

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

FOIA Number:
2005-0336-F

FOIA MARKER

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

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

OA/ID Number: 62076
Folder ID Number: 62076-004

Folder Title:
Council - President's Council of Advisors on Science and Technology (PCAST) [1 of 2] [1991]

Stack:

Row:

Section:

Shelf:

Position:

0

0

0

0

THE WHITE HOUSE
WASHINGTON

August 16, 1991

Dear Allan:

I would be delighted if you could join us once again for a meeting of the President's Council of Advisors on Science and Technology on Thursday, September 12, 1991. As you know, the PCAST was established by the President to provide him with private sector views on national issues in science and technology. PCAST membership and background information are enclosed.

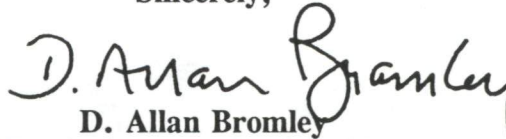
The Council has established Panels of experts to address several topics involving the future competitiveness of the U.S. A list of these Panels and their chairmen is enclosed. I believe it would be quite useful at these early stages for the Council to hear from you on the current work of the Council on Competitiveness and also to discuss with you how the Councils can best compliment each other in areas of mutual interest. Furthermore, I hope you could give us some remarks on how PCAST can be most responsive to the needs and objectives of the Administration in this coming fiscal year.

We ask for 45 minutes of your time at 10:15 AM on Thursday morning, September 12. The meeting will be open to the public. A draft agenda for the meeting is enclosed, but please keep in mind we would be happy to make changes to accommodate your schedule. If you would prefer to meet with the Council in a closed session we would also be happy to make the adjustments.

I sincerely hope you can find the time to join us for the meeting. If so, please have someone contact my Executive Director for PCAST, Tom Welch, at (202) 395-5101 and we will make the arrangements.

I look forward to seeing you.

Sincerely,


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

Enclosures

The Honorable Allan Hubbard
Assistant to the Vice President
for Domestic Policy and Executive
Director of the Council on Competitiveness
Room 286
Old Executive Office Building

THE WHITE HOUSE

WASHINGTON

July 25, 1991

Dear Dick:

As you may already know, jointly with Brent Scowcroft and the National Security Council, I have established a Panel under the President's Council of Advisors on Science and Technology to examine the appropriate role of science and technology in national security in what is clearly a vastly changed world environment. This Panel is co-chaired by Sol Buchsbaum of AT&T, and Johnny Foster, formerly of TRW, who is also Chairman at the present time of the Defense Science Board. Sol and Johnny have assembled a small but very distinguished Panel and are beginning their activities with the view to having a report available by the end of the year. Brent and I have urged them to spread their net widely.

We and the Panel would be delighted and honored if you could find time to meet with us during this critical early period of the Panel activities. Your views with respect to the outstanding problems and their possible solutions would be extremely helpful in establishing the framework within which the panel deliberations would be carried out.

If it is possible for you, we would hope that you might be able to join us during the first formal meeting of the Panel scheduled for August 5 and 6.

We would be happy to adjust our schedule to fit any convenient time on your calendar and should neither of the days be possible for you, we would ask you to suggest an appropriate alternate for this first meeting with the intention of extending our invitation to you to meet with us at a subsequent meeting when that might be possible

I very much hope that you can join us and should there be any questions that might occur to you or your staff concerning the meeting, please contact Dr. Charles Herzfeld who is serving as Senior Director of the Panel at 456-7711

With warmest best wishes,

Sincerely yours,

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

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

Enclosures:

Tentative Agenda
List of Panel Members
Terms of Reference

The Honorable Richard B. Cheney
The Secretary of Defense
Washington, D.C. 20301

THE WHITE HOUSE
WASHINGTON

MEETING OF THE
PANEL ON SCIENCE AND TECHNOLOGY AND NATIONAL SECURITY
OF THE
PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY
ROOM 476, OLD EXECUTIVE OFFICE BUILDING
AUGUST 5-6, 1991

Monday, August 5

9:00 - 9:15	Thomas Welch: PCAST Matters
9:15 - 9:20	Charles Herzfeld: Panel Matters
9:30 - 10:30	D. Allan Bromley: Welcome, Background, Objectives, Discussion
10:30 - 11:00	Break
11:00 - 12:00	Brent Scowcroft: Background, Objectives, Discussion
12:00 - 13:00	LUNCH AND DISCUSSION (ROOM 474)
13:00 - 15:00	Prepared Discussion Points by Members
15:00 - 17:00	Discussion of Approach

Tuesday, August 6

9:00 - 10:00	Richard Cheney, Secretary of Defense
10:00 - 10:30	Panel Discussion
10:30 - 11:00	Break
11:00 - 12:00	Robert Gates
12:00 - 13:00	LUNCH AND DISCUSSION (ROOM 474)
13:00 - 14:30	Prepared Discussion by Panel Members
14:30 - 15:00	Break
15:00 - 16:00	D. A. Bromley - Discussion

PRESIDENT'S COUNCIL OF ADVISORS
ON SCIENCE AND TECHNOLOGY

PANEL ON
SCIENCE, TECHNOLOGY AND NATIONAL SECURITY

Chairman

Solomon J. Buchsbaum Senior Vice President
Technology Systems
AT&T Bell Laboratories
Member of PCAST
(908) 582-5564

Vice Chairman

John S. Foster Vice President
Science and Technology
TRW, Inc.
(213) 812-1846
and
Chairman
Defense Science Board

Panel Members

David Packard Chairman of the Board
Hewlett-Packard Company
1501 Page Mill Road
Palo Alto, CA 94304
Member of PCAST
(415) 857-2627

Ashton Carter Director
Center for Science and International Affairs
Harvard University
John F. Kennedy School of Government
79 JFK Street
Cambridge, MA 02138
(617) 495-1405

Lew Allen 1040 South Arroyo Boulevard
Pasadena, CA 91105
(818) 441-4400
(818) 354-3405 - Secretary

Norman Augustine

Chairman and Chief Executive Officer
Martin Marietta Corporation
6801 Rockledge Drive
Bethesda, MD 20817
(301) 897-6185

George Heilmeier

President and Chief Executive Officer
BELLCORE
1E310
290 W. Mt. Pleasant Avenue
Livingstone, NJ 07039
(201) 740-3131

Edward A. Frieman

Director
Scripps Institution of Oceanography
University of California, San Diego
9500 Gillman Drive, Mail Code 0210
La Jolla, CA 92093
(619) 534-2826

Thomas J. Murrin

Dean
School of Business and Administration
Duquesne University
Rockwell Hall
Pittsburg, PA 15282
(412) 434-5156

Office of Science and Technology Policy Representatives

Michelle Van Cleave

Assistant Director for National Security
(202) 395-7326

Charles Herzfeld

Senior Director of the Panel
(202) 456-7711

THE WHITE HOUSE

WASHINGTON

July 19, 1991

MEMORANDUM FOR SOLOMON J. BUCHSBAUM
CHAIRMAN, PRESIDENT'S COUNCIL OF ADVISERS ON
SCIENCE AND TECHNOLOGY (PCAST)

JOHN S. FOSTER
CHAIRMAN, DEFENSE SCIENCE BOARD

FROM: D. ALLAN BROMLEY 

SUBJECT: REVISED TERMS OF REFERENCE FOR THE PCAST PANEL
ON SCIENCE, TECHNOLOGY AND NATIONAL SECURITY

You are requested to establish a PCAST Panel on Science, Technology and National Security.

The purpose of this Panel is to enable the PCAST to advise the President on selected policy issues related to science and technology and the national security interests and objectives of the United States.

In his "National Security Strategy of the United States", the President has put forth the enduring elements of our national strategy and the broad agenda needed to satisfy the goals of that strategy. The President's report also addressed future opportunities and uncertainties and stated his policy for political, economic and defense initiatives. In his report, the President acknowledged that the economic and military strength of the United States rests on scientific and technological superiority.

The President, in his national security strategy report said: "Broadly and properly understood, our national security is shaped by the totality of the domestic and international environment--an environment that is today dramatically changing." It is because of these dramatic changes that I believe there may be a need for national level guidance on the expenditure of federal funds supporting science and technology, and how best to support national security using the fruits of science and technology. As we prepare this guidance, the advice of PCAST would be most helpful.

The "U.S. Technology Policy" of the White House Office of Science and Technology Policy responds to the President's national security strategy. The paper presents a strategy to implement technology policy and recognizes the role of the private sector, and state and Federal governments in implementing this policy. Among Federal responsibilities, the paper requires the maintenance of ". . . a strong Defense technology base to provide options for future weapons systems development and to help avoid technological surprises by potential adversaries." The paper notes that "Special emphasis needs to be placed on shortening the time required for transferring R&D results to production and on using commercial products."

The Department of Defense has published statements of its technology policy, for example, the Secretary of Defense's Annual Report to the Congress. Over the years, this report has consistently stressed the importance of U.S. technological superiority as a goal. The technology policy and strategy of DoD is also guided by the work of its Defense Science Board and particular note is made of the DSB's report of its 1990 Summer Study: "Research and Development Strategies for the 1990s." Also of note is the current "Defense Technology Strategy and Action Plan" of the Office of the Director, Defense Research and Engineering, Department of Defense. Finally, administration science and technology policy development benefits extensively from private sector efforts.

I would like the Panel on Science, Technology and National Security to define and discuss:

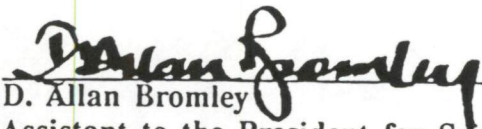
- the role science and technology is expected to play vis-a-vis national security during the decade of the 1990's; and
- how well the government is carrying out that role; identifying gaps or deficiencies in activities being conducted or sponsored by the government; and, identifying alternate mechanisms, if appropriate.

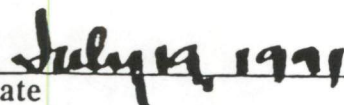
The Panel should base its deliberations primarily on prior work of others. I expect the Panel to consider science and technology programs, present or planned, in all government agencies and departments directly or indirectly responsible for key aspects of national security. Thus, the Panel will look beyond Department of Defense and Department of Energy military programs.

The Panel shall submit a preliminary report to the PCAST within 3 months and a final report 6 months after the Panel's first meeting.

The Office of the Assistant Director for National Security, Office of Science and Technology Policy will sponsor this Panel. Drs. Solomon J. Buchsbaum and John S. Foster will serve as Co-Chairmen. Dr. Charles Herzfeld will serve as Senior Director, and Mr. William Snyder will be the PCAST Secretariat representative.

Approved:


D. Allan Bromley
Assistant to the President for Science and Technology
Chairman, President's Council of Advisors on Science and Technology


Date

THE WHITE HOUSE

WASHINGTON

February 12, 1991

Dear Tom:

You are very much missed here in Washington and I look forward to getting you back here in connection with PCAST activities. This takes longer than you could imagine because, for obvious reasons, I cannot move forward until such time as both Bernadine Healy and Walter Massey have been officially nominated. Walter now has been just nominated and had his confirmation hearings but will not be confirmed for a few weeks. While Bernadine, for reasons that absolutely escape all human understanding, is still being researched by the FBI and, although the President has sent up her intend to nominate, the actual nomination will apparently be a few weeks yet. It has been an unbelievable delay.

I have had several profitable talks with Bob Mosbacher and have met Rock Schnabel at a luncheon with Bob. He seems like a very fine individual but has no technical experience whatsoever.

Unfortunately, I have not changed my opinion concerning Bob White, but clearly we will work closely with him to try to build on the common cause that obviously exists between OSTP and Commerce. Now that Deborah is back at work fulltime, the situation frequently becomes more cloudy and more Byzantine than while she was off being a mother.

I hope that you are really enjoying the academic world and suspect very much that you are. I shall look forward to our paths crossing soon and if your Commerce consulting activities bring you to Washington in the near future, and if you have a luncheon free, please do let me know.

With warmest best wishes,

Sincerely yours,



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

Mr. Thomas J. Murrin, Dean
School of Business and Administration
Duquesne University
408 Rockwell Hall
Pittsburgh, Pennsylvania 15281-0104



DUQUESNE UNIVERSITY

408 ROCKWELL HALL • PITTSBURGH, PA • 15282-0104

SCHOOL OF BUSINESS
AND ADMINISTRATION
TELEPHONE (412) 434-5156
FAX (412) 642-9106

January 4, 1991

Dr. Allan Bromley
6716 Tulip Hill Terrace
Bethesda, Maryland 20816

Dear Allan:

Many thanks for your most welcome and thoughtful letter of December 17!

You have become one of my very few D. C. Heroes --- and you are a real National Resource! So I pray that you stay healthy - and - happy --- and successful - and - satisfied!

Bob Mosbacher is pleased that I can continue as an occasional (formal, un-paid) Consultant to Commerce---and Dick Truly wants me to continue on his NASA Advisory Council. If I could have a relationship with PCAST, this would be GREAT (and Bob Mosbacher agrees)!

In the interim, Happy New Year!

Good Luck!

God Bless!

Most Sincerely,

Thomas J. Murrin
Dean

THE WHITE HOUSE
WASHINGTON

September 24, 1991


Dear Mr. Fisher:

I am pleased to invite you to provide expertise to the Panel on International Economic Competitiveness of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise PCAST on how best to enhance the partnership between the government and the private sector aiming at a major improvement in our competitive position, and to discuss actions that the government and the private sector can take, together or separately, aimed at enhancing our competitive posture. The Panel is chaired by Council member Dr. Ralph Gomory, President of the Sloan Foundation. Dr. Harold Shapiro, President of Princeton University, is Vice Chairman of the Panel.

