitors global ozone levels, says that in NASA's March 10 satellite ozone map, the lowest levels he could find over the Northern Hemisphere were 275-300 Dobson units. "I can tell you categorically," says Krueger, "there is no ozone hole over Kennebunkport. There never has been an ozone hole over Kennebunkport, and I don't really expect one."

The arctic expedition is still under way, and some scientists associated with it are unhappy with what they see as grandstanding by project leader Anderson. There is also evidence that the media have unduly alarmed the public through a journalistic sin of omission in disregarding key elements of the ozone story. Indeed, some ozone scientists warn privately of a backlash if the dire predictions by ozone alarmists in the worlds of science, the media and politics aren't rebutted. Despite fears that their funding will dry up or that they will suffer other career repercussions, a few of these scientists are beginning to speak out.

The prevailing view of ozone depletion has been shaped largely by

chemists. There is little dispute in the scientific community about their general findings. In fact, the basic chemistry is quite straightforward.

A stratospheric layer of ozone molecules, which are made up of three oxygen atoms, filters ultraviolet light from the sun; plain-Jane oxygen molecules, with only two atoms, don't act as a filter. The chlorine atoms in CFCs and other chemicals break apart the ozone menage-a-trois, hooking up with one of the three oxygen atoms to form chlorine monoxide and leaving behind two-atom oxygen molecules. This depletes the ozone in the stratosphere, and more UV rays make their way down toward the Earth's surface. In a kind of Faustian trade-off, the UV rays don't always reach the ground because pollution in the lower atmosphere can also act as a filter, blocking them before they reach the surface.

Besides pollution, other important factors have been overlooked or ignored in the ozone debate. In the simplest terms, the sky is not a test tube — weather and winds can interfere with predictable chemistry. Many atmospheric chemists, says NOAA's Melvyn Shapiro, "have little regard for the impact of atmospheric variability on chemical processes."

A storm system moving across the United States on the jet stream, for example, can result in up to "a 50 percent reduction in ozone across the weather system," Shapiro explains. "So people are going to be terrified because there's a 3 percent reduction in ozone due — maybe — to CFCs?"

Shapiro and other scientists concerned about ozone hype do believe that CFCs can deplete ozone. Shapiro emphasizes that the problem "is worthy of further study." But he adds that the chemists running the show are "not presenting the whole picture." For example, he says, "there's no education of the public about the natural variability of atmospheric ozone and its impact on [how much UV gets through] — the thing that people experience." People in different places and at different times already receive widely varying amounts of UV light.

Shapiro has spent more than two decades studying how weather affects ozone, and he sees "no major

alterations in ozone patterns." He is sharply critical of what he calls "Chicken Little research" and its interaction with the press and politicians. "If you have a doomsday scenario," he says, "you get a lot of money. Research organizations are in great competition with each other to get the politicians' ears and obtain the necessary resources. If you want money, you have to come up with a doomsday scenario. The public

doesn't understand how speculative these scenarios are. And if I, as a member of the lay public, read an article such as the *Time* cover story on ozone, I get an impression of imminent disaster — the ozone is being destroyed! There is imminent danger! The lay reader cannot inter-

"They're not telling people what the natural pole-to-equator differences in ozone are, what the pole-to-equator incident UV at the ground is, how it varies on an annual basis."



Shapiro says consumers will pay.



Sea surface temperatures, shown in an enhanced satellite image, may trigger weather patterns that lower ozone.

pret the few qualifiers — 'if,' 'could,' 'might,' 'possibly' — studded through the article. The reader just thinks he's going to get fried."

Shapiro's words have "some elements of truth," says Michael Lemonick, who wrote the *Time* cover story. "I'm not sure what the alternative is. I don't think we say in the article that the reader is going to 'get fried.' We say there's strong evidence of the possibility, and I don't think that's an unfair statement. I wouldn't change what we said."

Another neglected factor in the ozone story is the impact of volcanoes. Although many scientists, including some associated with the NASA study, thought that the June

eruption of Mount Pinatubo in the Philippines could lower ozone levels, NASA buried the volcano in its news conference. "I couldn't understand why NASA didn't come out and say that this could be a very unusual year because of the volcanic eruptions, that maybe what we're seeing is something we'll never see again," says David Hofmann, senior scientist in the Ozone and Aerosols Group of NOAA's Climate Monitoring and Diagnostics Laboratory. "Instead, they seemed to imply, you know, that this is the start of something really big. That really wasn't very wise. If there's major ozone depletion seen this year, it's quite likely that it is related to the volcano."

Two key elements from volcanic emissions are thought to contribute to the ozone depletion: sulfur dioxide, which forms sulfuric acid that is thought to feed the ozone-depleting reactions; and hydrogen chloride, which raises the level of ozone-destroying chlorine in the atmosphere. Studies of Pinatubo indicate that it sent at least 15 million tons of sulfur dioxide into the atmosphere — findings that were well reported in scientific journals but were downplayed by many reporters covering the environmental beat for the general press. (The *Time* story, for example, contains two minor references to "volcanic ash" and "dust particles" from Pinatubo.)

In fact, the theory that volcanic emissions can intensify ozone depletion was in the scientific literature *before* the Pinatubo eruption. Writing in the December 1990 issue of *Nature*, National Center for Atmospheric Research scientist Guy Brasseur predicted that volcanic emissions could intensify ozone depletion by several percentage points worldwide. He is cautious about the interaction of natural and man-made agents and their respective contributions to ozone loss.

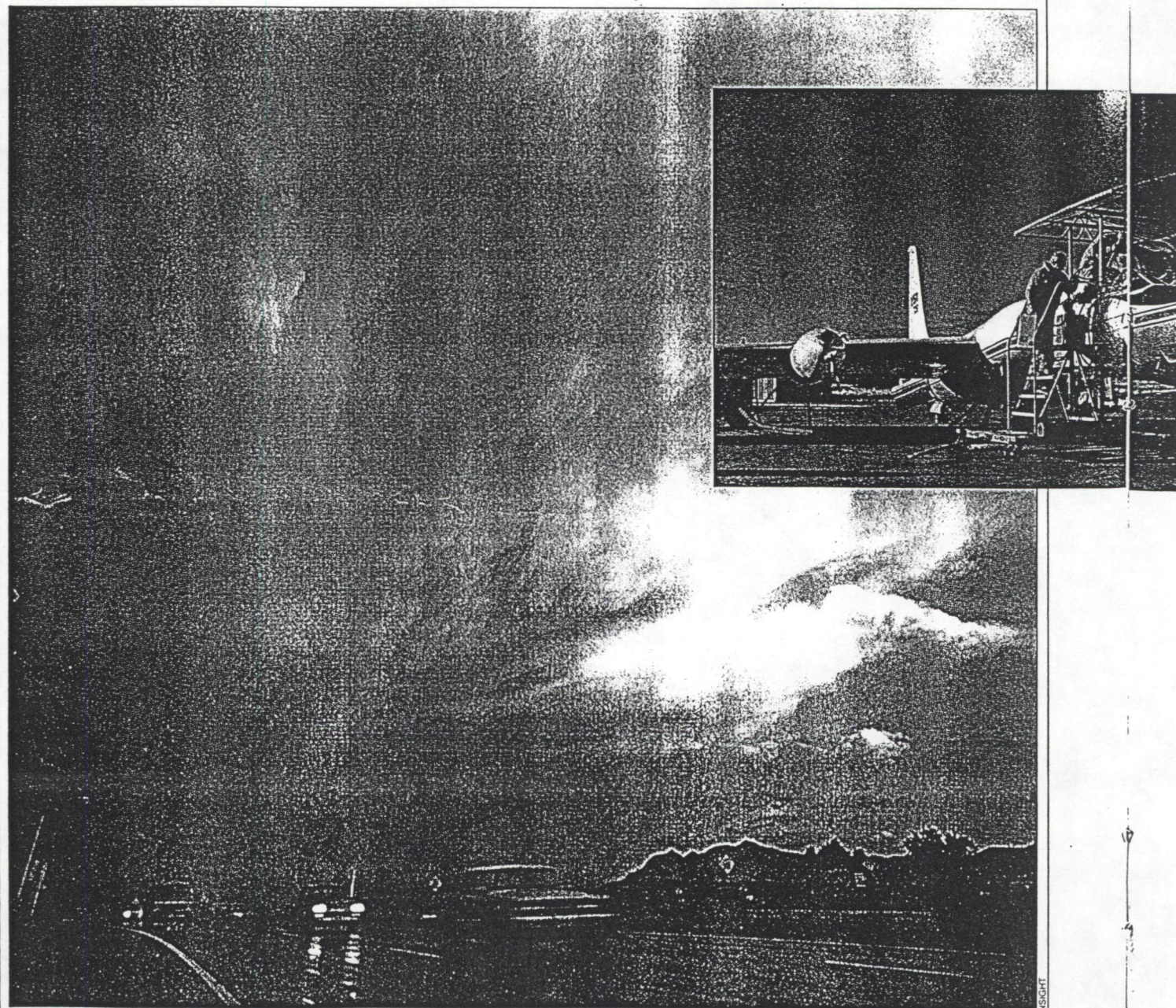
"I don't think we have seen anything we could call an ozone 'hole' over the Northern Hemisphere," Brasseur says. "But what we have

seen is that at mid and high latitudes, on the average, ozone is less than it was 10 years ago. And so, the question is: What mechanisms are leading to the small percentage loss in stratospheric ozone? Is it due to natural mechanisms? Is it due to CFCs? How much is related to volcanic emissions and other background particles?"

"Volcanic eruptions probably wouldn't have much effect if we didn't put all that man-made chlorine up there," says the NOAA's Hofmann. "Some volcanoes are chlorine-rich; some aren't." A chlorine-rich eruption, for instance of Mexico's El Chichon volcano in 1982, interacting with

CFCs, "can have a much greater effect [on the ozone layer than a chlorine-poor volcano], although just how great is not known."

There is great uncertainty about the exact effects of a sulfur-rich eruption such as Pinatubo, although chemists seem certain that the sulfuric acid droplets that form in the atmosphere as a result lead to chemical reactions that destroy ozone. "Volcanic erup-



Ozone can be reduced by 50 percent across a storm system; the converted ER-2 spy plane is a new NASA tool.

tions can affect the ozone," says Hofmann. "The question is, how much?"