Should travel be necessary, invitational travel orders will be issued by the Office of Science and Technology Policy. This permits the government to pay your per diem and travel expenses. If at all possible, I would like to see deliberations of the Panel initiated the afternoon of Friday, October 18, 1991, to begin at noon and to be held in Washington.

I hope you will find the time to assist us in this important activity. If so, please let me know at your earliest convenience by calling (202) 456-7116. I shall ask the Panel Chairman, Ralph Gomory, to contact you; he will elaborate on what the Panel hopes to accomplish and how it will function.

I look forward to hearing from you.

Sincerely,



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

Mr. George M.C. Fisher
President and CEO
Motorola, Inc.
1303 Algonquin Road
Schaumburg, IL 60196-1065

THE WHITE HOUSE
WASHINGTON

September 24, 1991

Dear Prof. Ramalingam:

I am pleased to invite you to provide expertise to the Panel on International Economic Competitiveness of the President's Council of Advisors on Science and Technology (PCAST).

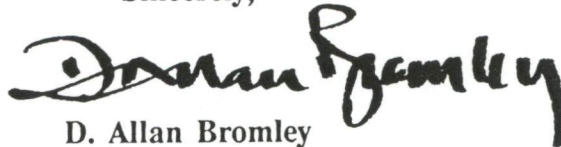
The purpose of the Panel is to advise PCAST on how best to enhance the partnership between the government and the private sector aiming at a major improvement in our competitive position, and to discuss actions that the government and the private sector can take, together or separately, aimed at enhancing our competitive posture. The Panel is chaired by Council member Dr. Ralph Gomory, President of the Sloan Foundation. Dr. Harold Shapiro, President of Princeton University, is Vice Chairman of the Panel.

Should travel be necessary, invitational travel orders will be issued by the Office of Science and Technology Policy. This permits the government to pay your per diem and travel expenses. If at all possible, I would like to see deliberations of the Panel initiated the afternoon of Friday, October 18, 1991, to begin at noon and to be held in Washington.

I hope you will find the time to assist us in this important activity. If so, please let me know at your earliest convenience by calling (202) 456-7116. I shall ask the Panel Chairman, Ralph Gomory, to contact you; he will elaborate on what the Panel hopes to accomplish and how it will function.

I look forward to hearing from you.

Sincerely,

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

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

Prof. S. Ramalingam
University of Minnesota
Dept. of Mechanical Engineering
125 Mechanical Engineering
111 Church St., S.E.
Minneapolis, MN 55455

THE WHITE HOUSE
WASHINGTON

September 24, 1991


Dear Dr. Junkins:

I am pleased to invite you to provide expertise to the Panel on International Economic Competitiveness of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise PCAST on how best to enhance the partnership between the government and the private sector aiming at a major improvement in our competitive position, and to discuss actions that the government and the private sector can take, together or separately, aimed at enhancing our competitive posture. The Panel is chaired by Council member Dr. Ralph Gomory, President of the Sloan Foundation. Dr. Harold Shapiro, President of Princeton University, is Vice Chairman of the Panel.

Should travel be necessary, invitational travel orders will be issued by the Office of Science and Technology Policy. This permits the government to pay your per diem and travel expenses. If at all possible, I would like to see deliberations of the Panel initiated the afternoon of Friday, October 18, 1991, to begin at noon and to be held in Washington.

I hope you will find the time to assist us in this important activity. If so, please let me know at your earliest convenience by calling (202) 456-7116. I shall ask the Panel Chairman, Ralph Gomory, to contact you; he will elaborate on what the Panel hopes to accomplish and how it will function.

I look forward to hearing from you.

Sincerely,



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

Dr. Jerry R. Junkins
Chairman, President and CEO
Texas Instruments
13510 N. Central Expressway
North Building
Dallas, TX 75243

THE WHITE HOUSE
WASHINGTON

September 24, 1991

Dear Prof. Bowen:

I am pleased to invite you to provide expertise to the Panel on International Economic Competitiveness of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise PCAST on how best to enhance the partnership between the government and the private sector aiming at a major improvement in our competitive position, and to discuss actions that the government and the private sector can take, together or separately, aimed at enhancing our competitive posture. The Panel is chaired by Council member Dr. Ralph Gomory, President of The Sloan Foundation. Dr. Harold Shapiro, President of Princeton University, is Vice Chairman of the Panel.

Should travel be necessary, invitational travel orders will be issued by the Office of Science and Technology Policy. This permits the government to pay your per diem and travel expenses. If at all possible, I would like to see deliberations of the Panel initiated the afternoon of Friday, October 18, 1991, to begin at noon and to be held in Washington.

I hope you will find the time to assist us in this important activity. If so, please let me know at your earliest convenience by calling (202) 456-7116. I shall ask the Panel Chairman, Ralph Gomory, to contact you; he will elaborate on what the Panel hopes to accomplish and how it will function.

I look forward to hearing from you.

Sincerely,



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

Prof. Kent H. Bowen
Massachusetts Institute of Technology
Department of Mathematics
Room 9-325
Cambridge, MA 02139

THE WHITE HOUSE
WASHINGTON

September 24, 1991

Dear Dr. Williams:

I am pleased to invite you to provide expertise to the Panel on International Economic Competitiveness of the President's Council of Advisors on Science and Technology (PCAST).

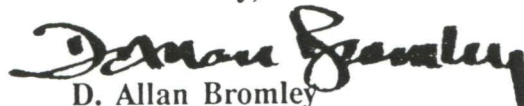
The purpose of the Panel is to advise PCAST on how best to enhance the partnership between the government and the private sector aiming at a major improvement in our competitive position, and to discuss actions that the government and the private sector can take, together or separately, aimed at enhancing our competitive posture. The Panel is chaired by Council member Dr. Ralph Gomory, President of the Sloan Foundation. Dr. Harold Shapiro, President of Princeton University, is Vice Chairman of the Panel.

Should travel be necessary, invitational travel orders will be issued by the Office of Science and Technology Policy. This permits the government to pay your per diem and travel expenses. If at all possible, I would like to see deliberations of the Panel initiated the afternoon of Friday, October 18, 1991, to begin at noon and to be held in Washington.

I hope you will find the time to assist us in this important activity. If so, please let me know at your earliest convenience by calling (202) 456-7116. I shall ask the Panel Chairman, Ralph Gomory, to contact you; he will elaborate on what the Panel hopes to accomplish and how it will function.

I look forward to hearing from you.

Sincerely,



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

Dr. James C. Williams
General Manager
Engineering Materials
Technology Laboratories
GE Aircraft Engines
One Neumann Way MD H85
Cincinnati, OH 45215-6301

THE WHITE HOUSE

WASHINGTON

August 16, 1991

Dear Secretary Brady:

I would be delighted if you could join us at the meeting of the President's Council of Advisors on Science and Technology on Friday, September 13, 1991. You may recall that the PCAST was established by the President to provide him with private sector views on national issues in science and technology. PCAST membership and background information are enclosed.

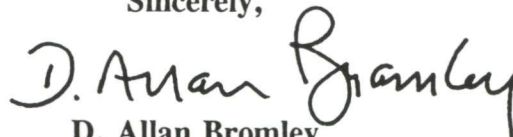
As I mentioned in my letter of June 19, the Council is particularly interested in hearing your views on the role of science and technology in U.S. economic competitiveness. In fact, one of the major themes of our September meeting will be how best to utilize science and technology to help ensure future U.S. international economic competitiveness. Along these lines, it would be helpful if you could offer a few remarks on your expectations and objectives for the Science and Technology Working Group of the Economic Policy Council.

We ask for 45 minutes of your time between 9:00 PM and 12:00 NOON on Thursday morning, September 13. A draft agenda for the meeting is enclosed, but please keep in mind we would be happy to make changes to accommodate your schedule.

I sincerely hope you can find the time to join us for the meeting. If so, please have someone contact my Executive Director for PCAST, Tom Welch, at (202) 395-5101 and we will make the arrangements.

I look forward to seeing you.

Sincerely,



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

Enclosures

The Honorable Nicholas F. Brady
Secretary
Department of the Treasury
1500 Pennsylvania Avenue, NW, Room 3330
Washington, DC 20220

THE WHITE HOUSE
WASHINGTON

July 19, 1991

MEMORANDUM FOR BOB GATES

FROM: D. ALLAN BROMLEY *Alan*
SUBJECT: MEETING OF THE PCAST PANEL ON SCIENCE,
TECHNOLOGY AND NATIONAL SECURITY

I would very much like to invite you to meet with the newly-formed PCAST Panel on Science, Technology and National Security on August 6 at 11:00 a.m. We would like to hear your views on future national security problems and the contributions technology should make to their solution. If there are problems with your schedule, we would be happy to invite you to a later meeting. Your contribution would be most helpful. If you cannot make the August meeting, I would appreciate your suggesting an alternate representative from your office.

Please contact Charles Herzfeld, Senior Director for the Panel, at X-7711 for any further details about the meeting.

Attachments:

Tentative Agenda
List of Panel Members
Terms of Reference

THE WHITE HOUSE
WASHINGTON

July 19, 1991

MEMORANDUM FOR BRENT SCOWCROFT

FROM: D. ALLAN BROMLEY *Man*
SUBJECT: MEETING OF THE PCAST PANEL ON SCIENCE,
TECHNOLOGY AND NATIONAL SECURITY

We hope that you will be able to participate in the first meeting of the PCAST Panel on Science, Technology and National Security on August 5 at 11:00 a.m. We would like you to describe your views of the background, possible objectives of the PCAST study, and your major concerns. A 20-minute presentation with about a 40-minute discussion would be ideal. We also invite you to join us for lunch in the Indian Treaty Room at 12:00 noon. If this date and time are impossible for you, perhaps you could participate on Tuesday, August 6. In case neither dates are possible, I would appreciate very much if you would propose an alternate to present your views at the August meeting, and I would hope that you will be able to meet with the Panel at a later date.

Please contact Charles Herzfeld, Senior Director for the Panel, at X-7711 for any further details on the meeting.

Attachments:

Tentative Agenda
List of Panel Members
Terms of Reference

THE WHITE HOUSE
WASHINGTON

MEETING OF THE
PANEL ON SCIENCE AND TECHNOLOGY AND NATIONAL SECURITY
OF THE
PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY
ROOM 476, OLD EXECUTIVE OFFICE BUILDING
AUGUST 5-6, 1991

Monday, August 5

9:00 - 9:15	Thomas Welch: PCAST Matters
9:15 - 9:20	Charles Herzfeld: Panel Matters
9:30 - 10:30	D. Allan Bromley: Welcome, Background, Objectives, Discussion
10:30 - 11:00	Break
11:00 - 12:00	Brent Scowcroft: Background, Objectives, Discussion
12:00 - 13:00	LUNCH AND DISCUSSION (ROOM 474)
13:00 - 15:00	Prepared Discussion Points by Members
15:00 - 17:00	Discussion of Approach

Tuesday, August 6

9:00 - 10:00	Richard Cheney, Secretary of Defense
10:00 - 10:30	Panel Discussion
10:30 - 11:00	Break
11:00 - 12:00	Robert Gates
12:00 - 13:00	LUNCH AND DISCUSSION (ROOM 474)
13:00 - 14:30	Prepared Discussion by Panel Members
14:30 - 15:00	Break
15:00 - 16:00	D. A. Bromley - Discussion

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

**PANEL ON
SCIENCE, TECHNOLOGY AND NATIONAL SECURITY**

Chairman

Solomon J. Buchsbaum

**Senior Vice President
Technology Systems
AT&T Bell Laboratories
Member of PCAST
(908) 582-5564**

Vice Chairman

John S. Foster

**Vice President
Science and Technology
TRW, Inc.
(213) 812-1846
and
Chairman
Defense Science Board**

Panel Members

David Packard

**Chairman of the Board
Hewlett-Packard Company
1501 Page Mill Road
Palo Alto, CA 94304
Member of PCAST
(415) 857-2627**

Ashton Carter

**Director
Center for Science and International Affairs
Harvard University
John F. Kennedy School of Government
79 JFK Street
Cambridge, MA 02138
(617) 495-1405**

Lew Allen

**1040 South Arroyo Boulevard
Pasadena, CA 91105
(818) 441-4400
(818) 354-3405 - Secretary**

Norman Augustine

Chairman and Chief Executive Officer
Martin Marietta Corporation
6801 Rockledge Drive
Bethesda, MD 20817
(301) 897-6185

George Heilmeier

President and Chief Executive Officer
BELLCORE
1E310
290 W. Mt. Pleasant Avenue
Livingstone, NJ 07039
(201) 740-3131

Edward A. Frieman

Director
Scripps Institution of Oceanography
University of California, San Diego
9500 Gillman Drive, Mail Code 0210
La Jolla, CA 92093
(619) 534-2826

Thomas J. Murrin

Dean
School of Business and Administration
Duquesne University
Rockwell Hall
Pittsburg, PA 15282
(412) 434-5156

Office of Science and Technology Policy Representatives

Michelle Van Cleave

Assistant Director for National Security
(202) 395-7326

Charles Herzfeld

Senior Director of the Panel
(202) 456-7711

THE WHITE HOUSE

WASHINGTON

July 19, 1991

MEMORANDUM FOR SOLOMON J. BUCHSBAUM
CHAIRMAN, PRESIDENT'S COUNCIL OF ADVISERS ON
SCIENCE AND TECHNOLOGY (PCAST)

JOHN S. FOSTER
CHAIRMAN, DEFENSE SCIENCE BOARD

FROM: D. ALLAN BROMLEY 
SUBJECT: REVISED TERMS OF REFERENCE FOR THE PCAST PANEL
ON SCIENCE, TECHNOLOGY AND NATIONAL SECURITY

You are requested to establish a PCAST Panel on Science, Technology and National Security.

The purpose of this Panel is to enable the PCAST to advise the President on selected policy issues related to science and technology and the national security interests and objectives of the United States.

In his "National Security Strategy of the United States", the President has put forth the enduring elements of our national strategy and the broad agenda needed to satisfy the goals of that strategy. The President's report also addressed future opportunities and uncertainties and stated his policy for political, economic and defense initiatives. In his report, the President acknowledged that the economic and military strength of the United States rests on scientific and technological superiority.

The President, in his national security strategy report said: "Broadly and properly understood, our national security is shaped by the totality of the domestic and international environment--an environment that is today dramatically changing." It is because of these dramatic changes that I believe there may be a need for national level guidance on the expenditure of federal funds supporting science and technology, and how best to support national security using the fruits of science and technology. As we prepare this guidance, the advice of PCAST would be most helpful.

The "U.S. Technology Policy" of the White House Office of Science and Technology Policy responds to the President's national security strategy. The paper presents a strategy to implement technology policy and recognizes the role of the private sector, and state and Federal governments in implementing this policy. Among Federal responsibilities, the paper requires the maintenance of "... a strong Defense technology base to provide options for future weapons systems development and to help avoid technological surprises by potential adversaries." The paper notes that "Special emphasis needs to be placed on shortening the time required for transferring R&D results to production and on using commercial products."

The Department of Defense has published statements of its technology policy, for example, the Secretary of Defense's Annual Report to the Congress. Over the years, this report has consistently stressed the importance of U.S. technological superiority as a goal. The technology policy and strategy of DoD is also guided by the work of its Defense Science Board and particular note is made of the DSB's report of its 1990 Summer Study: "Research and Development Strategies for the 1990s." Also of note is the current "Defense Technology Strategy and Action Plan" of the Office of the Director, Defense Research and Engineering, Department of Defense. Finally, administration science and technology policy development benefits extensively from private sector efforts.

I would like the Panel on Science, Technology and National Security to define and discuss:

- the role science and technology is expected to play vis-a-vis national security during the decade of the 1990's; and
- how well the government is carrying out that role; identifying gaps or deficiencies in activities being conducted or sponsored by the government; and, identifying alternate mechanisms, if appropriate.

The Panel should base its deliberations primarily on prior work of others. I expect the Panel to consider science and technology programs, present or planned, in all government agencies and departments directly or indirectly responsible for key aspects of national security. Thus, the Panel will look beyond Department of Defense and Department of Energy military programs.

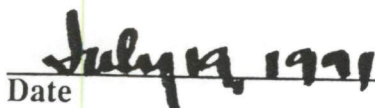
The Panel shall submit a preliminary report to the PCAST within 3 months and a final report 6 months after the Panel's first meeting.

The Office of the Assistant Director for National Security, Office of Science and Technology Policy will sponsor this Panel. Drs. Solomon J. Buchsbaum and John S. Foster will serve as Co-Chairmen. Dr. Charles Herzfeld will serve as Senior Director, and Mr. William Snyder will be the PCAST Secretariat representative.

Approved:


D. Allan Bromley

Assistant to the President for Science and Technology
Chairman, President's Council of Advisors on Science and Technology


Date

THE WHITE HOUSE
WASHINGTON

September 10, 1991


Dear Admiral Watkins:

I would be delighted if you could join us at the meeting of the Panel on Science and Technology and National Security of the President's Council of Advisors on Science and Technology on Thursday, September 26, 1991. The Council, also known as "PCAST" was established by the President to provide him with private sector views on national issues in science and technology. PCAST membership and background information are enclosed, as well as the Panel membership and Terms of Reference.

Since U.S. national security interests depend to a large extent on the work of your department, the Panel believes it is particularly important to hear your views on the President's 1991 "National Security Strategy" and the importance of science and technology and nuclear weapons in that strategy.

As you know, Council member Sol Buchsbaum and Johnny Foster, Chairman of the Defense Science Board, along with David Packard and other Panel members are attempting to define and discuss the role technology is expected to play vis-a-vis national security during the decade of the 1990's.

We ask for 45 minutes of your time between 9:00 AM and 12:00 Noon on Thursday morning, September 26. A draft agenda for the meeting is enclosed, but please keep in mind we would be happy to make changes to accommodate your schedule.

I sincerely hope you can find the time to join us for the meeting. If so, please have someone contact my Senior Director for the PCAST Panel on Science and Technology and National Security, Dr. Charles M. Herzfeld, at (202) 395-1330 and we will make the arrangements.

I look forward to seeing you.

Sincerely,


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

Enclosures

The Honorable James D. Watkins
The Secretary of Energy
Washington, DC 20585

THE WHITE HOUSE
WASHINGTON

September 10, 1991


Dear Secretary Cheney:

I would be delighted if you could join us at the meeting of the Panel for Science and Technology and National Security of the President's Council of Advisors on Science and Technology on Friday, September 27, 1991. The Council, also known as "PCAST" was established by the President to provide him with private sector views on national issues in science and technology. PCAST membership and background information are enclosed, as well as the Panel membership and Terms of Reference.

Since U.S. national security interests are a major factor in all areas of PCAST work, the Panel believes it is particularly important to hear your views on the President's 1991 "National Security Strategy" and the importance of science and technology in that strategy.

As you know, Council member Sol Buchsbaum and Johnny Foster, Chairman of the Defense Science Board, along with David Packard and other Panel members are attempting to define and discuss the role technology is expected to play vis-a-vis national security during the decade of the 1990's.

We ask for 45 minutes of your time between 9:00 AM and 12:00 Noon on Friday, September 27. A draft agenda for the meeting is enclosed, but please keep in mind we would be happy to make changes to accommodate your schedule.

I sincerely hope you can find the time to join us for the meeting. If so, please have someone contact my Senior Director for the PCAST Panel on Science and Technology and National Security, Dr. Charles M. Herzfeld, at (202) 395-1330 and we will make arrangements.

I look forward to seeing you.

Sincerely,



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

Enclosures

The Honorable Richard Cheney
The Secretary of Defense
Washington, DC 20301

THE WHITE HOUSE
WASHINGTON

September 10, 1991


Dear General Powell:

I would be delighted if you could join us at the meeting of the Panel for Science and Technology and National Security of the President's Council of Advisors on Science and Technology on Friday, September 27, 1991. The Council, also known as "PCAST" was established by the President to provide him with private sector views on national issues in science and technology. PCAST membership and background information are enclosed, as well as the Panel membership and Terms of Reference.

Since U.S. national security interests are a major factor in all areas of PCAST work, the Panel believes it is particularly important to hear your views on the President's 1991 "National Security Strategy" and the importance of science and technology in that strategy.

As you know, Council member Sol Buchsbaum and Johnny Foster, Chairman of the Defense Science Board, along with David Packard and other Panel members are attempting to define and discuss the role technology is expected to play vis-a-vis national security during the decade of the 1990's.

We ask for 45 minutes of your time between 9:00 AM and 12:00 Noon on Friday, September 27. A draft agenda for the meeting is enclosed, but please keep in mind we would be happy to make changes to accommodate your schedule.

I sincerely hope you can find the time to join us for the meeting. If so, please have someone contact my Senior Director for the PCAST Panel on Science and Technology and National Security, Dr. Charles M. Herzfeld, at (202) 395-1330 and we will make arrangements.

I look forward to seeing you.

Sincerely,



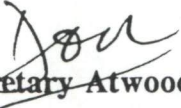
D. Allan Bromley
The Assistant to the President
for
Science and Technology

Enclosures

General Colin L. Powell
Chairman
The Joint Chiefs of Staff
Department of Defense
Washington, DC 20301-5000

THE WHITE HOUSE
WASHINGTON

September 10, 1991


Dear ~~Secretary~~ Atwood:

I would be delighted if you could join us at the meeting of the Panel for Science and Technology and National Security of the President's Council of Advisors on Science and Technology on Thursday, September 26, 1991. The Council, also known as "PCAST" was established by the President to provide him with private sector views on national issues in science and technology. PCAST membership and background information are enclosed, as well as the Panel membership and Terms of Reference.

Since U.S. national security interests are a major factor in all areas of PCAST work, the Panel believes it is particularly important to hear your views on the President's 1991 "National Security Strategy" and the importance of science and technology in that strategy.

As you know, Council member Sol Buchsbaum and Johnny Foster, Chairman of the Defense Science Board, along with David Packard and other Panel members are attempting to define and discuss the role technology is expected to play vis-a-vis national security during the decade of the 1990's.

We ask for 45 minutes of your time between 1:00 PM and 5:00 PM on Thursday afternoon, September 26. A draft agenda for the meeting is enclosed, but please keep in mind we would be happy to make changes to accommodate your schedule.

I sincerely hope you can find the time to join us for the meeting. If so, please have someone contact my Senior Director for the PCAST Panel on Science and Technology and National Security, Dr. Charles M. Herzfeld, at (202) 395-1330 and we will make arrangements.

I look forward to seeing you.

Sincerely,



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

Enclosures

The Honorable Donald Atwood
The Deputy Secretary
Department of Defense
Washington, DC 20301-1000

THE WHITE HOUSE

WASHINGTON

September 10, 1991

Brent
Dear General Scowcroft:

I would be delighted if you could join us at the meeting of the Panel for Science and Technology and National Security of the President's Council of Advisors on Science and Technology on Thursday, September 26, 1991. The Council, also known as "PCAST" was established by the President to provide him with private sector views on national issues in science and technology. PCAST membership and background information are enclosed, as well as the Panel membership and Terms of Reference.

Since U.S. national security interests are a major factor in all areas of PCAST work, the Panel believes it is particularly important to hear your views on the President's 1991 "National Security Strategy" and the importance of science and technology in that strategy.

As you know, Council member Sol Buchsbaum and Johnny Foster, Chairman of the Defense Science Board, along with David Packard and other Panel members are attempting to define and discuss the role technology is expected to play vis-a-vis national security during the decade of the 1990's.

We ask for 45 minutes of your time between 1:00 PM and 5:00 PM on Thursday afternoon, September 26. A draft agenda for the meeting is enclosed, but please keep in mind we would be happy to make changes to accommodate your schedule.

I sincerely hope you can find the time to join us for the meeting. If so, please have someone contact my Senior Director for the PCAST Panel on Science and Technology and National Security, Dr. Charles M. Herzfeld, at (202) 395-1330 and we will make arrangements.

I look forward to seeing you.

Sincerely,



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

Enclosures

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

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

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

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

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

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

RALPH GOMORY, President, The Sloan Foundation.

PETER LIKINS, President, Lehigh University.

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

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

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

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

HAROLD SHAPIRO, President, Princeton University.

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

**PANEL ON
SCIENCE AND TECHNOLOGY AND NATIONAL SECURITY**

Chairman

Solomon J. Buchsbaum	Senior Vice President Technology Systems AT&T Bell Laboratories
-----------------------------	--

Vice Chairman

John S. Foster	Vice President Science and Technology TRW, Inc. and Chairman, Defense Science Board
-----------------------	--

Panel Members

David Packard	Chairman of the Board Hewlett-Packard Company
Ashton Carter	Director Center for Science and International Affairs, Harvard University
Lew Allen	Pasadena, CA
Norman Augustine	Chairman and Chief Executive Officer Martin Marietta Corporation
George Heilmeier	President and Chief Executive Officer BELLCORE
Edward A. Frieman	Director Scripps Institution of Oceanography
Thomas J. Murrin	Dean School of Business and Administration Duquesne University

Office of Science and Technology Policy Representatives

Michelle Van Cleave	Assistant Director for National Security (202) 395-7326
Charles Herzfeld	Senior Director of Panel (202) 395-1330

THE WHITE HOUSE

WASHINGTON

July 19, 1991

MEMORANDUM FOR SOLOMON J. BUCHSBAUM
CHAIRMAN, PRESIDENT'S COUNCIL OF ADVISERS ON
SCIENCE AND TECHNOLOGY (PCAST)

JOHN S. FOSTER
CHAIRMAN, DEFENSE SCIENCE BOARD

FROM: D. ALLAN BROMLEY 
SUBJECT: REVISED TERMS OF REFERENCE FOR THE PCAST PANEL
ON SCIENCE, TECHNOLOGY AND NATIONAL SECURITY

You are requested to establish a PCAST Panel on Science, Technology and National Security.

The purpose of this Panel is to enable the PCAST to advise the President on selected policy issues related to science and technology and the national security interests and objectives of the United States.

In his "National Security Strategy of the United States", the President has put forth the enduring elements of our national strategy and the broad agenda needed to satisfy the goals of that strategy. The President's report also addressed future opportunities and uncertainties and stated his policy for political, economic and defense initiatives. In his report, the President acknowledged that the economic and military strength of the United States rests on scientific and technological superiority.

The President, in his national security strategy report said: "Broadly and properly understood, our national security is shaped by the totality of the domestic and international environment--an environment that is today dramatically changing." It is because of these dramatic changes that I believe there may be a need for national level guidance on the expenditure of federal funds supporting science and technology, and how best to support national security using the fruits of science and technology. As we prepare this guidance, the advice of PCAST would be most helpful.