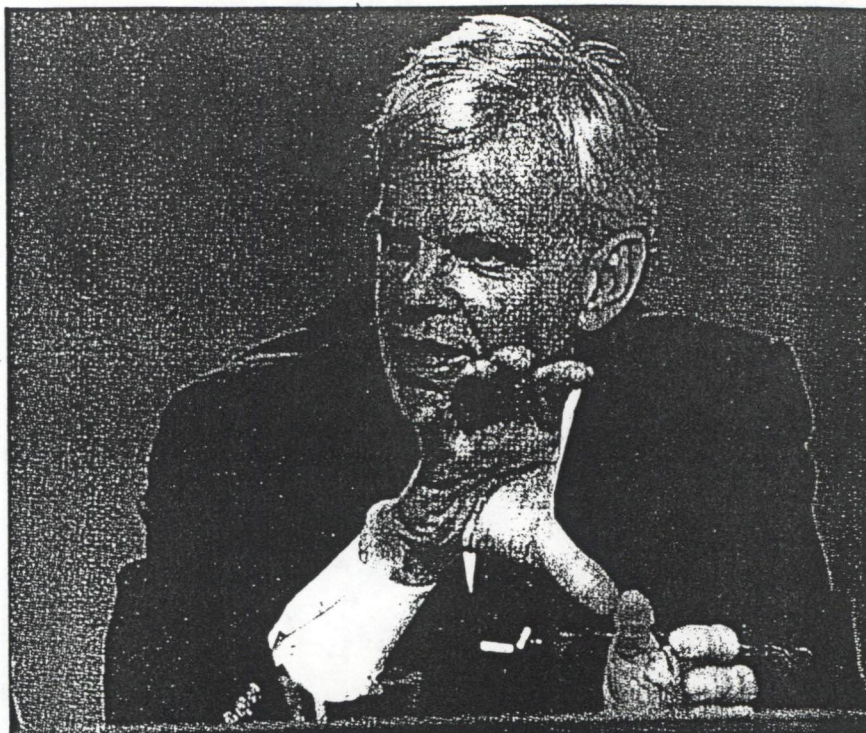
Hofmann, however, raises another area of scientific uncertainty. "The question of what effect polar ozone holes have on the rest of the world," he warns, "is not settled at all." His remark points to a distinction that is often lost when the ozone alarm is sounded: There is global ozone, and there is polar ozone. Polar ozone is a significant part of the global ozone picture, but only part of it.

Though the atmosphere is no test tube, the vortexes that form over the polar regions during winter serve as the nearest thing nature provides to a laboratory for the observation of chemical processes in the stratosphere. The air masses of the vortex are relatively contained, isolating chemicals within and allowing sufficient time and opportunity for measurable reactions to take place. This is why, for example, much of the research into ozone depletion has taken place in Antarctica, where an ozone hole of varying size opens up every winter.

After the polar winter, the vortex breaks apart, and the ozone within it mixes with the global ozone layer. A 20 percent drop in polar ozone during the vortex period does not mean a 20 percent drop in global ozone levels; in fact, a drop in polar ozone may not mean anything at all, given the other global processes at work.

Science has many questions about the global ozone picture. The effect of polar depletion on the rest of the planet is a major question. So, of course, is the effect of CFCs and other man-made agents. So is the role of lower-atmosphere pollution. So are the effects of natural variations, jet stream winds and volcanoes.

All these uncertainties erode the prevailing ideology of ozone — that CFCs are the major threat — and thus threaten the goose laying the golden research egg. Research into the other possible factors has not been greeted charitably in some sectors of the scientific community. That was the experience of Walter Komhyr, a physicist in NOAA's Climate Monitoring and Diagnostics Laboratory.



BILL INGALLS / NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Some team members urged caution, but Anderson went public anyway.

In 1990, Komhyr advanced a cautious thesis that sea surface temperatures might contribute to changes in the ozone layer. Warmer than usual sea surface temperatures, Komhyr hypothesized, could trigger weather patterns that lead to ozone decreases. The warm water causes wind speeds to increase near the equator. The winds trap ozone molecules high in the equatorial atmosphere, keeping them from readily spreading to other parts of the globe.

Komhyr and his colleagues think they have identified an important relationship between sea surface temperatures and total ozone concentrations. Studying 25 years of data, Komhyr noticed that when sea surface temperatures were cold, global ozone levels generally tended to increase. When temperatures warmed, ozone seemed to decrease. Komhyr says that when he initially presented his findings, many chemists were "sort of stunned."

"Generally, the chemists don't know much about meteorology," he says. "People thought that here comes a guy who's pooh-poohing the chemistry and saying he's got another solution to the downward trend in ozone. I've had chemists come and tell me that this is not a good finding to publish because it might have an influence on funding the study of CFCs."

Although Komhyr is reticent about the details, other scientists also

say that his finding met with resistance. Komhyr tried without success to publish his paper, "Possible Influence of Long-term Sea Surface Temperature Anomalies in the Tropical Pacific on Global Ozone," in the United States.

He finally published it last year in the *Canadian Journal of Physics*. "I have had to suffer some repercussions, believe it or not," he says. "And while I don't want to say CFCs are unimportant, part of the global decrease in ozone we see at the present time may be due to meteorological conditions."

"What you have to understand," says the NOAA's Melvyn Shapiro, "is that this is about money. If there were no dollars attached to this game, you'd see it played in a very different way. It would be played on intellect and integrity. When you say the ozone threat is a scam, you're not only attacking people's scientific integrity, you're going after their pocketbook as well. It's money, purely money."

Shapiro says there is a history of funding being driven by alarmism. "If you didn't have ozone right now, what would the chemists be doing? What would they invent? Global warming? Nuclear winter? A new ice age? Bovine emissions? Kuwaiti oil fires? The chemists have a long history of Chicken Little research."

Money, in part, may explain NASA's rush to get the "evidence" of

(continued on page 26)

Ozone continued from page 13

a likely ozone hole out two months before the arctic research project closed. Instruments such as the ER-2 environmental spy plane and the Upper Atmosphere Research Satellite are expensive (the satellite mission costs \$710 million), and the combination of a recession and the end of the Cold War has left NASA officials searching for their place in the "new world order."

Access to *Energy* Editor Petr Beckmann, a longtime critic of the scientific establishment, calls the plane and satellite costly "toys" on a brand-new mission. Although ground measurements of ozone, especially for Antarctica, date back over a generation, the first extensive satellite observations began only in 1978. "The pre-1978 information," says NASA's Krueger, "is scattered."

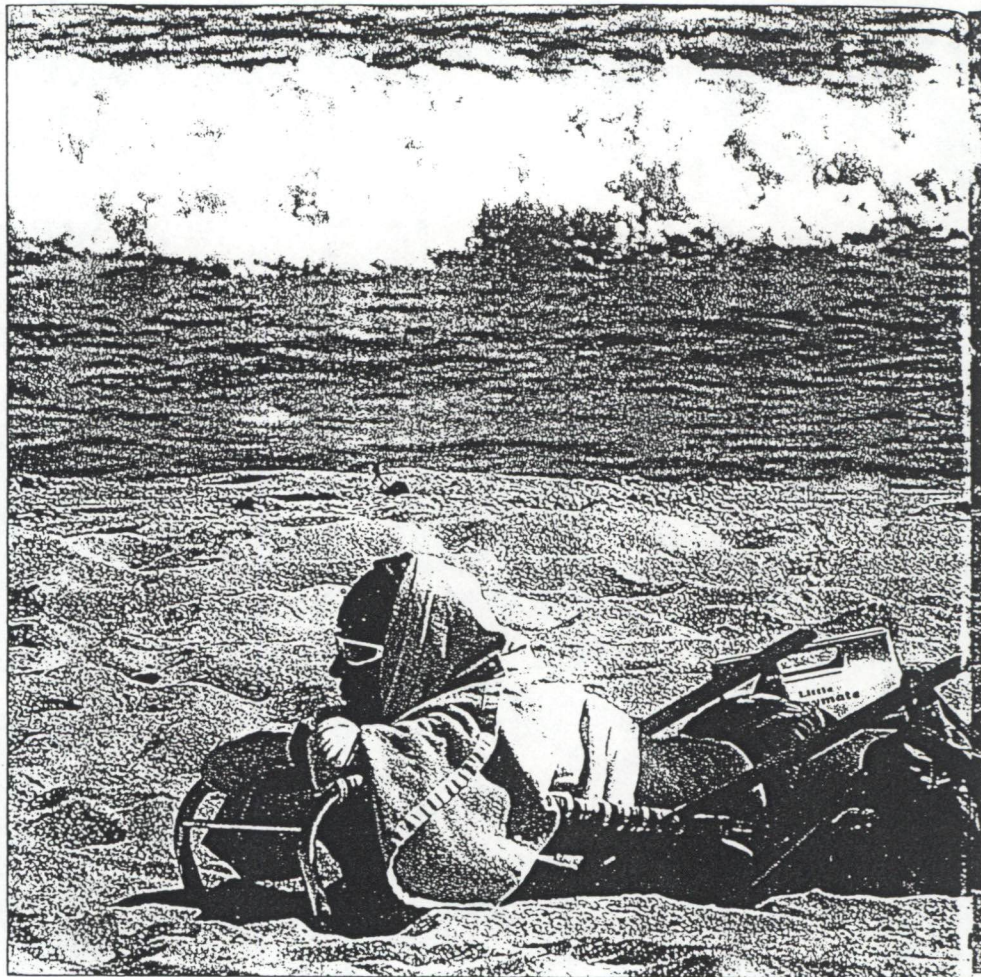
This is what annoys Beckmann, who thinks the relative lack of historical data makes it presumptuous to ring the alarms. "What were the historical ozone levels before the NASA mission?" Beckmann asks. "It's incred-

ible insolence to say there might be a 30 percent drop in ozone, a 'hole.' It's a fraud to use science in this way, to quickly prove a hysterical theory of ozone depletion."

NASA may only be behaving like all large bureaucracies, concerned to preserve its share of the federal budget and carve out a new role for itself. But some scientists are concerned that the agency, abetted by the media and environmentalist politicians, has created a chill in the atmosphere of independent scientific inquiry. "You can't take the wrong side on an issue these days," says Shapiro.

NOAA and the National Center for Atmospheric Research are the junior partners in the NASA-led ozone studies. "NASA is the 800-pound gorilla in the ring," says a scientist involved in the ozone study, insisting on anonymity. "You either go along with the gorilla or you stay out of its way."

According to several scientists, there was opposition within the arctic research group to releasing the preliminary findings in early February. Some project members were not informed of the upcoming NASA news conference; others were told



not to comment to reporters. Project leader Anderson "muzzled us," says one ozone specialist. Others in the arctic expedition disagree. "An effort was made to get input before the news conference," says David Fahey, a member of the study team. "I think Jim Anderson would take strong exception to the characterization of muzzling dissent." Anderson could not be reached for comment.

When the news took off like a rocket and the president advanced the CFC phaseout deadline, some arctic team members began pressing for a second interim report, based on later satellite findings indicating that chlorine monoxide levels were no longer at record highs. NASA killed the idea.

Yes, says Brian Dunbar, NASA spokesman, "I did — in conjunction with the Science Office. We aren't going to put out [another] press release until we have a complete picture and a complete story to tell." Dunbar argues that the earlier press release was needed because of the high chlorine monoxide levels detected.

The final report is due out in April, after the project closes. Politically, it

doesn't matter anymore. CFCs are being phased out faster, and NASA has reaped a bonanza of publicity as guardian of the ozone.

So how did the preliminary NASA data get translated into stunning political action in less than two weeks? The answer rests at a nexus of science, politics and the media. The language of the NASA press release and news conference was careful. What is interesting is what was not said and what was glossed over — scant mention of Pinatubo and a sharp focus on CFCs; an emphasis on chemistry rather than meteorology; and, most of all, no mention of dissenting views within the project.

A critical press could have discovered that there was more to the story than CFCs. Pinatubo, for instance, is not a state secret. But "the press already knows what it wants to hear," says Shapiro. "Perhaps the NASA news conference was premature, and maybe it wasn't really all that bad. But then the press calls up the media darlings in the scientific community and they give the press the line. Reporters already know who is going to give them the doomsday scenario."



Increased ultraviolet rays from ozone loss could cause more skin cancer.

zine's science coverage, announced at a 1989 conference on environmentalism at the Smithsonian Institution that "on this issue, we have crossed the boundary from news reporting to advocacy." A few months later, an editor's note in *Time* defended the decision, saying, "Yes, our stand on the planet is that we support its survival."