The "U.S. Technology Policy" of the White House Office of Science and Technology Policy responds to the President's national security strategy. The paper presents a strategy to implement technology policy and recognizes the role of the private sector, and state and Federal governments in implementing this policy. Among Federal responsibilities, the paper requires the maintenance of ". . . a strong Defense technology base to provide options for future weapons systems development and to help avoid technological surprises by potential adversaries." The paper notes that "Special emphasis needs to be placed on shortening the time required for transferring R&D results to production and on using commercial products."

The Department of Defense has published statements of its technology policy, for example, the Secretary of Defense's Annual Report to the Congress. Over the years, this report has consistently stressed the importance of U.S. technological superiority as a goal. The technology policy and strategy of DoD is also guided by the work of its Defense Science Board and particular note is made of the DSB's report of its 1990 Summer Study: "Research and Development Strategies for the 1990s." Also of note is the current "Defense Technology Strategy and Action Plan" of the Office of the Director, Defense Research and Engineering, Department of Defense. Finally, administration science and technology policy development benefits extensively from private sector efforts.

I would like the Panel on Science, Technology and National Security to define and discuss:

- the role science and technology is expected to play vis-a-vis national security during the decade of the 1990's; and
- how well the government is carrying out that role; identifying gaps or deficiencies in activities being conducted or sponsored by the government; and, identifying alternate mechanisms, if appropriate.

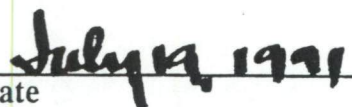
The Panel should base its deliberations primarily on prior work of others. I expect the Panel to consider science and technology programs, present or planned, in all government agencies and departments directly or indirectly responsible for key aspects of national security. Thus, the Panel will look beyond Department of Defense and Department of Energy military programs.

The Panel shall submit a preliminary report to the PCAST within 3 months and a final report 6 months after the Panel's first meeting.

The Office of the Assistant Director for National Security, Office of Science and Technology Policy will sponsor this Panel. Drs. Solomon J. Buchsbaum and John S. Foster will serve as Co-Chairmen. Dr. Charles Herzfeld will serve as Senior Director, and Mr. William Snyder will be the PCAST Secretariat representative.

Approved:


D. Allan Bromley
Assistant to the President for Science and Technology
Chairman, President's Council of Advisors on Science and Technology


Date

THE WHITE HOUSE

WASHINGTON

December 16, 1991

MEMORANDUM FOR TONY SNOW

FROM: D. ALLAN BROMLEY

SUBJECT: State of the Union

The President's Council of Advisors on Science and Technology (PCAST) has asked that I forward the attached papers for consideration in preparation of the President's State of the Union address.

Attachments

*Tony, I would be happy to discuss these
with you at your convenience.
Alan*

TECHNOLOGY AND THE AMERICAN STANDARD OF LIVING

The everyday world that we experience today has been created largely by the technologies and manufacturing skills of the last 150 years. Change accelerated with the steam engine powering the factories of the industrial revolution; iron, steel, and coal soon became plentiful, and railroads and the telegraph were invented and penetrated the rural isolation in which most of the world's population had always lived.

With this remarkable surge of invention of new products and with the equally remarkable ability to manufacture those products in volume, the modern world appeared. Much of that modern world was invented and made in America.

This great surge forward in the standard of living can be continued. But it will not happen automatically, and to some extent it is not happening in the United States.

All the ingredients for great steps forward are a at hand. To the creativity of the individual inventor we can add today the great power of invention represented by organized science. The great strides made by science--a field in which the United States leads the world--have given us an unprecedented understanding of the fundamentals of nature. This understanding will allow us to develop new materials that are lighter, stronger, and more durable than those of today. Fundamental knowledge of the workings of living organisms is leading us toward the prevention of diseases once thought inevitable and the cure of diseases once thought incurable. The computer and new modes of communication, such as optical fibers, are creating whole new worlds of possibility.

America was a leader in the first industrial revolution, and our standard of living became a goal toward which the rest of the world aspired. We must now make it our goal to lead the world through the continuous technical revolution of our times. In doing so, we will steadily raise our standard of living and see to it that our children and grandchildren will live far better than we do today.

We need to do three things to achieve this goal:

1. We must ensure the continued flow of new ideas and new understanding that are essential for such steps forward, as, new materials, new means of communication, new standards of health care, and the protection of the environment.
2. We must be expert at translating new ideas and technologies into significant new products. This translation often requires that we face great and unpredictable uncertainties and it sometimes requires many years of trial and error, but it can result in the creation of whole new industries.
3. We must revive the great American tradition of manufacturing and developing so that we not only start but also build and retain great industries.

Industry must do much of this, but this government can and will make a difference.

The evolution of new ideas into new products and processes can be difficult and slow, yet it is enormously important. Some technologies take a long time to develop, and the developer takes great risks and may not capture all of the benefits because of the time lags involved. For these important technologies, the government can help to support the development of generic advanced technologies in close cooperation with those who use them. Its support of such technologies in the past--such as agricultural, aeronautic, and computer technologies--was instrumental in building key sectors of the U.S. economy.

The hundreds of federal laboratories can make major contributions to the development of generic technologies. The federal government can assign new missions to some of these laboratories in such a way that they become sources of civilian technologies.

The federal government can and will have a positive effect on manufacturing and development. We will stress manufacturing in our support of engineering education, we plan to award fellowships in research on manufacturing technologies, and we will recognize great achievement in manufacturing as the government does today in science and technology. We will demand world-class quality in government procurement and we will encourage it in industry.

To support the first of the three objectives, we must provide an adequate and balanced support of university-based individual investigator basic research. We will undertake to revitalize the university research infrastructure and ensure its vitality in the

future. This is a necessary step if this country is to continue to lead the world in the generation of new ideas.

Our goals in education are complementary to the goal of industrial leadership. Furthermore, there are certain aspects of education that are especially supportive of productivity. Practical education, education for work, and the practical aspects of the engineering curriculum must be elevated both in content and in prestige. Today the development of such skills is far more advanced in other countries than it is in the United States. We plan federal initiatives to support the development of practical curricula and put the prestige of the federal government behind the dignity of this work.

As president I firmly pledge to do these things, and whatever else is needed, to improve our country's productivity and by so doing make a better life for our children and our grandchildren.

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01. Report	Science, Technology, and National Security [first page only] (1 pp.)		(b)(1)	

Collection:

Record Group: Bush Presidential Records

Office: Science and Technology Policy, Office of (OSTP)

Series: Bromley, D. Allan, Files

Subseries: Organization Files - PCAST

WHORM Cat.:

File Location: Council - President's Council of Advisors on Science and Technology (PCAST) [1 of 2] [1991]

Date Closed: 5/13/2010 **OA/ID Number:** 62076-004

FOIA/SYS Case #: 2005-0336-F

Re-review Case #:

P-2/P-5 Review Case #:

AR Case #:

AR Disposition:

AR Disposition Date:

Appeal Case #:

Appeal Disposition:

Disposition Date:

MR Case #:

MR Disposition:

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

THE WHITE HOUSE

Aug 14, 91
Dear Tom: (Murray)
We are looking forward to
seeing you at the Sept PRAS
meeting and Sam Welch will
be sending you briefing material.
Sam off for a much needed
week vacation. Best regards
Alan



OFFICE OF THOMAS J. MURRIN
DEAN OF THE SCHOOL OF BUSINESS AND ADMINISTRATION

DUQUESNE UNIVERSITY

PITTSBURGH • PENNSYLVANIA • 15282

(412) 434-5156

FAX (412) 642-9106

91 AUG 2 P2:45

OFFICE OF THE
DIRECTOR

July 26, 1991

D. Allan Bromley
Assistant to the President
for Science and Technology
The White House
Washington, DC 20006

Dear Allan:

Many thanks for your letter of July 19 --- and the information on the new Panel on Science, Technology and National Security!

I'm honored to be associated with such a distinguished group --- and such an important issue!

Unfortunately, earlier commitments preclude my attendance at the August 5 - 6 session --- but, hopefully, I'll be available for the September meeting.

I'm advised (by Tom Welch et al.) that my forthcoming PCAST "clearance" will allow me to participate on this Panel --- without any additional Panel-peculiar forms being processed!?

Again, Many Thanks!

Good Luck!

God Bless!

Most sincerely,

Thomas J. Murrin
Dean

TJM:ss

cc: Dr. Charles Herzfeld
Dr. Thomas Welch

"CORRESPONDENCE TRACKING"

TYPE: ACTION DOCUMENT NUMBER: 9123212
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: MURRIN, Thomas J.: DUQUESNE UNIVERSITY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/26/91

SUBJECT: HE IS UNABLE TO ATTEND THE 08/05-06/91 PCAST MEETING
AND HAS QUESTIONS REGARDING HIS CLEARANCE PAPERWORK.

DIRECTORATE STAFF
ASSIGNED: PCAST ASSIGNED:

ACTION STAFF
REQUIRED: FOR DAB'S SIGNATURE ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 08/15/91 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
Charles Herzfeld
ADMINISTRATION
Ken Yale

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:
REMARKS:

OSTP RECEIVED: 08/02/91 FILE: P-PCAST
DEPT RECEIVED:

THE WHITE HOUSE

WASHINGTON

February 12, 1991

Dear Tom:

You are very much missed here in Washington and I look forward to getting you back here in connection with PCAST activities. This takes longer than you could imagine because, for obvious reasons, I cannot move forward until such time as both Bernadine Healy and Walter Massey have been officially nominated. Walter now has been just nominated and had his confirmation hearings but will not be confirmed for a few weeks. While Bernadine, for reasons that absolutely escape all human understanding, is still being researched by the FBI and, although the President has sent up her intend to nominate, the actual nomination will apparently be a few weeks yet. It has been an unbelievable delay.

I have had several profitable talks with Bob Mosbacher and have met Rock Schnabel at a luncheon with Bob. He seems like a very fine individual but has no technical experience whatsoever.

Unfortunately, I have not changed my opinion concerning Bob White, but clearly we will work closely with him to try to build on the common cause that obviously exists between OSTP and Commerce. Now that Deborah is back at work fulltime, the situation frequently becomes more cloudy and more Byzantine than while she was off being a mother.

I hope that you are really enjoying the academic world and suspect very much that you are. I shall look forward to our paths crossing soon and if your Commerce consulting activities bring you to Washington in the near future, and if you have a luncheon free, please do let me know.

With warmest best wishes,

Sincerely yours,



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

Mr. Thomas J. Murrin, Dean
School of Business and Administration
Duquesne University
408 Rockwell Hall
Pittsburgh, Pennsylvania 15281-0104



DUQUESNE UNIVERSITY

408 ROCKWELL HALL • PITTSBURGH, PA • 15282-0104

SCHOOL OF BUSINESS
AND ADMINISTRATION
TELEPHONE (412) 434-5156
FAX (412) 642-9106

January 4, 1991

Dr. Allan Bromley
6716 Tulip Hill Terrace
Bethesda, Maryland 20816

Dear Allan:

Many thanks for your most welcome and thoughtful letter of December 17!

You have become one of my very few D. C. Heroes --- and you are a real National Resource! So I pray that you stay healthy- and - happy --- and successful - and - satisfied!

Bob Mosbacher is pleased that I can continue as an occassional (formal, un-paid) Consultant to Commerce---and Dick Truly wants me to continue on his NASA Advisory Council. If I could have a relationship with PCAST, this would be GREAT (and Bob Mosbacher agrees)!

In the interim, Happy New Year!

Good Luck!

God Bless!

Most Sincerely,

Thomas J. Murrin
Dean

THE WHITE HOUSE
WASHINGTON

July 9, 1991

Dear Tom:

The mills of gods grind exceedingly slow but I have been talking to Sharon Fitzpatrick and she assures me that your nomination and that of Mary Good as members of PCAST is proceeding according to plan and in good order, whatever the hell that means!

We need you badly because there are a number of issues that we are now considering where the two of you would be able to make substantial contributions. As soon as the intent to nominate goes forward then I shall immediately invite you to participate fully in all meetings thereafter and we can take care of the formalities as they come up but the important thing will getting you aboard as soon as possible.

I must say that I do miss you deeply in the Department of Commerce and in this Government altogether. As you have noted, I have been having some small difficulty with the whole question of technology, but I think that that has been largely resolved and what we now are trying to do is to structure the Critical Technologies Institute in such fashion that it will be beneficial to the whole Executive Office of the President.

I appreciated you sending me a copy of your remarks to the American Institute of Aeronautics and Astronautics. You said a great many things that need saying and said them well.

PCAST is meeting with the President this Wednesday and it is my hope that by the next meeting we will be able to have you and Mary in attendance as well. Just don't lose heart, all of here are very much looking forward to having you with us.

With warmest best wishes,

Sincerely yours,



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

Mr. Thomas J. Murrin
Dean
School of Business and Administration
Duquesne University
Pittsburgh, Pennsylvania 15282



DUQUESNE UNIVERSITY

PITTSBURGH • PENNSYLVANIA • 15282

(412) 434-5156

FAX (412) 642-9106

01 JUN 14 05:00

OFFICE OF THOMAS J. MURRIN
DEAN OF THE SCHOOL OF BUSINESS AND ADMINISTRATION

OFFICE OF THE
DIRECTOR

June 10, 1991

Ms. Francine Burns
Executive Assistant to the Counsel
The White House
Washington, DC 20050

Dear Ms. Burns:

In response to the May 20 letter from Ms. Sharon Fitzpatrick Rodgers regarding my "prospective appointment to be a member on the President's Council of Science and Technology Advisors," attached is my completed PDS response ...

If you have any questions, kindly contact me --- or Mr. W. Michael Reickert.

Many Thanks!