A recent study of the other hot environmental issue — global warming — supports the evidence of biased environmental reporting. Washington's nonpartisan Center for Science, Technology & Media hired the Gallup organization to survey 400 climate experts, then did its own content analysis of global warming coverage in nine major media outlets from 1985 to 1991.

While "most climate experts express uncertainty about the scientific basis for the global warming theory," the center notes, "most media accounts support the belief that such a warming trend is real." The center's conclusion: "The public is receiving a skewed portrait of the scientific debate over global warming. In news accounts, scientists are presented as relatively unified supporters of global warming theory. Yet the Gallup survey reveals considerable debate and uncertainty about global warming theory within the scientific community."

"That's probably true," says *Time*'s Lemonick. "It's easy for people covering the environment, or any complicated issue, to miss the subtleties. Some reporters have more experience, some have less. There's also a

tendency for the press to want to play up the more dramatic aspects and play down the less dramatic. Unfortunately, I think it's also true that to some degree the public can't deal with the subtleties of complicated issues."

Another reason the scientists' uncertainty tends not to make its way into the news was suggested at the 1989 Smithsonian conference by Stephen Schneider, an oft-quoted global warming expert at the National Center for Atmospheric Research. "We need to get some broad-based support, to capture public imagination," said Schneider. "That, of course,

means getting loads of media coverage. So we have to offer up some scary scenarios, make some simplified dramatic statements and little mention of any doubts one might have. ... Each of us has to decide what the right balance is between being effective and being honest."

Another man not given to mentioning doubts about global warming or ozone depletion is Gore. His recent book, *Earth in the Balance*, is filled with warnings about the "grave crisis" facing the planet. Within the trajectory of the February ozone scare — from preliminary findings to news conference to media hullabaloo to political action — is a lesson in how a politician can seize the day and shape the national agenda.

With the media in an uproar and Bush on the defensive in the primary campaign, Gore was able to garner immediate, unanimous support for his Senate motion to speed up the CFC phaseout. Not coincidentally, this enhanced his reputation as the "environmentalist senator" and his position as the green candidate for president in 1996.

As Shapiro says: "A terrible thing happened in February. The president reduced the time scale for the elimination of CFCs based on the politics of the day. Gore really put him on the spot. What was Bush going to do? Politically, he's fighting for his life. Is he going to stand up there and say, 'I don't believe it'?"

What he did was clear: Eight days after the NASA news conference, he okayed the faster CFC phaseout. "The costs to the country for the termination of CFCs are going to be phenomenal," Shapiro says. "Globally, it will cost hundreds of billions of dollars. They have alternative substances, but they're flammable. Do I have to worry about the air-conditioning unit in my car turning into a grenade? About my refrigerator blowing up?"

In addition to the economic costs of the CFC phaseout, the ozone hype raises questions about the degree to which politics is driving science. The unwritten alliance between the science bureaucracy, Congress and the media, says Shapiro, "is quite clear." With the press as cheerleader, "Al Gore makes sure the science guys get their money. When they have a problem, they go to Gore. Now, that's a very dangerous situation. The scientists no longer approach politicians and say, 'We have a problem here and could you help us out?' The scientists now say, 'We're going to help you ... That's what's going on here.'"

Shapiro declined to identify the "media darlings," but the phenomenon is well-known. There is, in fact, testimony to the effect that some news organizations and reporters view the environmental beat as a holy mission not subject to the conventional rules of journalism. News professionals can be quite frank about this. "The planet is at the end of the rope," Barbara Pyle, CNN's environmental editor, told a 1990 *Utne Reader* conference on the environment and the media. "I do have an ax to grind. I want to be the little subversive person in television." Dianne Dumanoski, a *Boston Globe* reporter, told the same conference: "There is no such thing as objective reporting. I've become even more crafty about finding the voices to say the things I think are true."

Charles Alexander, the *Time* senior editor who heads the maga-

"We need to get some broad-based support. That means getting loads of media coverage. So we have to offer up some scary scenarios."

Dialog

Fielding Perceptions About the Disabilities Act

I am writing to voice my displeasure with "Disabling Businesses" [Cover Story, April 13]. The cover, indicating that the Americans with Disabilities Act will handicap the economy, is very insensitive to the handicapped. An attitude such as yours is the reason there has to be a law.

Ann McRae
Director, Special Education
Anderson County Schools
Clinton, Tenn.

Your readers deserve more than innuendo and loaded terms about the Americans with Disabilities Act. In part this is a response to your incredibly biased article and in part an explanation of the act and its implications. The ADA did not "breeze through." Thousands of people worked on its passage, despite lukewarm support from the White House. The issue is not to "give a break to the disabled," but to treat human beings as human beings.

Charlotte Allen cites Marc Fiedler's suits, filed after he contacted violators and got no response — and then suggests that we "depend on . . . goodwill." For shame. As Fiedler says, he has no plans to collect damages. He wants to get in the door. Jerry Mashaw suggests hordes of people want to sue because they are "disappointed and frustrated with the way they've been treated." Try being treated as most people with disabilities are; disappointment and frustration have nothing on that.

As an eager supporter of the ADA, I did not once hear of plans to picket large businesses that opposed it. We knew our cause was just. Some business associations continue, as you do, to spread inflammatory misinformation about the act. I know of no one who supports it who is not working very hard to correct misinformation, to educate employers, to direct people to resources, to make integration a reality.

We have explained carefully some issues. The margin for most businesses is close. Why would anyone in business willingly bar the door, eliminate a substantial market? In addition, until changes are made in medical coverage, most people who are disabled and who receive assistance cannot afford to work because they would lose medical coverage. The myth that hordes of people who use wheelchairs are lining up attorneys to sue is just plain

idiotic. A job, a place to live, the possibility of a life like any other life. Reasonable. Perhaps more than Charlotte Allen, terrified that people with disabilities might join into community life, perhaps more than her lack of reason would find reasonable.

Jacqueline T. Alfonso
Executive Director
United Handicapped Federation
St. Paul, Minn.

Certainly, people with disabilities have been treated unfairly, and I am certain that many of them are justly quite angry. But in today's society, where hardworking, motivated employees are at a premium, employers would be foolish not to hire and make accommodations for qualified disabled people. In fact, long before the Americans with Disabilities Act became law, employers were reaching out to the disabled: Witness the proliferation of curb cuts, parking spaces for the handicapped and braille elevator signs that have been part of the landscape for more than a decade. All the employers I interviewed, from giants like Marriott down to tiny family businesses, told of positive experiences in hiring the disabled; if accommodating a disabled work force and customer base will make the economy more productive, there is no need for a law forcing accommodations.

But the Americans with Disabilities Act is not about this sort of thing. It is about using litigation — an extremely expensive mechanism that adds nothing to a society's productivity — to force businesses and state and local governments to comply with standards that may or may not have anything to do with the kind of people who actually need accommodations and that certainly have nothing to do with whether there is any payoff of benefits for the cost. Congress refused to define what a "reasonable" accommodation is, leaving the task to judges on a case-by-case basis. What better guarantee of years of lawsuits?

Congress did not even bother to make an accurate count of the disabled. Only about 5 million Americans actually need the kind of massive architectural changes the act decrees.

The disabilities act not only requires litigation to define its parameters but enthusiastically invites litigation now that disability advocates have managed to secure their constituents certified victim status under the 1991 Civil Rights Act, which gives them access to compensatory and punitive damages and attorney's fees in cases of employment and public-sector discrimination.

If the history of suits under the 1973 Rehabilitation Act (outlawing disability discrimination among federal contractors) is any guide, future lawsuits are not likely to be over wheelchair use or learning disabilities. They will be over stress, smoke sensitivity, mandatory overtime and so forth — CA.

A Dispute over Factors in the Ozone Equation

Your article titled "The Ozone Scare" [Cover Story, April 6] was misleading and factually incorrect in several instances. It was seriously wrong: (1) in its assessment of the motives and scientific basis for the president's action on advancing the phaseout schedule of chlorofluorocarbons; (2) on the motives of NASA, NOAA and the scientists in issuing their press release; (3) on questioning the integrity of the scientists involved in environmental research; and (4) on the exclusive role of chemists in shaping our understanding of ozone depletion.

The information presented in the NASA/NOAA press release was timely, precisely scientific and presented in a factual manner. Neither the information nor the process was alarmist, as suggested by your article. The press release had the complete support of the scientists involved in the campaign and the program managers at NASA and NOAA, and was not a case of "grandstanding" by the project scientist.

The article suggests that President Bush was rushed into making a policy statement concerning chlorofluorocarbons and their accelerated phaseout based on the NASA/NOAA press release. This is totally incorrect. The United Nations ozone assessments, which were finalized in October — not the press release — were used by the administration as the basis for its recent policy statement concerning the chlorofluorocarbons and their accelerated phaseout.

The scientific data presented in the press release significantly strengthened the key conclusions of the peer-reviewed U.N.-sponsored international scientific ozone assessment. These conclusions are: (1) The weight of scientific evidence suggests that ozone depletion observed over the last two decades at temperate and high latitudes throughout the year is in large part caused by chlorine- and bromine-containing chemicals; and (2) As atmospheric levels of chlorine and bromine increase in the future, significant additional ozone losses are expected at temperate latitudes and in the arctic.

President Bush provided the required leadership to protect human health and ecological systems from the adverse consequences of anticipated increased ultraviolet radiation. Economics and technology issues were carefully addressed in the international assessments and given due consideration by the president. Bush's decision is strongly supported by industry; will not cost consumers "hundreds of billions of dollars"; will not require them to purchase new refrigerators, because there is an exemption for chlorofluorocarbons recycling and production to service existing equipment; and will not expose them to risks of a "refrigerator blowing up" since these chlorofluorocarbon substitutes are not flammable.

The allegations that the prevailing view of ozone depletion has been shaped largely by chemists with little appreciation of meteorology is again incorrect and insulting to the numerous meteorologists and dynamicists who have been involved in the arctic and Antarctic aircraft campaigns and the international scientific ozone assessments. The impact of meteorological processes on daily changes in chemical composition and on the long-term depletion of ozone is an integral component of all analyses.

Your article implied that the press release was based on limited scientific data with a new tool, which had not yet undergone the scrutiny of peer review. The facts do not support this implication. The press statement was not based on data from a single flight, but rather on data obtained from more than 20 NASA ER-2 aircraft flights over a six-month period, in conjunction with a number of DC-8 flights and more than several months of "near-global" satellite observations. All critical data reported at the press conference had been obtained by instruments that have been thoroughly tested in the field, and their prior results were stringently peer-reviewed in the scientific literature. There have been over 130 flights of the ER-2 since 1987 studying the chemical, meteorological and radiative processes controlling atmospheric ozone, including the Antarctic aircraft campaign in 1987 and arctic campaign in 1989.

The press release correctly stated that highly elevated concentrations of the chlorine monoxide radical, the key agent responsible for stratospheric ozone depletion, were observed in the arctic by both the in situ sensor on the ER-2 aircraft and the remote sounding sensor on the Upper Atmosphere Research Satellite at high latitudes in the Northern Hemisphere over populated areas. Concentrations of chlorine monoxide as high as 1.5 parts per billion by volume

(ppbv) were observed over Canada and northern New England using the aircraft sensor. Even higher values than 1.5 ppbv were observed by the satellite sensor over Europe and Asia. These are the highest atmospheric concentrations ever observed. The release also said the highly elevated concentrations of chlorine monoxide, and companion measurements of bromine monoxide, implied that ozone levels within the arctic vortex could decrease at a rate of 1 to 2 percent per day at ER-2 flight altitudes, depending on how long those chemical conditions persisted under sunlit conditions.

The NASA, NOAA and academic scientists involved in the data collection and analysis concluded that they had an obligation to release these findings because of their importance. The press release correctly, and rightly, warned that under "unfavorable" meteorological conditions, significant ozone depletion could occur either this year or some year in the future while the concentrations of chlorine and bromine are comparable to, or higher than, those of today. The press release did not, however, state that an "ozone hole" would occur this year. The atmospheric concentrations of ozone at northern high latitudes in winter and spring are highly variable; to ascertain whether significant ozone depletion has occurred this winter requires careful analysis of all available aircraft and satellite data. NASA and NOAA will be in a position to appraise the extent of this year's seasonal ozone depletion during April. An ozone decrease is likely to be widely distributed; hence the term "ozone hole" is a misnomer.

Allegations that the scientists involved in research in environmental issues, such as ozone depletion and global warming, are driven by funding considerations are an insult to the integrity of not only the scientists but also the funding agencies and my office, which plays a critical role in the establishment of research priorities. Government funding is not driven by alarmism. The U.S. Global Change Research Program was established as a presidential initiative to provide the scientific basis for national and international policy decisions by investigating the influence of all natural phenomena and human activities that might affect Earth's environment.

The president recognized the danger of a continued erosion of the ozone layer at middle and high latitudes and provided critical leadership to the international community by announcing that the U.S. would eliminate the production and consumption

of these chemicals by Dec. 31, 1995, faster than currently required. Bush's action is not a crash project at major expense to the American people. In fact, the costs of protecting society will be much less than paying the costs associated with the adverse consequences of ozone depletion. In addition, it bears emphasis that the president's action has been strongly endorsed by both U.S. industry and European governments.

These new data on ozone have potentially serious consequences for all humanity, and it is important that they be made available both quickly and correctly. So also is it important that appropriate action based on them be taken. This the president has done.

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

Mr. Bromley is a skilled defender of the prevailing ideology of ozone and of the president he serves. But his letter distorts my article and, worse, is part of a campaign of intimidation directed at those in the scientific community who dare dissent from current wisdom.

Bromley's assertion that scientists involved in research in environmental issues are not driven by funding considerations is unfounded. All science is driven by funding considerations. Furthermore, it is widely known in the scientific community that the atmospheric chemists have been the driving force in shaping our understanding of ozone depletion. Many do fine work, and the article did not "insult" their contribution. It pointed out that there are many other factors at work in ozone depletion, factors the public does not hear about due to an unfortunate conjunction of scientific, political and media interests.

That conjunction was a central issue in my article. I am grateful that Bromley is now backing away from the misleading term "ozone hole" — a term the ideologists of ozone, who know better, have done little to discourage. As I demonstrated, it was the conjunction of scientific, political and media forces that pushed the Bush administration to accelerate the CFC phaseout, and not merely the NASA press release and the studies that preceded it, as Mr. Bromley states. These same interests give little thought to the true costs of a hasty CFC phaseout, which, contrary to Bromley's claims, would be high — M.M.

Write: *Insight*, Dialog Editor, 3600 New York Ave. N.E., Washington, D.C. 20002. Fax: (202) 529-2484. Please include an address and a daytime phone number. Letters may be edited for space.

THE WHITE HOUSE

WASHINGTON

April 16, 1992

MEMORANDUM FOR THE PRESIDENT

FROM:

D. ALLAN BROMLEY

Alan

SUBJECT:

**A PCAST WHITE PAPER ON TECHNOLOGY AND THE
AMERICAN STANDARD OF LIVING**

I have the pleasure of enclosing a paper prepared by Dr. Ralph Gomory and your PCAST members on the above topic.

In my opinion it is an excellent statement of the role that technology can play in making America a more productive society and in improving the standard of living for all our citizens.

I have been discussing a possible initiative in this area with Messrs Skinner, Moore and Yeutter and hope to be able to have it available for your consideration in the near future.

Enclosure

Technology and the American Standard of Living

The everyday world we have today is the creation, in large part, of the many novel technologies and manufacturing skills of the last 150 years and of the American institutions that made such effective use of them. Change began with the steam engine powering the factories of the industrial revolution, iron, steel, and oil became plentiful, railroads and the telegraph wire were invented and penetrated the rural isolation in which most of the world's population had always lived. The inventive capability and ingenuity of individuals brought forth one striking invention after another. Electricity for lighting supplanted the dim light of candles and kerosene and this in turn was followed rapidly by telephone and radio linking the world together.

With this remarkable surge of invention of new products and the equally remarkable ability to manufacture them in volume, the modern world appeared, and in the last hundred years much of that modern world was invented and made in America. Television followed radio, the automobile followed the railroads, airplanes provided unprecedented speed and linkage over vast distances. All this made possible an abundance of jobs in a growing economy and a standard of warmth, cleanliness, food, medical care, transportation, and entertainment at home that was not even thought of 150 years ago.

This great surge forward in the standard of living can be continued, but it is not automatic and to some extent the necessary leadership and initiative are no longer resident in the United States.

All the ingredients for great steps forward are at hand. To the role of the individual inventor we can add today the great power of invention represented by organized scientific research. The great strides taken by science, an area in which the U.S. leads the world, have led us to an understanding of the fundamentals of nature that is unprecedented. This understanding will allow us to develop new materials that are lighter, stronger, and more durable than those of today, and the new fundamental understanding of the workings of living organisms is leading us toward the cures of diseases once thought incurable. The computer and new modes of communication, such as optical fibers, will allow us whole new worlds of possibilities, new modes of work done from the home, a whole new level of intelligent machinery, and will point the way toward a new world and to a higher standard of living.

And with the knowledge we have today we can make these transformations with a knowledge of our environment and a concern for it that can avoid the negative environmental impacts of the earlier industrial revolution.

Nevertheless, in the United States over the last fifteen years we have seen a slowing in the increase in productivity as measured by output per hour worked. Our

Gross Domestic Product continues to improve, but in recent decades this has depended more on the increase in the size of the labor force than on increased labor productivity. America is producing more, but it is by working more hours. Yet in most other industrialized countries productivity continues to increase, rapidly approaching American standards. Will they pass us? How can we do better? We need to increase investment and savings, enhance the quality of our labor force and spur innovations. We focus on the latter.

America and American institutions responded to the technologies of the first industrial revolution and as a result our standard of living was what the rest of the world aimed at. We must take it as our goal to play a leading role in the innovation that will stimulate the next industrial revolution as well, so that our children and grandchildren will live far better than we do today.

To meet this challenge, we need three basic things.

- 1) We must assure the flow of new ideas and new understanding that are basic to the creation of new materials, new communications, a new standard of health care and the care of the environment. New ideas can occur anywhere -- on the production line, in industrial laboratories, and in the great systematic scientific developments based on the American university system. This nation and this government must be sure that America leads the world in the generation of ideas and hence in basic research, and

continues to be a leader in the development of truly new technologies.

2) We must be expert at translating new ideas and new technologies rapidly both into significant new products. This can often call for facing great and unpredictable uncertainties, and sometimes many years of trial and error, but it can result in the start of whole new industries.

3) We must revive the great American tradition of manufacturing so that we not only start but also build and retain great industries. American manufacturing ability built and then steadily improved the first great fleets of automobiles at a time when automobiles were still a toy of the rich in the rest of the world. That same ability poured out the great armadas of tanks, ships, and planes that turned the tide of World War II. Today there are new ways of manufacturing that must be mastered, in particular, a process of continuously improving existing products, often based on new technologies, must be mastered if we are not to invent new products and start new industries, only to see these go overseas as others manufacture improved versions of what we invented. We have seen this happen in important industries such as automobiles, semiconductors, and consumer electronics.

Many of these new technologies also hold out the possibility of significant advances in the service industries as well. These industries make up much of today's economy, and progress in these must also be a significant part of what we aim at.

All three of these things are necessary. Ideas without product cannot produce increasing prosperity. New products or approaches that do not lead to sustainable industries are also not adequate. We must invent, commercialize, manufacture and improve.

We will now list some possible actions. However, nothing listed here is as important as a Presidential commitment to American Industrial Effectiveness, and to using technology, organization, and knowledge to raise the American standard of living for all of our people. We have the technology and the people to do this. If the President makes this a visible goal, like education, formulations of that goal and many ways to move toward it will emerge.

In support of the first of these objectives we must provide an adequate and balanced support of university based basic research. The federal government has a long and proud history of supporting basic research since World War II, and many of the great possibilities of the future, particularly the health improvements based on molecular biology, owe their existence to the federal support that made fundamental understanding possible.

However, there has been a natural tendency to support large numbers of people at the expense of facilities, with the result that today many of our finest scientists work in obsolete labs and use equipment that is out of date and inadequate or inferior to that

in use in other countries. For this reason we propose government action to modernize the university/research infrastructure and ensure its uptodateness in the future. This is a necessary step if we are to continue to lead the world in the generation of new ideas.

The evolution of new ideas into a form that can become a product or process can be difficult or slow. This is enormously important, since the gap between idea and product can be great and its bridging can be the work of many years and sometimes of decades. In this area of development of new technologies we are being challenged as never before by a new and long range Japanese effort and by the rapid growth of new foreign laboratories and capabilities.

Here the economic climate can play an important role by being one in which the formation of new entrepreneurial companies can take place, and one in which established companies will continue to invent and invest in the improvement of existing products. But some technologies take a long time to develop and the developer takes great risks and may not, because of the time lags involved, capture all the benefits. For these important generic technologies the government can play a role through helping support generic advanced technologies in close cooperation with those who use them, as it did in the past in agriculture, or in supplying key facilities as it did effectively in the early days of the aviation industry with wind tunnels.

In this connection our national labs contain a great resource. Today we spend

\$22 billion a year on national labs that are capable of scientific and technical work of a high degree of sophistication. However, many of the missions of these labs had their origins in, or were influenced by, the long history of the cold war. These labs have served our country well in the past, and we must be sure that they serve it well in the future. In the more benign atmosphere of the post cold war world there is the possibility of redirecting this great force toward bettering our standard of living rather than to warding off a threat that now has greatly diminished. The federal government should, in a manner informed by the input of potential users, undertake a process of assigning new missions to some of these laboratories in such a way that they become sources of new technologies that contribute to conservation technologies, to better energy technologies, to a better environment, to the nation's infrastructure, or to better industrial products.

On the third point, manufacturing and development are necessary if these ideas are to provide new products and new jobs. Manufacturing today is neither dull nor routine nor static. It has changed and continues to change enormously in organization and management and in its technology. It is an important area of invention, and new processes for manufacturing and new techniques for product design and improvement are an important source of this country's progress. We should take it as one of our national goals to lead the world in manufacturing or we will not benefit from our own ideas. The federal government can help through stressing manufacturing in its support of engineering education, through the award of fellowships in research on manufacturing

technologies, through recognizing great achievement in manufacturing as it does today in science and technology (a National Medal of Manufacturing?), and by a continuing stress on and recognition of quality as it does today in the Malcolm Baldrige Award. We should support the emerging Federal Initiative in this area.