Most sincerely,

Thomas J. Murrin
Dean

TJM:ss
Enclosures

bcc: Dr. Allan Bromley

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
02. Resume	Resume of Thomas Murrin [social security number redacted] (1 pp.)		(b)(6)	

Collection:

Record Group: Bush Presidential Records

Office: Science and Technology Policy, Office of (OSTP)

Series: Bromley, D. Allan, Files

Subseries: Organization Files - PCAST

WHORM Cat.:

File Location: Council - President's Council of Advisors on Science and Technology (PCAST) [1 of 2] [1991]

Date Closed: 5/13/2010

OA/ID Number: 62076-004

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 gift.

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

Thomas J. Murrin
Personal Data Statement Questionnaire

1. Thomas J. Murrin
2. D.O.B.: 4/30/29
Place of Birth: New York City
Social Security Number: (b)(6)
3. Dean
School of Business and Administration
Duquesne University
Rockwell Hall
Pittsburgh, PA 15282-0107
(412) 434-5157
4. 8077 Dormar Court
Pittsburgh, PA 15237
(412) 366-0623
5. W. Michael Reickert
The Ayco Corporation
One Wall Street
Albany, NY 12205
(518) 464-2406
6. Fordham University, B.S. 1951

7.	<u>From</u>	<u>To</u>	<u>Name of Organization</u>	<u>Affiliation</u>	<u>Location of Organization</u>
	1/88	4/89	Esterline Corporation	Member - Board of Directors	10800 NE Eighth Street Suite 600 Bellevue, WA 98004
	2/88	4/89	Kaman Corporation	Member - Board of Directors	Bloomfield, CT 06002
	2/88	4/89	Logistics Management Ins.	Member - Board of Trustees	6400 Goldsboro Road Bethesda, MD 20817-5886
	1985	4/89	Carnegie Mellon University	Member of Graduate School of Indus. Admin. Business Advisory Council until early 1988. Subsequently, Distinguished Service Professor of Technology and Manufacturing	5000 Forbes Avenue Pittsburgh, PA 15213
	10/77	4/89	Duquesne University	Chairman of the Board of Trustees	Pittsburgh, PA 15282
	1970	4/89	Mercy Hospital and Pittsburgh Mercy Health System	Chairman of the Board of Trustees	1400 Locust Street Pittsburgh, PA 15219

Thomas J. Murrin
 Personal Data Statement Questionnaire
 Page Two

7. (continued)

<u>From</u>	<u>To</u>	<u>Name of Organization</u>	<u>Affiliation</u>	<u>Location of Organization</u>
1984	4/89	Fordham University	Member - Board of Trustees	Bronx, New York
1951	Present	Fordham University* Alumni Association	Member	Fordham University Bronx, New York 10458
1984	4/89	Cities in Schools	Member - Board of Directors	1023 15th Street Suite 600 Washington, DC 20005
1969	Present	Duquesne Club*	Member	325 Sixth Avenue Pittsburgh, PA 15219
1984	Present	National Academy of Engineering*	Member	2101 Constitution Ave., NW Washington, DC 20418
1985	Present	Pittsburgh Leadership Foundation*	Member	100 Ross Street Pittsburgh, PA 15219
1966	Present	Wildwood Golf Club*	Member	2195 Sample Road Pittsburgh, PA 15101
1985	Present	Mel Blount Youth Home*	Advisor	Route 2 - Box 128 Vidalia, GA 30474
1986	Present	United Way of Southwestern PA*	Member - Board of Directors	200 Ross Street Pittsburgh, PA 15219
1988	Present	America-Japan Society* of Pittsburgh	Member - Board of Directors	600 Grant Street Suite 444 Pittsburgh, PA 15219
3/79	Present	Beta Gamma Sigma*	Member	Duquesne University Pittsburgh, PA 15282
10/82	12/87	Defense Policy Advisory Committee on Trade (DPACT)	Chairman, DPACT Subcommittee on Trade with Japan	The Pentagon Washington, DC
6/79	12/87	Regional Industrial Development of Southwest Pennsylvania	Board of Directors and Member of Executive Committee	Union Trust Building Pittsburgh, PA 15219
1972	1982	Center for Strategic & International Studies	Advisory Board	Georgetown University 1800 K Street, NW Washington, DC 20006
2/88	Present	Kentucky Colonels*	"Kentucky Colonel"	Commonwealth of Kentucky

Thomas J. Murrin
 Personal Data Statement Questionnaire
 Page Three

7. (continued)

<u>From</u>	<u>To</u>	<u>Name of Organization</u>	<u>Affiliation</u>	<u>Location of Organization</u>
6/71	12/87	Aerospace Industries Assn.	Member - Board of Governors	1250 Eye Street, NW Washington, DC 20005
1986	1988	Boy Scouts of America	Member - Board of Directors	Flag Plaza Pittsburgh, PA 15219
1983	12/87	National Research Council Manufacturing Studies Board	Member	2101 Constitution Avenue Washington, DC 20418
1983	12/87	Electric Power Research Institute	Member	P.O. Box 10412 Palo Alto, CA 94303
1983	12/87	Committee on Energy Awareness	Member - Board of Directors	1111 19th Street, NW Washington, DC 20006
1981	12/87	Allegheny Conference on Community Development	Member	600 Grant Street Pittsburgh, PA 15219
1972	1976	National Security Industrial Association	Member - Board of Trustees	1015 15th Street, NW Washington, DC 20005
1/86	12/87	Atlantic Council	Member - Board of Directors	1616 H Street, NW Washington, DC 20006
9/88	Present	The Whales Tale*	Fund-Raising Chairman	250 Shady Avenue Pittsburgh, PA 15206
3/89	Present	The Irish Centre* of Pittsburgh, Inc.	Member	6886 Forward Avenue Pittsburgh, PA 15217
1987	Present	Hospital Trustee Forum (Hospital Council of Western Pennsylvania)	Vice Chairman	500 Commonwealth Drive Warrendale, PA 15086
6/89	12/90	United States Department of Commerce	Deputy Secretary	Washington, DC
1952	1987	Westinghouse Electric Corp.	Officer	Pittsburgh, PA
1991	Present	Duquesne Light Company*	Member - Board of Directors	Pittsburgh, PA
1991	Present	Motorola, Inc.*	Member - Board of Directors	Schaumburg, IL
1991	Present	NASA Advisory Council	Member	Washington, DC
1988	1989	Hudson Valley Limited Partnership	Limited Partner	Mount Kisco, NY
1978	Present	Pennflor Associates*	Limited Partner	Albany, NY

Thomas J. Murrin
 Personal Data Statement Questionnaire
 Page Four

7. (continued)

<u>From</u>	<u>To</u>	<u>Name of Organization</u>	<u>Affiliation</u>	<u>Location of Organization</u>
1980	Present	Guilder Property Co.*	Limited Partner	Albany, NY
1982	1990	Guilder '82 Property Co.	Limited Partner	Albany, NY
1986	Present	Golfside Lakes Apts. Phase III*	Limited Partner	Ann Arbor, MI

8. Organization

Nature of Financial Interest

Mercy Hospital Foundation*

1. Participant in Mercy Hospital Pooled Income Fund.

Duquesne Light Company*

1. 1,000 shs. of common stock
 2. Will receive compensation as a Director.
 3. Will receive reimbursement for travel, lodging, meals and related expenses associated with being a Director of Duquesne Light Company.

Motorola, Inc.*

1. 500 shs. of common stock
 2. Will receive compensation as a Director.
 3. Will participate in Motorola, Inc. Director's Pension Plan.
 4. Will receive reimbursement for travel, lodging meals and related expenses associated with being a Director of Motorola, Inc.

Westinghouse Electric Corporation*

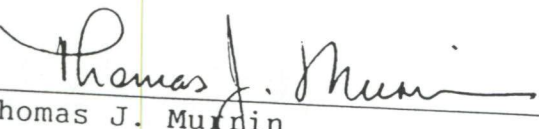
1. Pursuant to the Westinghouse Pension Plan, I will receive an annual pension benefit of \$35,880 for my lifetime. Upon my death, if my wife is then alive, she will receive an annual benefit of \$19,734 for her lifetime.
 2. Pursuant to the Westinghouse Executive Pension Supplement, I will receive an annual pension benefit of \$255,411 for my lifetime. Upon my death, if my wife is then alive, she will receive an annual benefit of \$140,476 for her lifetime.
 3. Pursuant to an agreement dated December 10, 1987, Westinghouse Electric Corporation will provide medical insurance benefits to myself and my wife until both my wife and myself are eligible for Medicare.
 4. Participation in the Westinghouse Personal Savings Program.

Duquesne University*

1. Will continue to receive compensation as Dean of the School of Business and Administration.
 2. Participation in the TIAA/CREFF Retirement Plan.

Thomas J. Murrin
Personal Data Statement Questionnaire
Page Five

9. None.
10. None.
11. None.
12. NASA Advisory Council - Member.
13. None.
14. See #8 above.
15. No.
16. No.
17. No.
18. No.
19. No.
20. No.
21. No.
22. No.
23. No.
24. No.
25. No.
26. No.
27. None.


Thomas J. Murrin

6-10-91
Date

INVITED COMMENTS TO INTRODUCE INTERNATIONAL AEROSPACE DAY
1991 ANNUAL MEETING OF THE
AMERICAN INSTITUTE OF AERONAUTICS & ASTRONAUTICS
MAY 2, 1991
HYATT REGENCY - CRYSTAL CITY - ARLINGTON, VA

By The Honorable Thomas J. Murrin
Former Deputy Secretary of Commerce; and
Dean of the School of Business and Administration of
Duquesne University

Thank you Bill (Paul, Sr. V.P. --- United Technologies) ---
and Good Morning, Ladies and Gentlemen!

I'm delighted to have this opportunity to return to D.C. ---
and to be with many former associates in our critically important
Aerospace Industry!

For those of you who do know me --- or have heard me speak
before --- you know that there is one concern that has motivated
me throughout my careers in Industry, Government, and now in
Academe. That concern is the long-term global competitiveness of
American Industry.

I have been a student of U.S. industrial competitiveness for
about three decades. I am sorry to say that --- during this time
--- I have usually found too little to celebrate and too much to
cause concern. We have watched the slow erosion of U.S.
leadership in such segments as steelmaking, ship-building,
automotive, textiles, machine tools, electronics, nuclear energy,
and transportation. And now we see the patterns established in
those industries slowly repeating themselves in other key sectors
of our economy.

The Council on Competitiveness --- on whose Executive
Committee I'm privileged to serve --- recently issued a major new
report evaluating critical technologies in nine major sectors of
our economy; which together account for over \$1 trillion of
sales. The report "reflects the strong conviction of leading
American private-sector executives that unless the nation acts
immediately to promote its position in critical generic
technologies, U.S. technological competitiveness will erode
further, with disastrous consequences for American jobs, economic
growth and national security." (Unquote.)

In case you haven't yet read this report, let me reference
just one section which is very important to our Aerospace
Industry regarding Engineering and Production Technologies:

THE WHITE HOUSE

Aug 14, 91
Dear Tom: (Murrin)
We are looking forward to
seeing you at the Sept PRAS
meeting and Sam Welch will
be providing you briefing material.
Sam is off for a much needed
week vacation. Best regards
Adam



OFFICE OF THOMAS J. MURRIN
DEAN OF THE SCHOOL OF BUSINESS AND ADMINISTRATION

DUQUESNE UNIVERSITY

PITTSBURGH • PENNSYLVANIA • 15282

(412) 434-5156

FAX (412) 642-9106

01 AUG 2 P2:45

OFFICE OF THE
DIRECTOR

July 26, 1991

D. Allan Bromley
Assistant to the President
for Science and Technology
The White House
Washington, DC 20006

Dear Allan:

Many thanks for your letter of July 19 --- and the information on the new Panel on Science, Technology and National Security!

I'm honored to be associated with such a distinguished group --- and such an important issue!

Unfortunately, earlier commitments preclude my attendance at the August 5 - 6 session --- but, hopefully, I'll be available for the September meeting.

I'm advised (by Tom Welch et al.) that my forthcoming PCAST "clearance" will allow me to participate on this Panel --- without any additional Panel-peculiar forms being processed!?

Again, Many Thanks!

Good Luck!

God Bless!

Most sincerely,

Thomas J. Murrin
Dean

TJM:ss

cc: Dr. Charles Herzfeld
Dr. Thomas Welch

THE WHITE HOUSE

WASHINGTON

April 9, 1991

MEMORANDUM FOR GOVERNOR SUNUNU

FROM: D. ALLAN BROMLEY *Man*

SUBJECT: MAY MEETING OF THE PRESIDENT'S COUNCIL OF
ADVISORS ON SCIENCE AND TECHNOLOGY

I would like to invite you to participate in a meeting of the President's Council of Advisors on Science and Technology on Friday, May 2, 1991. A draft agenda for the meeting is enclosed.

You will recall that the Council, also known as PCAST, is a group of 12 prestigious individuals from academia and industry who report directly to the President and examine a broad range of science and technology issues for the President and other White House offices. In addition, PCAST assembles ad hoc panels of private sector executives, researchers, and academics to address issues in depth.

The PCAST serves two major functions. The first is to provide the President with accurate, objective information on science and technology as it affects public policy -- in short, science and technology for policy. Of particular importance here is making sure that the President and his policy makers not only have the science and technology input but also some realistic feeling for how reliable and trustworthy is that input.

A second major task is to help ensure the health and productivity of science and technology in this country -- in short, to advise on policy for science and technology. One important aspect of this is the PCAST critique of science and technology plans and programs within the federal government.