In addition we need to find ways to build up the use of technology in the large and important service sector.

In general the support of education helps industrial leadership, so that the Presidential goals in education are complementary to the goal of industrial leadership. However, there are certain aspects of education that are especially supportive of technology and manufacturing. Practical [Vocational?] education, education for work, as well as education for manufacturing and production in the engineering curriculum must be raised both in content and in prestige, and this can be supported by federal initiatives that make curriculum development practical as well as putting the prestige of the government behind the dignity of this work. Training for work, ie., development of the skills needed on a manufacturing line, etc., is far more developed in Japan and Germany, for example, than in the U.S. This is in part a question of prestige. In the U.S. there is a feeling that not going to college is second rate, and that more abstract knowledge is better than being able to do things. We need to change this point of view to a recognition that both matter. This lost emphasis on practical skills has already over a period of many years led to a downgrading of manufacturing within companies.

We now need more reward and recognition of manufacturing skills, an improvement in design for manufacturability, and in the many inputs to improved manufacturing that can originate from the workers themselves. Training for work needs to be revitalized in the nation's schools, and in community colleges. Training in industry must be encouraged for the present work force. Investing in workers' skills should be a normal part of industrial life; we cannot wait for revitalized schools to produce a whole new work force.

It is important for the President to enlist industrial leaders in an area in which they are so important and to hear from them what particulars would make a difference to their particular industries. Industry must go beyond the platitudes of a balanced budget, etc. The resulting visibility of the President committing to industrial strength as a major national goal alone will make a great difference.

THE WHITE HOUSE
WASHINGTON

April 7, 1992

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY 

SUBJECT: PROPOSED AWARDEES FOR THE NATIONAL MEDAL OF
SCIENCE AND THE NATIONAL MEDAL OF TECHNOLOGY,
1992

- I. ACTION-FORCING EVENT: Annual award of the National Medal of Science and National Medal of Technology.
- II. ANALYSIS: The National Medal of Science was established by the Act of August 25, 1959, entitled "An Act to Establish a National Medal of Science to Provide Recognition for Individuals Who Make Outstanding Contributions in the Physical, Biological, Mathematical, and Engineering Sciences," (Public Law 86-209 73 stat). Not more than twenty individuals shall be awarded the Medal of Science in one year and the individual, at the time such award is made, must be a citizen or other national of the United States. Since the first presentation in 1962 there have been 304 National Medal of Science Awards.

The National Medal of Technology was established by Congress in 1980 as part of the Stevenson-Wydler Technology Innovation Act to give Presidential recognition for outstanding contributions to the well-being of the United States through the development or application of technology. There is no annual limit to the number of Medals of Technology which may be awarded. Since the first presentation in 1985 there have been 65 Medals awarded. The award may be made to any U.S. citizen, to as many as four U.S. citizens as a group, or to any U.S.-owned company.

Security name checks have been completed (Counsel's clearance attached) and I recommend the following 16 recipients for the 1992 National Medal of Science and Medal of Technology.

III. RECOMMENDATION: Approve the following 16 nominees for the National of Science (8) and National Medal of Technology (8).

MOS

Eleanor J. Gibson
Allen Lewell
Calvin F. Quate
Eugene M. Shoemaker
Howard E. Simmons, Jr.
Maxine F. Singer
Howard M. Temin
John R. Whinnery

MOT

William H. Gates
W. Lincoln Hawkins
Joseph M. Juran
Charles D. Kelman
Merck and Co., Inc.
Delbert H. Meyer
Paul Weisz
Norman Joseph Woodland

IV. DECISION: Signature _____

____ approve ____ approve as amended ____ reject ____ no action

Attachments:

White House Counsel's clearance
Citations of proposed awardees

THE WHITE HOUSE
WASHINGTON

March 6, 1992

MEMORANDUM FOR D. ALLAN BROMLEY

Assistant to the President for
Science and Technology

FROM:

JANET REHNQUIST *JR*
Associate Counsel to the President

SUBJECT:

1992 Presidential Awards for the National Medal of
Technology

In response to your memorandum of February 12, 1992 regarding the 1992 National Medal of Technology, this is to inform you that Counsel's Office has completed its review, and we have no legal objections to this list of nominees.

Thank you for your patience in this matter.

THE WHITE HOUSE
WASHINGTON

February 11, 1992

MEMORANDUM FOR PHILLIP D. BRADY
Assistant to the President and Staff Secretary

FROM: JANET REHNQUIST *JR*
Associate Counsel to the President

SUBJECT: National Medal of Science - 1992

This is in response to your January 23, 1992 staffing memo (#298602SS) regarding the 1992 National Medal of Science. Please be advised that we have to complete an FBI name check on the individual nominees prior to clearing any Presidential award. We have concluded the above-referenced matter today, however, and have no legal objections to these awards.

Thank you for the opportunity to review this matter.

cc: Lisa Caldwell
Office of Science and Technology

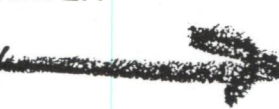
Jane Dannenhauer
White House Security Office

WHITE HOUSE STAFFING MEMORANDUM

DATE. 1/23/92ACTION/CONCURRENCE COMMENT DUE BY: COB, TUESDAY, JAN. 28

NATIONAL MEDAL OF SCIENCE - 1992

SUBJECT: _____

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☐	☐	HORNER	☐	☐
SKINNER	☐	☒	MCCLURE	☐	☐
SCOWCROFT	☒	☐	PETERSMEYER	☐	☐
DARMAN	☒	☐	PORTER	☐	☐
BRADY	☐	☒	ROGICH	☐	☐
BROMLEY	☐	☒	SMITH	☐	☐
CARD	☒	☐	_____	☐	☐
DEMAREST	☐	☐	_____	☐	☐
FITZWATER	☐	☐	_____	☐	☐
GRAY 	☒	☐	_____	☐	☐
HOLIDAY	☒	☐	_____	☐	☐

REMARKS:

Please provide comments on the attached directly to this office NO LATER THAN COB, THURSDAY, JANUARY 28, 1992.

Thank you.

RESPONSE: _____

PHILLIP D. BRADY
 Assistant to the President
 and Staff Secretary
 Ext. 2702

THE WHITE HOUSE

WASHINGTON

January 10, 1992

02 JAN 13 10:07

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY *Allan*

SUBJECT: NATIONAL MEDAL OF SCIENCE - 1992

The Acting Chairman of your Committee on the National Medal of Science, Dr. Carl O. Bostrom, has asked me to forward his letter of December 18, 1991 to you enclosing the Committee's alphabetic list of 26 candidates whom it has selected as worthy of the honor conferred by award of the National Medal of Science.

The Committee's assumption was that twenty would be selected to actually receive the medal with six serving as alternates should they be required.

Over the past several years there has, however, been growing concern that in awarding 20 Medals of Science and 20 Medals of Technology each year the honor involved was being substantially diluted and the Presidential character of these awards eroded. This has also been reflected in substantially reduced media interest in recent years.

After extensive discussion with Walter Massey at NSF and Bob White at Commerce, who have the responsibilities, respectively, for arranging details of the Medals of Science and Technology awards, we strongly recommend that in 1992 the number of awards be reduced to 8 in each of the two areas -- for a total of 16 in all.

In prior years there had been considerable discussion about associating a \$200,000 cash award with each Medal but in today's world when many young scientists are experiencing very real difficulty obtaining support for their work, we would find it difficult to recommend cash awards to persons who, by and large, have passed their most productive periods and are being honored for past accomplishments.

We are still very sensitive, however, to the importance of highlighting the awardees as role models for American youth and of the importance of these award activities as part of your role as the Education President. To that end, the Department of Commerce has fostered the establishment of a Medal of Technology Foundation that has undertaken the responsibility for generating much more extensive media coverage than in the past for the awardees as well as educational packages built around the accomplishment of each for widespread distribution to the nation's schools. The National Science Foundation has undertaken to provide the same sort of coverage for the Medal of Science winners.

I am convinced that these activities, coupled with the reduction in the numbers of awardees, will better serve your purposes in providing role models for American youth as well as recognizing truly outstanding contributions to the nation -- and to the world -- in science and technology.

Final recommendations for the Medal of Technology awardees will be forwarded to you directly from the Department of Commerce and I include herewith my recommendations for the eight winners of the 1992 Medals of Science selected from the original list of 26 developed by your selection committee for that Medal. I have discussed the reduction with Dr. Carl Bostrom, the Chairman of that Committee.

Attachment

Recommended Recipients for the 1992 National Medals of Science

Eleanor J. Gibson
Susan Linn Sage Professor of Psychology Emeritus
Cornell University
Ithaca, New York

Citation:

For her conceptual insights in developing a theory of perceptual learning; and for achieving a deeper understanding of perceptual development in children and basic processes in reading.

* * * * *

Allen Newell
U.S. and Helen Whitaker University Professor
of Computer Science and University Professor
Carnegie-Mellon University
Pittsburgh, Pennsylvania

Citation:

For his seminal contributions to the development of artificial intelligence, the theory of human cognition and the software and hardware of computational systems for complex information processing.

* * * * *

Calvin F. Quate
Professor of Applied Physics and Electrical Engineering
Stanford University
Stanford, California

Citation:

For his contributions to microscopy and for the invention of the scanning acoustic microscope and the atomic force microscope.

* * * * *

Eugene M. Shoemaker
Geologist
U.S. Geological Survey
Flagstaff, Arizona

Citation:

For his pioneering research and inspiring leadership in the geological exploration of the solar systems planets; for his entrepreneurial creation and direction of the Branch of Astrogeology of the U.S. Geological Survey, and for his research on earth- approaching asteroids and comets and their potential impact effects.

* * * * *

Howard E. Simmons, Jr.
Vice President for Central Research & Development
E.I. du Pont de Nemours
Wilmington, Delaware

Citation:

For his fundamental contributions to the knowledge of organic chemistry, and for his productive management of the premier industrial chemical research program in the United States.

* * * * *

Maxine F. Singer
President
Carnegie Institute of Washington
Washington, D.C.

Citation:

For her outstanding scientific accomplishments and her deep concern for the societal responsibility of the scientist.

* * * * *

Howard M. Temin
Professor of Oncology and
American Society, Rausch and Steenbock Professor
McArdle Laboratory for Cancer Research
University of Wisconsin
Madison, Wisconsin

Citation:

For his demonstration of the existence of RNA-directed DNA synthesis, leading to the discovery of specific proto-oncogenesis within Eukaryotic cells and the roles of such genes in oncogenesis by viruses and other agents, laying the foundation for our knowledge of the replication of HIV in human cells.

* * * * *

John R. Whinnery
University Professor Emeritus
University of California
Berkeley, California

Citation:

For his research contributions to microwaves, lasers, and quantum electronics; for his excellence as a teacher and author; and for his extensive services to government and professional organizations.

* * * * *



THE SECRETARY OF COMMERCE

Washington, D.C. 20230

April 3, 1992

MEMORANDUM FOR THE PRESIDENT

SUBJECT: Recommendations for Award of the National Medal of Technology

You have stated in recent speeches that many of the world's most advanced technologies, from robotics to the VCR, were developed in America first, but commercialized by our competitors. The National Medal of Technology is symbolic of our Nation's commitment to reverse this trend by recognizing excellence in technological innovation as well as technology commercialization.

Attached are the recommendations for the 1992 award recipients for your approval as required by the Stevenson Wydler Technology Innovation Act. Our private sector Nomination Evaluation Committee and our Department's Steering Committee made these recommendations on the basis of each company or individual's outstanding contribution to the promotion of technology or technological manpower. Each achievement resulted in improvement of the economic, environmental, and social well-being of the United States. I recommend that you approve the list of Medal recipients.

A handwritten signature in cursive script, reading "Barbara Hackman Franklin".

Barbara Hackman Franklin

Attachment



UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for Technology
Washington, D.C. 20230

LIST OF NATIONAL MEDAL OF TECHNOLOGY
RECIPIENTS FOR 1992
APPROVED BY THE NATIONAL MEDAL OF TECHNOLOGY
DOC STEERING COMMITTEE
ON FEBRUARY 6, 1992

As per the Medal criteria, the National Medal of Technology will be awarded this year in the following categories:

- o (AMT) Promotion of advanced manufacturing technology
 - o (TM) Individuals and companies best embodying technology management principles
 - o (PPI) General product and process innovations; and
 - o (TW) Promotion of technologically competent workforce
1. William H. Gates--For the development of Microsoft Corporation into the world leader in personal computer software (TM).
 2. Merck & Co., Inc. (Award accepted by Dr. P. Roy Vagelos or the CEO)--For sustained innovation focusing on the discovery, development and worldwide commercialization of superior human and animal health products while optimizing environmental impact (PPI).
 3. Charles D. Kelman--For his innovations in cataract surgical technology resulting in reduced rehabilitation time for over 700,000 Americans per year with annual savings of over \$7 billion in medical cost; increased worker output; and the creation of an industry with over 20 U.S. companies (PPI).
 4. Paul Weisz--For basic discoveries and management in the field of zeolite catalysis, in conjunction with his colleagues at Mobil Oil, leading to zeolite-based technologies now producing products valued at billions of dollars per year (PPI).
 5. Norman Joseph Woodland--For his invention of bar code technology, and for his UPC bar code proposal. Together they enabled improved data management and increased productivity in all industrial sectors. His invention gave rise to a \$1.4 billion per year U.S. bar code industry (PPI).

6. Delbert H. Meyer--For his invention of the process for purified terephthalic acid (PTA)--the key building block in the production of polyester and for his contributions to the field of organic chemistry in general (PPI).
7. W. Lincoln Hawkins--For invention, quality validation and technology transfer of long-lived polymeric materials for the communications industry, and for leadership in broadening the basis of scientific manpower in the United States (PPI).
8. Joseph M. Juran--For his lifetime work of providing the key principles and methods by which enterprises manage the quality of their products and processes, enhancing their ability to compete in the global marketplace (TM).

Dr. Robert M. White, Ph.D.
Chairman

THE WHITE HOUSE
WASHINGTON

March 18, 1992

MEMORANDUM FOR THE PRESIDENT

FROM:

D. ALLAN BROMLEY



SUBJECT:

THE REPORT OF YOUR PCAST PANEL ON SCIENCE,
TECHNOLOGY AND NATIONAL SECURITY

The PCAST Panel, cochaired by Drs. Sol Buchsbaum and John Foster, Jr., has completed its study of the roles of science and technology in the vastly changed national security environment in which -- thanks in substantial measure to your activities -- we find ourselves in the post Cold War era. There are major opportunities here as well as major potential pitfalls.

The Panel members have brought a broad range of expertise and experience to their task and I am happy to transmit their report to you with the unanimous support of the entire PCAST. We would welcome the opportunity, perhaps at our April meeting, to discuss this report with you or expand at any time on any section or sections of the report.

Enclosure

**THE PRESIDENT'S COUNCIL OF ADVISORS
ON SCIENCE AND TECHNOLOGY**

*Report of the Panel on
Science, Technology, and National Security*

An Overview

February 1992

THE WHITE HOUSE

WASHINGTON

March 17, 1992

ACTION

MEMORANDUM FOR THE PRESIDENT

FROM:

D. ALLAN BROMLEY

Duan

SUBJECT:

Appointment of New Vice Chairman for PCAST

- I. **ACTION-FORCING EVENT:** With your appointment of Bernadine Healy to the Directorship of the National Institutes of Health, a vacancy has been created in the position of Vice Chairman on the President's Council of Advisors on Science and Technology (PCAST). In response to this opportunity, I would like to suggest the appointment of Dr. Harold T. Shapiro, President of Princeton University, to be the new PCAST Vice Chairman.
- II. **ANALYSIS:** Dr. Shapiro, who has served on the Council since its inception in February 1990, has been an extremely effective member and has shown exceptional leadership in raising new issues for PCAST consideration. Though he is an economist by profession, Dr. Shapiro has a remarkable ability to work effectively with scientists and engineers. Furthermore, I believe it would be symbolically important to appoint a social scientist, particularly one of impeccable repute, to be the Vice Chairman of PCAST.
- III. **RECOMMENDATION:** I recommend approval of Dr. Shapiro as the new PCAST Vice Chairman.
- IV. **DECISION:**

☐ approve ☐ approve as amended ☐ reject ☐ no action

THE WHITE HOUSE
WASHINGTON

March 18, 1992

MEMORANDUM FOR THE PRESIDENT

FROM:

D. ALLAN BROMLEY

Alan

SUBJECT:

THE REPORT OF YOUR PCAST PANEL ON SCIENCE,
TECHNOLOGY AND NATIONAL SECURITY

The PCAST Panel, cochaired by Drs. Sol Buchsbaum and John Foster, Jr., has completed its study of the roles of science and technology in the vastly changed national security environment in which -- thanks in substantial measure to your activities -- we find ourselves in the post Cold War era. There are major opportunities here as well as major potential pitfalls.

The Panel members have brought a broad range of expertise and experience to their task and I am happy to transmit their report to you with the unanimous support of the entire PCAST. We would welcome the opportunity, perhaps at our April meeting, to discuss this report with you or expand at any time on any section or sections of the report.

Enclosure

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
03a. Report	Report of the Panel on Science, Technology, and National Security: Overview (6 pp.)	2/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Correspondence Files
WHORM Cat.:
File Location: D. Allan Bromley Correspondence - Presidential [1992]

Date Closed:	2/11/2010	OA/ID Number:	62005-008
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

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

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

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

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

(b)(1) National security classified information [(b)(1) of the FOIA]
 (b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
 (b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
 (b)(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
 (b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
 (b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
 (b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
 (b)(9) Release would disclose geological or geophysical information

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
03b. Report	Report of the Panel on Science, Technology, and National Security (28 pp.)	2/92	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Correspondence Files
WHORM Cat.:
File Location: D. Allan Bromley Correspondence - Presidential [1992]

Date Closed:	2/11/2010	OA/ID Number:	62005-008
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
Re-review Case #:		Appeal Disposition:	
P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

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P-1 National Security Classified Information [(a)(1) of the PRA]
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(b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
(b)(9) Release would disclose geological or geophysical information

GEORGE BUSH

To
Alan Bromley

—
Is this
true about
Yak??

Gay

Discussed with
the President
on April 20.
DAB

Handwritten text, likely a signature or name, appearing upside down and rotated.

January 31, 1992



Dear Dr. Schlegel:

On behalf of President Bush, thank you for your letter regarding the tentative decision to terminate the engineering program at Yale University. The President understands the concern that prompted you to write.

As an alumnus, the President takes an interest in events and developments that affect Yale. I will be sure to bring your letter to his attention.

With the President's best wishes,

Sincerely,

Shirley M. Green
Special Assistant to the President
for Presidential Messages
and Correspondence

Dr. Walter F. Schlegel
Process Engineering Consultant
150 Freshmeadow Drive
Trumbull, CT 06611

SMG/BW/SMG/JM/bws (Corres.#: 611491)

✓ cc: copy of incoming and outgoing to SMG for reading file

✓
PROCESS ENGINEERING CONSULTANT

Walter F. Schlegel

Chemical Engineer

(203) 268-7247

Walter F. Schlegel
150 Freshmeadow Drive
Gumball, Connecticut 06611

Office of the President

Jan 1, 1992

Dear Sir:

I would like to bring to the attention of the President a copy of a letter sent to the Provost of his Alma Mater, Yale University, relating to the tentative decision to terminate the Engineering Program at Yale at a crisis period in our industrial culture when foreign competition is at its most intense. The decision is culturally inappropriate. Please see what the President is willing to do to influence and reverse this unfortunate decision. Thank you.

Respectfully yours,

Walter F. Schlegel

Walter F Schlegel
Yale 1955E

PROCESS ENGINEERING CONSULTANT

Walter F. Lehleget

Chemical Engineer

50 Freshmeadow Drive
New Britain, Connecticut 06051

(203) 268-7247

Frank Turner, Provost
Yale University
117 Hall of Graduate Studies
New Haven, CT. 06520

Jan 1, 1992

Dear Mr. Turner:

The University's tentative decision to terminate the engineering program at Yale is a most disturbing development. By so doing, you will have relegated the once finest and most prestigious engineering school in the nation, the Sheffield Scientific School, to an inconsequential position among the other fossils at the Peabody. Shame on you!

Graduates from the Sheffield School have historically been major financial contributors to the University over the years, and when the Engineering Departments were dissolved last in the early 1960's, these graduates made their voices felt at each and every financial appeal opportunity. Has the University forgotten so soon?

The two programs, those of engineering and liberal arts, complement one another. It's tragic when a collegiate is graduated with all of the mathematical and science skills of a bagel. On the other hand, I have, over the years, employed many graduates of strictly engineering institutions whose writing skills are similarly underdeveloped and whose literary interests don't reach far beyond the weekend NFL football scores. Yale has a social responsibility to turn out that fully "well rounded" student body necessary for the functioning of a complex society, and engineering is an essential element of that objective.

In my judgement, an engineering education in a liberal arts institution is the very best education one can ever hope to receive, and I have so advised my youngest son. He is currently pursuing an education in Chemical Engineering (where did I go wrong?) with a concomitant conscious effort to be as "well rounded" as possible. As he points out, on an engineering exam, there is a right and a wrong, while on a literary essay, there's only a right and a left.

Without an engineering program, Yale will no longer be the university from which I graduated. Among its counterpart Ivy League schools, it will have rather uniquely abandoned what it probably considers to be the "trade school" aspects of engineering, and will, instead, direct it's efforts to the molding of students to condition them to conform to a response pattern that makes them "good members of society" in accordance with the teaching and educational philosophy of John Dewey (and, unfortunately, of Hegel). How tragic!

If your reason for considering such action is strongly financial in nature, then I suggest that you first reexamine the management superstructure you have established for the Engineering Departments. There seemed to be an insensitivity to the fact that, at an undergraduate level, engineering training for the first three years is generic and does not require heavy departmentalization. Your management superstructure always seemed top heavy to me, and from the very beginning seemed to suggest that it was created without financial considerations in mind.

Did you know that it was through the Sheffield Scientific School and the efforts of Chemistry Professor Benjamin Silliman, Daniel Gilman, Professor Dana and others that Yale acquired ALL of the Connecticut land available through the Land Grant College Act signed by President Lincoln (at least until 1893, when Storrs Agricultural College was a recipient).

Please keep me apprised of developments as they occur.