At the meeting in May, the PCAST would be most interested in your top objectives for 1991 and how PCAST can be helpful. We would also be pleased to hear what other issues are of importance to the President and for which you believe the PCAST can offer helpful advice.

Last, the PCAST is interested in hearing your ideas on private sector initiatives that might be supportive of your objectives and the needs of the President.

For your reference, I have attached the list of members of the PCAST and a list of the Panels which we are in the process of forming.

For various reasons we have been unable to meet with the President during the last two months. Therefore, we have requested to meet with the President for one hour beginning at 10:00 AM on Friday, May 3, 1991 to report to him the actions we have taken and the panels we have established to respond to questions he posed at earlier meetings. And, of course, we are anxious to be updated on his wishes in these or other areas. We hope that you could join us at 9:30 AM and remain with us during the discussion with the President. If that is inconvenient for you, we could also schedule time for you on Thursday afternoon, May 2, 1991. Please ask Jackie to contact Tom Welch at 395-5101 to let us know of your availability.

I look forward to hearing from you and hope that you can join us.

Attachments

THE WHITE HOUSE

WASHINGTON

March 12, 1991

MEMORANDUM FOR GOVERNOR SUNUNU

FROM: D. ALLAN BROMLEY *Alan*
SUBJECT: NOMINATIONS FOR NEW PCAST MEMBERS

As you know, Walter Massey has now been confirmed as Director of NSF and Bernadine Healy will have her confirmation hearings as the nominee for Director of NIH this Thursday before Senator Kennedy's Labor Committee in the Senate.

Over the past two months, in PCAST, we have been considering various candidates to replace Massey and Healy on PCAST. Out of these deliberations there has emerged a unanimous consensus that the following two persons would be outstanding.

1. Mary Lowe Good
2. Thomas F. Murrin

I am enclosing brief CV's for these individuals. You will recognize Mary Good as the current Chairman of the National Science Board and Tom Murrin as, until recently, Deputy Secretary of Commerce, and before that, Executive Vice President of Westinghouse.

Mary would be prepared to resign her NSB chairmanship early to move to PCAST where I think she could be even more effective and Tom would be happy to serve, if asked. I checked with Bob Mosbacher and he thinks it would be great if you and the President approve.

Mary would obviously replace Bernadine while Tom would add important experience in heavy industry.

We have mounted an aggressive search for a minority candidate to replace Massey and have an opening in the roster projected in the Executive Order establishing PCAST to add such a person as soon as we find the right candidate to suggest to you and the President.

The chemistry within PCAST has developed in excellent fashion and both Mary and Tom would contribute very effectively to its activities. If you approve, I would like to nominate them formally to the President as new PCAST members.

☐ Approve _____

☐ Disapprove _____

☐ Let's discuss _____

Enclosures

GOOD, MARY LOWE (MRS. BILLY JEWEL GOOD), business exec.; b. Grapevine, Tex., June 20, 1931; d. John W. and Winnie (Mercer) Lowe; B.S., Ark. State Tchrs. Coll., 1950; M.S., U. Ark., 1953, Ph.D., 1955, LL.D. (hon.), 1979; m. Billy Jewel Good, May 17, 1952; children—Billy, James. Instr., Ark. State Tchrs. Coll., Conway, summer 1949; instr. La. State U., Baton Rouge, 1954-56, asst. prof., 1956-58, asso. prof., New Orleans, 1958-63, prof., 1963-80, Boyd prof. materials sci., div. engring. research, Baton Rouge, 1979-80; v.p., dir. research UOP, Inc. Des Plaines, Ill., 1980—; chmn. Pres.'s Com. for Nat. Medal Sci., 1979—; mem. Nat. Sci. Bd., 1980—. Bd. dirs. Oak Ridge Asso. Univs. Recipient Agnes Faye Morgan research award, 1969; Distinguished Alumni citation U. Ark., 1973. AEC tng. grantee, 1967; NSF internat. travel grantee, 1968; NSF research grantee, 1969—. Fellow Am. Inst. Chemistry, Chem. Soc. London; mem. Am. Chem. Soc. (1st woman dir. 1971-74, regional dir. 1972—, chmn. bd. 1978—, Garvan medal 1973, Herty medal 1975, award Fla. sect. 1979), Phi Beta Kappa, Sigma Xi, Iota Sigma Pi (regional dir. 1967—). Club: Zonta (past pres. New Orleans club, chmn. dist. status of women com. and nominating com.; chmn. internat. Amelia Earhart scholarship com.). Contbr. articles to profl. jours. Home: 295 Park Dr Palatine IL 60067 Office: Corp Research Center UOP Inc Ten UOP Plaza Des Plaines IL 60016

THOMAS J. MURRIN

After his retirement from the Westinghouse Electric Corporation in December, 1987, Thomas J. Murrin joined Carnegie Mellon University as Distinguished Service Professor in Technology and Management. He was also elected Chairman of the Board of Trustees of Duquesne University. Additionally, he has been selected to chair DoD's new Defense Manufacturing Board and to chair the Overseers of the new Malcolm Baldrige National Quality Award. Also, he is a spokesman for the Aerospace Industries Association's "Key Technologies of the 90s" Program. During 1988, he joined the Board of Directors of the Logistics Management Institute in Bethesda, MD.; the Kaman Corporation in Hartford, Connecticut; and the Esterline Corporation in Bellevue, WA.

Mr. Murrin is Chairman of the Board of Trustees of Pittsburgh's Mercy Health System -- and serves on the Board of Trustees of Fordham University; and recently served on the Business Advisory Council of the Graduate School of Industrial Administration of Carnegie Mellon University.

Mr. Murrin has been a U.S. Delegate to the NATO Industrial Advisory Group; headquartered in Brussels, Belgium. He was a White House appointee to the President's Commission on Industrial Competitiveness, and served as co-chairman of the Human Resources Committee. He was a member and past chairman of the Board of Governors of the Aerospace Industries Association. For the past several years, he was a member of the Secretary of Defense's Defense Policy Advisory Committee on Trade, and chairman of DPACT's Subcommittee on Trade Relations with Japan. He is also a member of the National Board overseeing "Cities in Schools"; an organization working effectively to solve the school dropout problem.

Mr. Murrin earned a Bachelor of Science degree in Physics from Fordham University in 1951 -- and has done graduate work at several universities.

After being recruited to Westinghouse as a Graduate Student, he joined the Westinghouse Transformer Division in Sharon, Pa. in 1952 as a Manufacturing/Materials Engineer. In 1955, Mr. Murrin became Superintendent of Factory Planning for the new Distribution Transformer plant in Athens, Ga. In 1959, he was appointed Corporate European Manufacturing Representative based in Geneva, Switzerland. In 1961, he became General Manager of the Motor and Gearing Division in Buffalo. In 1965, Mr. Murrin was elected Corporate Vice President of Manufacturing; in 1967, Group Vice President of Defense; in 1971, Executive Vice President of the Defense and Public Systems Group; in 1974, Senior Vice President of the Group; and in 1974, President of the Public Systems Company.

As President of Westinghouse's Energy and Advanced Technology Group since 1983, Mr. Murrin was responsible for Westinghouse's worldwide operations in defense and aerospace systems; electrical energy systems; and in people-moving systems. The EAT Group of Westinghouse -- with almost \$5 billion in annual sales -- managed about \$800 million of R&D expenditures -- and applied innovative quality and productivity policies-and-procedures which contributed significantly to improved international competitiveness. He had been a member of the Westinghouse Management Committee, the top policy-making body of the Corporation, since 1974.

Mr. Murrin's activities have involved foreign travel to more than 40 countries.

Among Mr. Murrin's honors are the Encaenia Award from Fordham University in 1956; the Westinghouse Order of Merit in 1968; Fordham University's Annual Achievement Award in Business in 1976; the National Leadership Award from the American Productivity Center in 1981; the James Forrestal Memorial Award of the National Security Industrial Association in 1982; election to the National Academy of Engineering in 1985; the Manufacturing Management Award of the Society of Manufacturing Engineers in 1986; and, in 1988, selection to the Hall of Fame of Cardinal Hayes High School in New York City, with 22,000 graduates.

He is married to the former Dee Coyne of New York City, and their home is in Pittsburgh's North Hills suburban area. The Murrins have eight children. A native of New York City, Mr. Murrin was born on April 30, 1929.

THE WHITE HOUSE
WASHINGTON

April 18, 1991

MEMORANDUM FOR BRENT SCOWCROFT

FROM: D. ALLAN BROMLEY *Alan*
SUBJECT: Science, Technology and National Security

Our previous discussions on the potential for increased interactions between our offices have been most interesting. As we discussed, I have considered the possible tasks that could be undertaken by a senior person with a joint appointment to NSC and OSTP. Following are some of my thoughts.

The President's Council of Advisors on Science and Technology (PCAST) has in recent months focused attention on issues of technology in national defense. Bob Gates met with PCAST on January 10, 1991 and was very helpful in framing our discussion. This is not an area in which this office is heavily involved currently, although we do have a small national security staff that deals with some of the defense issues. That staff is providing the PCAST with some assistance. We are also working with the Department of Defense on issues related to long-range DOD technology planning. NSC involvement would help guide this inquiry and make its science and technology aspects more directly helpful to NSC. In addition, your office could assist in identifying considerations beyond the narrow DOD context. A staff person serving jointly on our staffs would be invaluable to this effort.

The U.S. has taken a leading role in assisting the international community with scientific and technological solutions to international and domestic problems. This includes assistance in the development of mechanisms and agreements for international scientific and technological cooperation. With easing East-West tensions there are indications that this kind of activity will increase. We are currently involved in effectuating many important bilateral science and technology agreements, and work very closely with many of your staff. Nevertheless, a science staff person of stature assigned to your office could keep all your directorates apprised of these activities and better ensure that we do not inadvertently overlook important NSC concerns in this process.

There is interest in the science and national security community in building a formal relationship between our offices. The Carnegie Commission has recently pursued this issue and may come out with recommendations. If a mechanism was already in place to do this, we could avoid the potential debate or congressional interest in this issue. Such a person could also advise you and assist your organization as required on science and technology issues that may be of particular interest to you. By having a

relationship with OSTP, you could also tap into our staff's capability to produce short briefing papers on a variety of topics.

These are some of our thoughts on the matter of a joint appointment serving OSTP and NSC. Of course, much of the activities of such a position will depend on your needs. For example, this could provide the capacity for an independent view of a variety of technologies as they impinge on national security, or it could assist in discussions of the duality of technologies as they are involved in issues of national security and economic competitiveness. Finally, we are currently putting together a Critical Technologies Institute and this could provide a mechanism for private sector contacts or briefings. I would welcome an opportunity to discuss this further.

THE WHITE HOUSE
WASHINGTON

March 27, 1991

MEMORANDUM FOR THE PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE
AND TECHNOLOGY

FROM: D. ALLAN BROMLEY *Alan*
SUBJECT: STATUS OF PCAST PANELS

I would like to take this opportunity to discuss the status and plans for our PCAST Panels. At our last meeting we made significant progress towards creation of several of the proposed Panels. In particular, the Technology and National Security Panel, the Global Environment and Natural Resources Panel, the Bioscience and Biotechnology Panel, and the International Framework for Basic Science Megaprojects Panel should begin substantive work very soon.

As you can see from the draft agenda for April (Attachment 1), I intend for us to build upon this progress. We will look for progress reports from the Technology and National Security Panel, the High Performance Computing and Communications Panel, and the Global Environment and Natural Resources Panel. Also, I believe we can secure final approval of the Terms of Reference and members for the Panels on Education and Human Resources, Bioscience and Biotechnology, and on An International Framework for Basic Science Projects.

It is my hope that by May all seven of the currently proposed Panels will have an approved Terms of Reference and members and, in some cases, be fully underway. Attachment 2 is a delineation of our Panel progress and plans.

With these goals in mind, I believe it is important that I now designate an OSTP "sponsor" for each of these Panels (Attachment 3). In each case, this sponsor will be my Associate or Assistant Director most appropriate for a Panel. The sponsor will work with the Panels to help the Panel Chairman with such tasks as identifying top Administration issues, panel nominees and subject-matter-experts, and also, providing support once the Panel is underway.

Finally, I believe that it is important to remember that PCAST Panels are *task-oriented*. In other words, the aim is for these Panels to be of finite duration and with the specific product goal of providing PCAST advice to the President on the findings. Thus, once this has occurred, PCAST can move on to other topics and new Panels can be formed as necessary.

I would be very interested to hear any comments you have on the future of the PCAST Panels and these three attachments.

I look forward to seeing all of you in April.

Attachments:

Draft PCAST Agenda for April
PCAST Panel Progress
List of PCAST Panels and OSTP Sponsors

CC:

Associate Directors
Assistant Directors
Chief of Staff

DRAFT

As of March 26, 1991

PRESIDENT'S COUNCIL OF ADVISORS
ON
SCIENCE AND TECHNOLOGY

APRIL 4-5, 1991
AGENDA

THURSDAY, APRIL 4, 1991

OPEN SESSION 9:00 AM - 11:00 AM
CONFERENCE ROOM
COUNCIL ON ENVIRONMENTAL QUALITY
722 JACKSON PLACE, NW

8:30 - 9:00	ARRIVAL AND COFFEE	
9:00 - 9:30	OPENING REMARKS	DR. BROMLEY
9:30 - 10:30	OCEAN SCIENCE	DR. KNAUSS DR. BAKER
10:30 - 11:00	DISCUSSION	
11:00 -	CLOSING REMARKS	DR. BROMLEY

DRAFT

THURSDAY, APRIL 4, 1991 Continued...