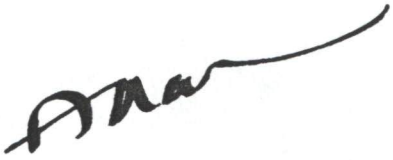
Very truly yours,

Walter F Schlegel
Yale 1955E

THE WHITE HOUSE
WASHINGTON

February 12, 1992

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY 
SUBJECT: AN EXAMINATION OF THE FEDERAL
GOVERNMENT-UNIVERSITY INTERFACE

The cooperative relationship between the Federal Government and the nation's colleges and universities, forged in the immediate post-war period, has served us well. For many reasons, however, this relationship is eroding.

David Packard and I co-chaired a major study of this question in 1985 and published our findings as a White House Science Council report in early 1986. Many of its recommendations have since been implemented; some have not.

Most important, however, is the fact that isolated cases of alleged misconduct, of over-billing of indirect costs by some universities and other financial irregularities coming at the same time as growing uneasiness in the universities about their ability to maintain their physical infrastructures, the quality of their faculty, and the quality of their programs under tight budgetary restraints, has changed substantially the entire environment for government-university interactions.

The members of PCAST are unanimous in their view that a careful examination of these questions is both important and timely and are prepared to undertake such an examination on a time scale that would produce a report for you shortly after the beginning of your next Administration. If you approve, the study would be chaired, as before, by David Packard to provide continuity and Harold Shapiro, President of Princeton and an economist by profession, would serve as Vice Chairman. Because of the perceived importance of this study the PCAST would propose to function as a committee of the whole and is prepared to devote whatever time and effort may be necessary to complete a study worthy of your attention.

While the PCAST study would provide a view of the government-university relationship from outside government, I would propose to establish, in parallel, an ad hoc interagency working group under the Federal Coordinating Council for Science, Engineering and Technology (FCCSET) to provide a complementary view from within government. Taken together these, I believe, will provide you with options for the actions needed to restore this vital part of our science and technology base to a more healthy and productive condition.

In launching this study, I would ask that you sign a charge letter to PCAST and I have included a draft of such a letter for your consideration.

Enclosure

PROPOSED DRAFT

Dear Allan:

Since World War II, the Federal government and our universities have forged a partnership that is unique and unparalleled in its accomplishments. Federal investment in our universities and colleges over the past half century has yielded rich returns. The products of those institutions -- high caliber human talent and new scientific and technical knowledge -- have enabled the United States to emerge as the world's scientific and technical leader.

As the world adjusts to dramatic change, it is essential that our colleges and universities remain the best anywhere and that their scientific productivity for the nation remains high. Many of our universities, sensitive to the changing environment around them, are in the process of re-examining and rethinking the important roles they play in our society. This is a healthy process that is to be encouraged.

In parallel, and reflecting the historic partnership between the Federal government and universities that has been so central to our nation's well being and world leadership, I believe it is time for the Federal government also to re-examine that relationship and to assess the overall health of those institutions.

Accordingly, I ask the PCAST to develop for me a vision of the role of our colleges and universities as we approach the beginning of the next century and to make recommendations as to the principles that should underlie the relationship between the Federal government and our colleges and universities.

The Council should include within its broad view a specific examination of the role of our these institutions in two important areas: first, in supplying our nation with an adequate supply of first-rate scientific and technical talent; and, second, in conducting a significant share of the research essential to the nation's needs.

PROPOSED DRAFT, PAGE TWO

I would hope that in its recommendations the PCAST will address explicitly ways to improve the effectiveness of the Federal-university partnership in research and education. Those recommendations will be extremely valuable to the White House and the Federal agencies in dealing with our colleges and universities over the next decade.

I would like to receive the Council's report within approximately nine months. Best wishes and God speed the efforts of you and your colleagues.

Sincerely,

George Bush

**D. Allan Bromley
Chairman
President's Council of Advisors
on Science and Technology**

THE WHITE HOUSE
WASHINGTON

February 12, 1992

ACTION

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY 
ASSISTANT TO THE PRESIDENT
FOR SCIENCE AND TECHNOLOGY

SUBJECT: PRESIDENTIAL AWARDS FOR EXCELLENCE IN SCIENCE AND
MATHEMATICS TEACHING

- I. **ACTION FORCING EVENT:** Approval of 108 secondary school teachers to receive this year's Presidential Awards for Excellence in Science and Mathematics Teaching on March 12, 1992. The elementary teacher awardees were greeted by you on October 4, 1991.
- II. **BACKGROUND:** This award represents the highest honor of its kind that any mathematics or science teacher can receive in the United States. It applauds the efforts these teachers have made to improve the skills of our Nation's young people. The award includes a certificate and a \$7,500 grant given to the recipient's school.

Established in 1983 by the Education for Economic Security Act (P.L. 98-377), and amended by the National Science Foundation Authorization Act of 1988 (P.L. 100-570), the awards are given annually to 216 teachers, four from each state, the District of Columbia, and Puerto Rico. Secondary school teachers have received the award every year since 1983. Awards to elementary school teachers have been given since 1990 as a result of the 1988 amendment to the law.

Prior to your review, the attached list of names has undergone an extensive selection process administered by the National Science Foundation. Nominations may come from any source and are sent to the state directors of the National Council of Teachers of Mathematics or the Council of State Supervisors for consideration. Six mathematics teachers (three elementary, three secondary) and six Science teachers (three elementary, three secondary) from each of the 50 states, the District of Columbia, the U.S. territories, Puerto Rico, and the Department of Defense Dependent Schools are selected by committees of their peers in each state for local recognition. The names are then forwarded for consideration by two National Selection Boards. The National Science Teachers Association provides staff and

National Science Foundation from nominations submitted by various elementary and secondary mathematics and science organizations. The Boards select the four finalists from each state and transmit their recommendations to the Assistant to the President for Science and Technology for approval and forwarding to the President for the final decision.

Award recipients are chosen on the basis of the excellence of their teaching performance and consideration of their background and experience including their formal education, continuing education activities, teaching experience, as well as professional and non-professional activities related to their role as a teacher. During the selection process, secondary teachers are asked to identify one critical problem to teaching science or mathematics in their school and discuss ways this problem might be resolved. Elementary teachers are asked what they consider to be the three to five most important things that children should learn from their science or mathematics experiences at their grade level. They are also asked how they would modify their mathematics or science programs to reflect the current thinking in the field, and what type of support they would need to implement such changes. In addition, teachers must provide evidence of their teaching through their students' work. Three letters of support from colleagues, students, former students, parents, or supervisors are requested from each applicant.

The elementary and secondary school award nominees have all undergone the customary FBI name check (please see attached memo dated August 8, 1991 from Janet Rehnquist).

- III. ACTION: This slate of nominees is forwarded to you for final decision.
- IV. RECOMMENDATION: I recommend approval of the attached list of nominees, and the forwarding of the approved list to the clerk's office so that certificates can be signed.
- V. DECISION: Sig. _____ DATE _____
- _____ APPROVE _____ REJECT _____ no action

attachments

THE WHITE HOUSE
WASHINGTON

August 8, 1991

MEMORANDUM FOR KENNETH P. YALE
Chief of Staff
Office of Science and Technology Policy

FROM: JANET REHNQUIST *JR*
Associate Counsel to the President

SUBJECT: Clearance for Nominees for the Presidential Awards
for Excellence in Science and Mathematics Teaching
(Elementary and Secondary Levels)

At your request, Counsel's office has reviewed the 216 names relative to the above-referenced Presidential Awards for Excellence. We have no legal objections to the 216 individuals.

Thank you for the opportunity to review this matter.

PRESIDENTIAL AWARDS FOR EXCELLENCE IN SCIENCE AND MATHEMATICS TEACHING

1991 Secondary Awardees

01/29/92

<u>NAME</u>	<u>STATE & DISCIPLINE</u>	<u>SCHOOL</u>	<u>HOME</u>
Carolyn Eck	Alabama Mathematics	Bradshaw High School 1201 Bradshaw Drive Florence, AL 35630 (205) 764-8821	Rt. 10, Box 230 Florence, AL 35630 (205) 766-6260
Robert E. Hayes	Alabama Science	Tallassee High School 502 Barnett Blvd. Tallassee, AL 36078 (205) 283-2187	1904 Whitmanfield Road Wetumpka, AL 36092 (205) 567-2532
Linda L. D. Smith	Alaska Mathematics	A. J. Dimond High School 2909 West 88th Avenue Anchorage, AK 99502 (907) 243-1141	6640 Round Tree Drive Anchorage, AK 99516 (907) 346-2467
Gary Arthur Bender	Alaska Science	Tanana Junior High School 600 Trainor Gate Road Fairbanks, AK 99701 (907) 452-8145	P.O. Box 82858 Fairbanks, AK 99708-2858 (907) 474-8804
Robert Barefoot	Arizona Mathematics	Chaparral High School 6935 E. Gold Dust Avenue Scottsdale, AZ 85253 (602) 443-7036	14836 N. 44th Street Phoenix, AZ 85032 (602) 482-7646
Imogene F. Bennett	Arizona Science	Chaparral High School 6935 E. Gold Dust Avenue Scottsdale, AZ 85252 (602) 443-7055	15225 N. 21 Place Phoenix, AZ 85022 (602) 992-9403
Dottie Johnson	Arkansas Mathematics	Arkansas High School 15th and Jefferson Texarkana, AR 75502 (501) 774-7641	2601 East 42nd Street Texarkana, AR 75502 (501) 774-8124
Elizabeth H. Fulton	Arkansas Science	North Little Rock High School West Campus 101 West 22 North Little Rock, AR 72114 (501) 771-8100	6600 Hawthorne Little Rock, AR 72207 (501) 663-9380
Roberta K. Koss	California Mathematics	Redwood High School 395 Doherty Drive Larkspur, CA 94939 (415) 924-6200	71 Twelveoak Hill Drive San Rafael, CA 94903 (415) 472-1728