**CLOSED SESSION 11:00 - 4:30 PM
ROOM 22
OLD EXECUTIVE OFFICE BUILDING**

11:15 - 11:30	NATIONAL SECURITY AND TECHNOLOGY PANEL - A PROGRESS REPORT	DR. BUCHSBAUM
11:30 - 11:45	HIGH PERFORMANCE COMPUTING AND COMMUNICATIONS PANEL - A PROGRESS REPORT	DR. BUCHSBAUM
11:45 - 12:00	GLOBAL ENVIRONMENT AND NATURAL RESOURCES PANEL - A PROGRESS REPORT	DR. LOVEJOY
12:00 - 12:45	LUNCH	
12:45 - 1:00	BREAK	
1:00 - 1:30	REMARKS ON THE REPORT, "LEADERSHIP AND AMERICA'S FUTURE IN SPACE" *	DR. RIDE
1:30 - 1:45	DISCUSSION	
1:45 - 2:15	TO BE DETERMINED	
2:15 - 3:00	BREAK	
2:30 - 3:00	REMARKS ON THE "REPORT OF THE ADVISORY COMMITTEE ON THE FUTURE OF THE U.S. SPACE PROGRAM"	DR. AUGUSTINE
3:00 - 3:15	DISCUSSION	
3:00 - 4:00	LAMAR ALEXANDER, SECRETARY OF EDUCATION **	
4:00 - 4:30	DISCUSSION OF MAY AGENDA AND CLOSING REMARKS	DR. BROMLEY

* Time may change

** Tentative

DRAFT

FRIDAY, APRIL 5, 1991

**CLOSED SESSION 9:00 AM - 12:00 NOON
CORDELL HULL CONFERENCE ROOM
ROOM 208
OLD EXECUTIVE OFFICE BUILDING**

8:30 - 8:50	ARRIVAL AND COFFEE <u>(DR. BROMLEY'S OFFICE, ROOM 358, OEOB)</u>	
8:50 - 9:00	MOVE TO CORDELL HULL CONFERENCE ROOM	
9:00 - 9:15	OPENING REMARKS	
9:15 - 9:30	APPROVAL OF TERMS OF REFERENCE AND MEMBERS FOR PCAST PANEL ON EDUCATION AND HUMAN RESOURCES	DR. LIKINS
9:30 - 9:45	APPROVAL OF TERMS OF REFERENCE AND MEMBERS FOR PCAST PANEL ON INTERNATIONAL FRAMEWORK FOR BASIC SCIENCE MEGAPROJECTS	DR. McTAGUE DR. RATCHFORD
9:45 - 10:00	APPROVAL OF TERMS OF REFERENCE AND MEMBERS FOR PCAST PANEL ON BIOSCIENCE AND BIOTECHNOLOGY PANEL	DR. HEALY DR. NATHANS
10:00 - 10:15	DISCUSSION OF TERMS OF REFERENCE AND MEMBERS FOR PCAST PANEL ON INTERNATIONAL ECONOMIC COMPETITIVENESS	DR. GOMORY DR. SHAPIRO
10:15 - 10:30	BREAK	
10:30 - 11:00	TO BE DETERMINED	
11:00 - 11:15	DISCUSSION	
11:15 - 12:00	OTHER BUSINESS AND CLOSING REMARKS	DR. BROMLEY

* Note the President and the Vice President will be away on travel on Thursday and Friday and will be unable to attend.

PCAST PANEL ACTIONS
(March 6, 1991)

	Sol, Ralph	Ralph, John	Dan, Bernadine	Peter, Chuck	Sol, Johnny Foster	Tom, David, Norman	John
	High Perfor. Computing & Commun.	International Economic Competitive.	Bioscience and Biotech.	Education & Human Resources	Technology & National Security	Global Environ. & Natural Res.	Int'l Framework For Basic Science Megaprojects
Information Briefing on Topic	MAR '90	MAY '90 JUL '90	APR '90	APR '90	FEB '91	MAY '90 JUL '90 FEB '91	FEB '91
Issues & Panel Members Discussed	MAR '90	APR '91	MAY '90 MAR '91	JUL '90 SEP '90 MAR '91	FEB '91 MAR '91	FEB '91	FEB '91 MAR '91
Terms of Reference, Members Approved	APR '90		APR '91	APR '91	APR '91	MAR '91	APR '91
Progress Report #1	JUL '90			MAY '91	MAY '91	APR '91	MAY '91
Progress Report #N	APR '91						
PCAST Briefed							
PCAST Position Taken							
Meet With President							
Status Review							

PCAST PANELS

INTERNATIONAL ECONOMIC COMPETITIVENESS

Including Subset Issue: Materials Science and Engineering

Chairman: Ralph Gomory/John McTague

Vice Chairman: Harold Shapiro/Peter Likins

OSTP Sponsor: Associate Director for Industrial Technology

TECHNOLOGY AND NATIONAL SECURITY

**Co-Chairmen: Sol Buchsbaum
 Johnny Foster**

OSTP Sponsor: Assistant Director for National Security

HIGH PERFORMANCE COMPUTING AND COMMUNICATIONS

Chairman: Sol Buchsbaum

Vice Chairman: Ralph Gomory

**OSTP Sponsor: Associate Director for Physical Sciences and
 Engineering**

EDUCATION AND HUMAN RESOURCES

Chairman: Peter Likins

Vice Chairman: Charles Drake

**OSTP Sponsor: Associate Director for Policy and International
 Affairs**

INTERNATIONAL FRAMEWORK FOR BASIC SCIENCE MEGAPROJECTS

Chairman: John McTague

**OSTP Sponsor: Associate Director for Policy and International
 Affairs**

BIOSCIENCE AND BIOTECHNOLOGY

Chairman: Dan Nathans
Vice Chairman: Bernadine Healy

OSTP Sponsor: Associate Director for Life Sciences (TBC)

GLOBAL ENVIRONMENT AND NATURAL RESOURCES

Chairman: Tom Lovejoy
Vice Chairmen: David Packard
Norman Borlaug

OSTP Sponsor: Assistant Director for the Environment

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
03. Memorandum	To: PCAST Members From: Allan Bromley Re: Nominations for New PCAST Members [personal information, including attached biographies, redacted] (5 pp.)	2/27/91	(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Organization Files - PCAST
WHORM Cat.:
File Location: Council - President's Council of Advisors on Science and Technology (PCAST) [1 of 2] [1991]

Date Closed:	5/13/2010	OA/ID Number:	62076-004
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

THE WHITE HOUSE
WASHINGTON

May 10, 1991

Dear Jim:

I am pleased to invite you to provide expertise to the Panel on Megaprojects in the Sciences of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the PCAST on national and international policy issues related to the planning, financing and organization of large scale projects in the sciences, otherwise known as megaprojects. The Panel is chaired by Council member Dr. John McTague, Vice President--Technical Affairs, Ford Motor Company. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy representative on the Panel.

Should travel be necessary, invitational travel orders will be issued by the OSTP. This permits the government to pay your per diem and travel expenses.

I hope you will find the time to assist us in this important activity. If so, please let me know at your earliest convenience by calling (202) 456-7116. I shall ask the Panel Chairman, John McTague to contact you; he will elaborate on what the Panel hopes to accomplish and how it will function.

I look forward to hearing from you.

Sincerely,



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

Dr. D. James Baker
President
Joint Oceanographic Institutions, Incorporated
1755 Massachusetts Avenue, N.W.
Suite 800
Washington, D.C. 20036-2102

THE WHITE HOUSE
WASHINGTON

May 10, 1991

Dear Mr. Cutler:

I am pleased to invite you to provide expertise to the Panel on Megaprojects in the Sciences of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the PCAST on national and international policy issues related to the planning, financing and organization of large scale projects in the sciences, otherwise known as megaprojects. The Panel is chaired by Council member Dr. John McTague, Vice President--Technical Affairs, Ford Motor Company. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy representative on the Panel.

Should travel be necessary, invitational travel orders will be issued by the OSTP. This permits the government to pay your per diem and travel expenses.

I hope you will find the time to assist us in this important activity. If so, please let me know at your earliest convenience by calling (202) 456-7116. I shall ask the Panel Chairman, John McTague to contact you; he will elaborate on what the Panel hopes to accomplish and how it will function.

I look forward to hearing from you.

Sincerely,



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

Mr. Lloyd Cutler
Wilmer, Cutler, and Pickering
2445 M Street, N.W.
Washington, D.C. 20037

THE WHITE HOUSE
WASHINGTON

May 10, 1991

Dear Jim:

I am pleased to invite you to provide expertise to the Panel on Megaprojects in the Sciences of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the PCAST on national and international policy issues related to the planning, financing and organization of large scale projects in the sciences, otherwise known as megaprojects. The Panel is chaired by Council member Dr. John McTague, Vice President--Technical Affairs, Ford Motor Company. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy representative on the Panel.

Should travel be necessary, invitational travel orders will be issued by the OSTP. This permits the government to pay your per diem and travel expenses.

I hope you will find the time to assist us in this important activity. If so, please let me know at your earliest convenience by calling (202) 456-7116. I shall ask the Panel Chairman, John McTague to contact you; he will elaborate on what the Panel hopes to accomplish and how it will function.

I look forward to hearing from you.

Sincerely,



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

Mr. James M. Beggs
Chairman
SPACEHAB Incorporated
Suite 201 West
600 Maryland Avenue, S.W.
Washington, D.C. 20024

THE WHITE HOUSE
WASHINGTON

May 10, 1991

Dear Jack:

I am pleased to invite you to provide expertise to the Panel on Megaprojects in the Sciences of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the PCAST on national and international policy issues related to the planning, financing and organization of large scale projects in the sciences, otherwise known as megaprojects. The Panel is chaired by Council member Dr. John McTague, Vice President--Technical Affairs, Ford Motor Company. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy representative on the Panel.

Should travel be necessary, invitational travel orders will be issued by the OSTP. This permits the government to pay your per diem and travel expenses.

I hope you will find the time to assist us in this important activity. If so, please let me know at your earliest convenience by calling (202) 456-7116. I shall ask the Panel Chairman, John McTague to contact you; he will elaborate on what the Panel hopes to accomplish and how it will function.

I look forward to hearing from you.

Sincerely,


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

Professor Jack Sandweiss
Department of Physics
503 J.W. Gibbs
260 Whitney Avenue
Yale University
New Haven, Connecticut 06511

THE WHITE HOUSE
WASHINGTON

May 10, 1991

Dear Ed:

I am pleased to invite you to provide expertise to the Panel on Megaprojects in the Sciences of the President's Council of Advisors on Science and Technology (PCAST).

The purpose of the Panel is to advise the PCAST on national and international policy issues related to the planning, financing and organization of large scale projects in the sciences, otherwise known as megaprojects. The Panel is chaired by Council member Dr. John McTague, Vice President--Technical Affairs, Ford Motor Company. My Associate Director for Policy and International Affairs, Dr. J. Thomas Ratchford will be the Office of Science and Technology Policy representative on the Panel.

Should travel be necessary, invitational travel orders will be issued by the OSTP. This permits the government to pay your per diem and travel expenses.

I hope you will find the time to assist us in this important activity. If so, please let me know at your earliest convenience by calling (202) 456-7116. I shall ask the Panel Chairman, John McTague to contact you; he will elaborate on what the Panel hopes to accomplish and how it will function.

I look forward to hearing from you.

Sincerely,



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

Dr. Edward A. Frieman
Director
Scripps Institution of Oceanography
University of California, San Diego
9500 Gilman Drive, Mail Code 0210
La Jolla, California 92093

THE WHITE HOUSE
WASHINGTON

January 7, 1991

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY *Alan*
SUBJECT: PCAST MEETING, JANUARY 10-11, 1991

The regular PCAST monthly meeting is scheduled for the above mentioned dates. Recognizing the enormous pressures on your time we have not formally requested inclusion of our meeting on your schedule for Friday, January 11. We will be meeting in the Roosevelt Room and would, of course, be delighted should you have the opportunity to drop by.

At this meeting I have scheduled meetings of the PCAST with senior members of your staff including John Sununu, Dick Darman, Brent Scowcroft, Michael Boskin as well as Dick Truly and Fred Bernthal. Our intent is to use this meeting to frame the PCAST agenda for 1991 and look to these visitors to provide important input so that PCAST can be as responsive as possible to your needs.

John Sununu will meet with the group from 10:00 to 11:00 a.m. on Friday and Michael Boskin from 11:00 to 12:00, the remainder meet with us on Thursday afternoon in the EOB as the attached agenda indicates.

When we last met with you in December you mentioned your wish that we could schedule enough time for a fuller discussion of some of the issues that we have been considering since our first PCAST meeting last February at Camp David. The members of PCAST would welcome such an opportunity--not only to continue these discussions but also to hear from you regarding other issues about which you might wish to have input from the group.

The February PCAST meeting is scheduled for February 7-8 and I shall request time on your schedule during the morning of February 8 so that we can report to you on our forthcoming discussions with members of your senior EOP staff and on the agenda that we would propose for 1991.

Attachment

DRAFT

**As of Noon
January 7, 1991**

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

JANUARY 10-11, 1991

AGENDA

THURSDAY, JANUARY 10, 1991

**OPEN SESSION 9:00 AM - 12:00 NOON
CONFERENCE ROOM
COUNCIL ON ENVIRONMENTAL QUALITY
722 JACKSON PLACE, NW**

8:30 - 9:00	ARRIVAL -- COFFEE AND PASTRIES	
9:00 - 9:30	OPENING REMARKS	DR. BROMLEY
9:30 - 10:30	BIODIVERSITY - AN INFORMATION BRIEFING	DR. WILSON
10:30 - 10:45	DISCUSSION	
10:45 - 11:45	OFFICE OF SCIENCE AND TECHNOLOGY POLICY - ACCOMPLISHMENTS FOR 1990	OSTP STAFF
11:45 - 12:00	CLOSING REMARKS	DR. BROMLEY

DRAFT

THURSDAY, JANUARY 10, 1991 Continued ...