<u>NAME</u>	<u>STATE & DISCIPLINE</u>	<u>SCHOOL</u>	<u>HOME</u>
Andria Erzberger	California Science	Palo Alto High School 50 Embarcadero Road Palo Alto, CA 94301 (415) 329-3841	13457 Thendara Lane Los Altos Hills, CA 94022 (415) 493-2356
Marilyn Stor	Colorado Mathematics	Arvada High School 7951 W. 65th Avenue Arvada, CO 80004 (303) 423-3830	9297 W. 91st Place Westminster, CO 80021 (303) 425-4724
Philip H. Ogata	Colorado Science	Boulder High School 1604 Arapahoe Boulder, CO 80302 (303) 442-2430	2580 Panorama Boulder, CO 80304 (303) 444-6662
Leslie Miles Paoletti	Connecticut Mathematics	Choate Rosemary Hall 333 Christian Street P.O. Box 788 Wallingford, CT 06492 (203) 269-7722	370 Maiden Lane P.O. Box 328 Durham, CT 06422 (203) 349-3756
Leslie V. Kei	Connecticut Science	Bloomfield Junior High School 330 Park Avenue Bloomfield, CT 06002 (203) 242-7701	6 Larchwood West Farmington, CT 06085 (203) 675-1883
Elza E. Bellow	DODDS Mathematics	Robert D. Edgren High School 432 Combat Support Group Misawa AFB, Japan APO San Francisco, CA 96519-0005 226-3351	Box 4072 APO San Francisco, CA 96519 53-4340
Donald L. Volz	DODDS Science	Mannheim High School APO New York, NY 09086 0621 722261	c/o Mannheim High School APO New York, NY 09086 06203 62228
Patricia L. Ahlborn	Delaware Mathematics	Wilmington Christian School P.O. Box 626 Hockessin, DE 19707 (302) 239-2121	505 Faraday Road Hockessin, DE 19707 (302) 239-0172
John E. Yanaitis	Delaware Science	William Penn High School 713 East Basin Road New Castle, DE 19720 (302) 323-2801	2621 Crossgates Drive Wilmington, DE 19808 (302) 998-1725
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Lucy H. McCorkle	District of Columbia Science	Cardozo Senior High School 13th & Clifton Streets, N.W. Washington, DC 20009 (202) 673-7385	10315 Sea Pines Drive Mitchellville, MD 20716 (301) 499-4288
Linda L. Walker	Florida Mathematics	Cobb Middle School 915 Hillcrest Avenue Tallahassee, FL 32308 (904) 488-3364	1842 Hill 'N' Dale South Tallahassee, FL 32311 (904) 878-2442
Carolynn S. Howell	Florida Science	Palm Bay High School 1 Pirate Lane Melbourne, FL 32901 (407) 952-5900	2593 Woodsmill Drive Melbourne, FL 32934 (407) 254-1029
Charlyn E. Shepherd	Georgia Mathematics	Alan C. Pope High School 3001 Kembre Road Marietta, GA 30062 (404) 509-6077	1130 Piedmont Ave., NE Atlanta, GA 30309 (404) 873-5426
Trissa Luftig	Georgia Science	Summerour Middle School 585 Mitchell Road Norcross, GA 30071 (404) 448-3045	5299 Lakesprings Drive Dunwoody, GA 30338 (404) 458-7455
Jeanne F. Nelson	Hawaii Mathematics	Kamehameha Schools Kapalama Heights Honolulu, HI 96817 (808) 842-8351	686 Ainapo Street Honolulu, HI 96825 (808) 395-5468
Ruth A. Fukuchi	Hawaii Science	Mililani High School 95-1200 Meheula Pkwy. Mililani, HI 96789 (808) 623-5800	59-589 Pupukea Road Haleiwa, HI 96712 (808) 638-7185
Richard Gehring	Idaho Mathematics	Sandpoint High School 310 S. Division Sandpoint, ID 83864 (208) 263-3034	4475 W. Oden Bay Road Sandpoint, ID 83864 (208) 263-6294
Kevin Collins	Idaho Science	Sandpoint Middle School 310 South Division Sandpoint, ID 83864 (208) 265-4169	Box 63 Kootenai, ID 83840 (208) 263-5617
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Robert D. Grimm	Illinois Science	William Fremd High School 1000 South Quentin Road Palatine, IL 60067 (708) 358-6222	814 South Dunton Avenue Arlington Heights, IL 60005 (708) 253-0671
Dale E. Nowlin	Indiana Mathematics	Central Middle School 725 Seventh Street Columbus, IN 47201 (812) 376-4284	1929 Caldwell Place Columbus, IN 47201 (812) 379-9902
Sam Chattin	Indiana Science	Scottsburg Middle School South Third Street Scottsburg, IN 47170 (812) 752-8962	RR#2, Box 177 Lexington, IN 47138 (812) 889-2072
Curt Tauke	Iowa Mathematics	Monticello Middle/High School 217 S. Maple Street Monticello, IA 52310 (319) 465-3575	202 N. Main, Apt. #5 Monticello, IA 52310 (319) 465-4621
Theresa Knapp	Iowa Science	Valley High School 1140 35th Street West Des Moines, IA 50265 (515) 226-2600	520 S. 28th Street West Des Moines, IA 50265 (515) 226-9117
Cathryn Ann Hund	Kansas Mathematics	St. Thomas Aquinas High School 11411 Pflumm Road Overland Park, KS 66215 (913) 345-1411	15122 S. Blackfoot Olathe, KS 66062 (913) 829-8867
Bob Rose	Kansas Science	Wichita Collegiate School 9115 E. 13th Street Wichita, KS 67206 (316) 634-0433	921 N. Battin Wichita, KS 67208-3515 (316) 683-9615
Robert J. Garvey	Kentucky Mathematics	St. Xavier High School 1609 Poplar Level Road Louisville, KY 40217 (502) 637-4712	1835 Princeton Drive Louisville, KY 40205 (502) 458-7582
Diane W. Hill	Kentucky Science	Ockerman Middle School 8300 U.S. 42 Florence, KY 41042 (606) 371-1162	7783 Walnut Creek Drive Florence, KY 41042 (606) 525-9310
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Celestine M. Pea	Louisiana Science	McKinley Middle Magnet School 1557 McCalop Street Baton Rouge, LA 70802 (504) 388-0089	4212 Rue De Valeur Baker, LA 70714-3850 (504) 774-2334
Jenny Jorgensen	Maine Mathematics	Bath Junior High School 6 Old Brunswick Road Bath, ME 04530 (207) 443-8270	Box 330 Arrowsic, ME 04530 (207) 442-7533
David Dougan	Maine Science	Ashland Community High School Hayward Street Ashland, ME 04732 (207) 435-3481	P.O. Box 332 Mapleton, ME 04757-0332 (207) 764-5387
Mary Jo Messenger	Maryland Mathematics	Centennial High School 4300 Centennial Lane Ellicott City, MD 21043 (410) 313-2856	7661 Sweet Hours Way Columbia, MD 21046 (410) 381-6942
Nusret Hisim	Maryland Science	Walkersville High School 81 Frederick Street Walkersville, MD 21793 (301) 845-2711	1786 Harvest Drive Frederick, MD 21702 (301) 663-4101
Edith C. Sparre	Massachusetts Mathematics	Jonas Clarke Middle School 17 Stedman Road Lexington, MA 02173 (617) 861-2450	2418 Massachusetts Avenue Lexington, MA 02173 (617) 862-6919
Larry Weathers	Massachusetts Science	The Bromfield School 14 Massachusetts Avenue Harvard, MA 02174 (508) 456-3233	101 Irving Street Arlington, MA 02174 (617) 646-9135
Nancy J. Watson	Michigan Mathematics	Jonesville Jr./Sr. High School 401 E. Chicago Street Jonesville, MI 49250 (517) 849-9934	21 Leroy Street Hillsdale, MI 49242 (517) 437-7412
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Susanne K. Westegaard	Minnesota Mathematics	Montgomery-Lonsdale Pub. Sch. 101 2nd Street, N.E. Montgomery, MN 56069 (612) 364-5252	205 3rd Street, S.W. Montgomery, MN 56069 (612) 364-5303

THE WHITE HOUSE

WASHINGTON

January 10, 1992

MEMORANDUM FOR THE PRESIDENT

FROM:

D. ALLAN BROMLEY



SUBJECT:

NATIONAL MEDAL OF SCIENCE - 1992

The Acting Chairman of your Committee on the National Medal of Science, Dr. Carl O. Bostrom, has asked me to forward his letter of December 18, 1991 to you enclosing the Committee's alphabetic list of 26 candidates whom it has selected as worthy of the honor conferred by award of the National Medal of Science.

The Committee's assumption was that twenty would be selected to actually receive the medal with six serving as alternates should they be required.

Over the past several years there has, however, been growing concern that in awarding 20 Medals of Science and 20 Medals of Technology each year the honor involved was being substantially diluted and the Presidential character of these awards eroded. This has also been reflected in substantially reduced media interest in recent years.

After extensive discussion with Walter Massey at NSF and Bob White at Commerce, who have the responsibilities, respectively, for arranging details of the Medals of Science and Technology awards, we strongly recommend that in 1992 the number of awards be reduced to 8 in each of the two areas -- for a total of 16 in all.

In prior years there had been considerable discussion about associating a \$200,000 cash award with each Medal but in today's world when many young scientists are experiencing very real difficulty obtaining support for their work, we would find it difficult to recommend cash awards to persons who, by and large, have passed their most productive periods and are being honored for past accomplishments.

We are still very sensitive, however, to the importance of highlighting the awardees as role models for American youth and of the importance of these award activities as part of your role as the Education President. To that end, the Department of Commerce has fostered the establishment of a Medal of Technology Foundation that has undertaken the responsibility for generating much more extensive media coverage than in the past for the awardees as well as educational packages built around the accomplishment of each for widespread distribution to the nation's schools. The National Science Foundation has undertaken to provide the same sort of coverage for the Medal of Science winners.

I am convinced that these activities, coupled with the reduction in the numbers of awardees, will better serve your purposes in providing role models for American youth as well as recognizing truly outstanding contributions to the nation -- and to the world -- in science and technology.

Final recommendations for the Medal of Technology awardees will be forwarded to you directly from the Department of Commerce and I include herewith my recommendations for the eight winners of the 1992 Medals of Science selected from the original list of 26 developed by your selection committee for that Medal. I have discussed the reduction with Dr. Carl Bostrom, the Chairman of that Committee.

Attachment

Recommended Recipients for the 1992 National Medals of Science

Eleanor J. Gibson
Susan Linn Sage Professor of Psychology Emeritus
Cornell University
Ithaca, New York

Citation:

For her conceptual insights in developing a theory of perceptual learning; and for achieving a deeper understanding of perceptual development in children and basic processes in reading.

* * * * *

Allen Newell
U.S. and Helen Whitaker University Professor
of Computer Science and University Professor
Carnegie-Mellon University
Pittsburgh, Pennsylvania

Citation:

For his seminal contributions to the development of artificial intelligence, the theory of human cognition and the software and hardware of computational systems for complex information processing.

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Calvin F. Quate
Professor of Applied Physics and Electrical Engineering
Stanford University
Stanford, California

Citation:

For his contributions to microscopy and for the invention of the scanning acoustic microscope and the atomic force microscope.

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Eugene M. Shoemaker
Geologist
U.S. Geological Survey
Flagstaff, Arizona

Citation:

For his pioneering research and inspiring leadership in the geological exploration of the solar systems planets; for his entrepreneurial creation and direction of the Branch of Astrogeology of the U.S. Geological Survey, and for his research on earth- approaching asteroids and comets and their potential impact effects.

* * * * *

Howard E. Simmons, Jr.
Vice President for Central Research & Development
E.I. du Pont de Nemours
Wilmington, Delaware

Citation:

For his fundamental contributions to the knowledge of organic chemistry, and for his productive management of the premier industrial chemical research program in the United States.

* * * * *

Maxine F. Singer
President
Carnegie Institute of Washington
Washington, D.C.

Citation:

For her outstanding scientific accomplishments and her deep concern for the societal responsibility of the scientist.

* * * * *

Howard M. Temin
Professor of Oncology and
American Society, Rausch and Steenbock Professor
McArdle Laboratory for Cancer Research
University of Wisconsin
Madison, Wisconsin

Citation:

For his demonstration of the existence of RNA-directed DNA synthesis, leading to the discovery of specific proto-oncogenesis within Eukaryotic cells and the roles of such genes in oncogenesis by viruses and other agents, laying the foundation for our knowledge of the replication of HIV in human cells.

* * * * *

John R. Whinnery
University Professor Emeritus
University of California
Berkeley, California

Citation:

For his research contributions to microwaves, lasers, and quantum electronics; for his excellence as a teacher and author; and for his extensive services to government and professional organizations.

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