**CLOSED SESSION, 12:00 NOON - 5:00 PM
ROOM 248
OMB DIRECTOR'S CONFERENCE ROOM
OLD EXECUTIVE OFFICE BUILDING**

12:00 - 12:45	LUNCH	
12:45 - 1:00	BREAK	
1:00 - 4:30	ISSUES FOR PCAST CONSIDERATION	DR. BROMLEY
	1:00 - 2:00	DIRECTOR DARMAN
	2:00 - 3:00	DR. BERNTHAL
	3:00 - 4:00	GENERAL SCOWCROFT
	4:00 - 4:30	ADMIRAL TRULY
- 4:30	OTHER BUSINESS	DR. BROMLEY
- 6:30	COCKTAILS AND DINNER MAYFLOWER HOTEL	

DRAFT

FRIDAY, JANUARY 11, 1991

**CLOSED SESSION 9:00 AM - 12:00 NOON
ROOM 180
OLD EXECUTIVE OFFICE BUILDING**

8:30 - 9:00	ARRIVAL -- COFFEE AND PASTRIES (DR. BROMLEY'S OFFICE, ROOM 360, OEOB) .	
9:00 - 10:00	DISCUSSION OF FEBRUARY AGENDA AND OTHER ISSUES	DR. BROMLEY
10:00 - 12:00	ISSUES FOR PCAST CONSIDERATION	DR. BROMLEY
	10:00 - 11:00 GOVERNOR SUNUNU 11:00 - 12:00 CHAIRMAN BOSKIN	
- 12:00	CLOSING REMARKS	DR. BROMLEY

THE WHITE HOUSE
WASHINGTON

November 15, 1991

THE PRESIDENT'S COUNCIL OF ADVISORS ON
SCIENCE AND TECHNOLOGY

The President's Council of Advisors on Science and Technology (PCAST) was established by the President in February 1990 to provide independent advice to him on matters of national importance involving to science and technology. The Council provides its advice directly to the President. In this capacity, the Council is the highest-level, independent science and technology advisory body in the Nation.

The Council is composed of 12 highly distinguished members of the private sector who are appointed by the President. The Council is chaired by the Assistant to the President for Science and Technology. A biographical listing of the Council members is attached.

Since its establishment, the PCAST has met in plenary session sixteen (16) times and the President has participated in most of these meetings. During those meetings, the President indicated a number of topics for PCAST to consider. Also, the Council has had extensive discussions with various senior officials within the Executive Office of the President including the Vice President, the Director of the Office of Management and Budget, the Assistant to the President and Deputy for National Security Affairs, the Chairman of the Council of Economic Advisors, the Chairman of the Council on Environmental Quality, and the Assistant to the President for Economic and Domestic Policy, to help better understand the Administration's goals and how the PCAST could be most helpful. Further, the Council has consulted with many agency and department heads including the Secretary of Energy, the Administrator of NASA, the Deputy Secretary of Defense, and others.

PCAST is working intently on addressing the many issues raised during these discussions. Seven of the most important have been given to separate, ad hoc, panels chaired by PCAST members but drawing upon experts from the private sector as appropriate (list attached).

The President has restated his firm belief that science and technology play a vital role in generating economic growth and in increasing the standard of living of the American people, and that he very much looks forward to receiving PCAST advice on a continuing basis.

THE PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY

Members

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

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

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

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

RALPH GOMORY, President, The Sloan Foundation.

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

PETER LIKINS, President, Lehigh University.

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

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

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

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

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

HAROLD SHAPIRO, President, Princeton University.

D. ALLAN BROMLEY

D. Allan Bromley is Assistant to the President for Science and Technology and Director of the Office of Science and Technology Policy (OSTP) in the Executive Office of the President. He is on leave from his former position as Henry Ford II Professor of Physics at Yale University, where he was founder and Director of the A.W. Wright Nuclear Structure Laboratory.

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

For more than two decades, Dr. Bromley has been a leader in the national and international science and science policy communities. As chairman of the National Academy's Physics Survey in the early 1970's, he contributed in a central way a charting the future of that science in the subsequent decade. As president of the American Association for the Advancement of Science, the world's largest scientific society, and of the International Union of Pure and Applied Physics, the world coordinating body for that science, he has been one of the leading spokesmen for U.S. science and for international scientific cooperation.

Bromley

Prior to his present appointment, Dr. Bromley served as a member of the White House Science Council throughout the Reagan Administration and as a member of the National Science Board in 1988-1989. As the U.S. chairman for both the Gandhi-Reagan Indo/U.S. and the Sarney-Reagan Brazil/U.S. Science and Technology initiatives, he led four Presidential missions to conduct negotiations for bilateral cooperation in science and technology.

Born in Westmeath, Ontario, Canada, he received the B.Sc. degree with highest honors in 1948 in the Faculty of Engineering at Queen's University, Ontario, Canada. He received the M.Sc. degree from Queen's University in 1950 and the Ph.D. degree from the University of Rochester in 1952, both degrees in nuclear physics. He subsequently has been awarded twenty honorary degrees from universities in Canada, France, Germany, Italy, South Africa, and the United States.

He is a member of the U.S. National Academy of Sciences, of the American Academy of Arts and Sciences, a foreign member of the Brazilian and South African Academies of Science, and a Benjamin Franklin Fellow of the Royal Society of Arts in London, England.

NORMAN E. BORLAUG

Norman E. Borlaug was Director of the Wheat Research and Production Program of the International Maize and Wheat Improvement Center, Mexico, from 1964 until his retirement in 1979.

Dr. Borlaug's career began in 1935 with his service in the U.S. Forest Service, and he subsequently worked as an instructor in plant pathology at the University of Minnesota in 1941, and as a microbiologist with the E. I. Dupont de Nemours & Company, 1942-1944. He also served as research scientists in charge of wheat improvement with the cooperative Mexican Agricultural Program, Mexican Ministry of Agriculture and the Rockefeller Foundation, 1944-1960, and later, as Associate Director of the foundation assigned to the Inter-American Food Crop Program, 1960-1963.

He currently is leader of the Sasakawa-Global-2000 agricultural program in sub-Saharan Africa, Distinguished Professor of International Agriculture at Texas A&M University, and a Senior Consultant to CIMMYT and many other public and private agricultural research and development organizations.

Dr. Borlaug is recognized as the Father of the Green Revolution, and received the Nobel Prize for Peace in 1970.

Dr. Borlaug received his B.S. and M.S. degrees from the University of Minnesota in 1937 and 1941, respectively, and his Ph.D. in plant pathology there in 1942.

Dr. Borlaug's research interests include agricultural development, wheat breeding, agronomy, fertilizers, fungicides, weed killers, plant pathology and forestry.

SOLOMON J. BUCHSBAUM

Solomon J. Buchsbaum has been Senior Vice President, Technology Systems, at AT&T Bell Laboratories since 1979.

Dr. Buchsbaum's early career included work at the MIT Research Laboratory of Electronics. He joined Bell Laboratories in 1958 as a member of the technical staff and later became department head and director of the Electronics Research Laboratory. In 1968, Dr. Buchsbaum was named Vice President for Research at the Sandia Laboratories and served there in a number of capacities. He returned to Bell Laboratories in 1971 as an Executive Director. In 1976, he became Vice President, Network Planning and Customer Systems.

Dr. Buchsbaum has provided advice to both the private and governmental sectors, including service as a member of the President's Science Advisory Council from 1970-1973; as a consultant to the Office of Science and Technology Policy, 1976-1982; and as a member and Chairman, the White House Science Council, 1982-1989. He is a member of the National Academy of Sciences and of the National Academy of Engineering. He was the recipient of the President's National Medal of Science in 1986.

Dr. Buchsbaum received his B.S. and M.Sc. degrees from McGill University, Canada, in 1952 and 1953, respectively, and his Ph.D. in physics from MIT in 1957.

His professional interests include plasma physics, gaseous electronics, plasmas in solids, controlled thermonuclear fusion, optical communications, and communications systems and technologies.

CHARLES L. DRAKE

Charles L. Drake has been the Albert Bradley Professor of Earth Sciences at Dartmouth since 1984 and Professor of Geology since 1969.

Dr. Drake's professional career began at Columbia University in 1953. He joined the staff at Dartmouth College in 1958 where he has continued his career, including service as Professor and Chairman of the Department, 1967-1969; as Dean of Graduate Studies and as Associate Dean of the Science Department, 1978-1981.

He has participated in the work of a number of national and international committees, including serving as President of the Geological Society of America, 1975-1976; and of the American Geophysical Union from 1984-1986.

Dr. Drake is recognized as one of the Nation's most highly respected earth scientists.

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

Dr. Drake received his B.S.E. from Princeton University in 1948 and his Ph.D. in geology from Columbia University in 1958.

His research interests include marine geology and geophysics, tectonics, structural geology, and seismology.

RALPH E. GOMORY

Ralph E. Gomory, until his recent retirement, was Senior Vice President for Science and Technology, IBM Corporation. He now holds the position of President, The Sloan Foundation.

Dr. Gomory's experience include teaching and research at Princeton University, 1957-1959. He joined the Research Division of IBM in 1959 and became Director of the mathematical Sciences Department in 1965. He was made IBM Director of Research in 1970 and held that position until 1985, becoming IBM Vice President in 1973, Senior Vice President in 1985, IBM Senior Vice President for Science and Technology in 1986. He has served in organizations, and he is a member of the National Academy of Sciences and the National Academy of Engineering. He has been awarded a number of honorary degrees and prizes including the John von Neumann Theory Prize in 1984 and the President's National Medal of Science in 1988. He is a member of the National Commission on Superconductivity.

Dr. Gomory received his B.A. degree from Williams College in 1950, studied at Cambridge University and received his Ph.D. in mathematics from Princeton University in 1954.

Dr. Gomory's scientific research interests have included linear and integer programming, network flow theory, nonlinear differential equations and computers. In recent years he has written on the nature of technology and product development, on research in industry and on industrial competitiveness.

MARY LOWE GOOD

Dr. Good is senior vice-president for technology at Allied-Signal Inc. in Morristown, New Jersey. Allied-Signal Inc. is a \$12 billion industrial corporation with sectors in Aerospace, Automotive, and Engineered Materials (chemically based products). Dr. Good has line responsibility for the 500 person Corporate Research and Technology organization and staff responsibility for the company's overall technology portfolio.

He earned her Ph.D. in chemistry at the University of Arkansas in 1955. Before joining Allied-Signal, she was professor of chemistry at the University of New Orleans and Professor of materials science at Louisiana State university, where she achieved the university's highest professional rank, Boyd Professor.

Dr. Good's memberships include the American Chemical Society, the American Institute of Chemists, and the Royal Society of Chemistry. She is active on the boards of directors of such groups as the Industrial Research Institute, Oak Ridge Associated Universities, and the National Institute for Petroleum and Energy Research, and has served on advisory panels for the National Research Council, the National Bureau of Standards, the National Science Foundation Chemistry Section, and the National Institute of Health. She was appointed to the National Science Board by President Carter in 1980 and again by President Reagan in 1986. She currently serves as Chairman of the body.

Her honors include election to membership in the National Academy of Engineering and as a Fellow for the American Association for the Advancement of Science. She received the American Institute of Chemists' Gold Medal and was chosen Scientist of the year by Industrial Research and Development magazine. Dr. Good was appointed as a Foreign Member of the Royal Swedish Academy on Engineering Sciences in 1990, became a member of The Tau Beta Pi Association, was awarded the Charles Lathrop Parsons Award of the American Chemical Society, and received the Industrial Research Institute Medalist Award. She has eleven honorary college degrees and has published over 100 articles in refereed journals. Dr. Good is the author of a book, Integrated Laboratory Science, published by Baner and Noble.

PETER W. LIKINS

Peter W. Likins is President of Lehigh University. His professional career began as a development engineer with the Jet Propulsion Laboratory, California Institute of Technology in 1958. In 1964, he joined the faculty at the University of California, Los Angeles, where in time he became Professor of Engineering and later, Associate Dean. He moved to Columbia University in 1976 as Professor and Dean, serving until 1980, when he became Provost of the University. In 1982, he was named President of Lehigh.

Dr. Likins received his B.S. in civil engineering from Stanford University in 1957, his S.M. in civil engineering from the Massachusetts Institute of Technology in 1958, and his Ph.D. in engineering Mechanics from Stanford University in 1965.

Dr. Likins' research interests include problems of space vehicle dynamics, stability and control.

Dr. Likins has served as a consultant to various industrial and governmental research agencies, and as a member of the Packard-Bromley White House Science Council Panel on the Health of the U.S. Colleges and Universities.

THOMAS E. LOVEJOY

Thomas E. Lovejoy is the Assistant Secretary for External Affairs, The Smithsonian Institution.

His previous experience includes service as a research assistant at the University of Pennsylvania, 1971-74; as Executive Assistant to the Science Director and as Assistant to the Vice President for Resources and Planning of the Academy of Natural Sciences, 1972-73; as the Vice President for Science of the World Wildlife Fund-U.S., 1973-87; and as Executive Vice President, 1985-89.

He is Chairman of the U.S. Man and Biosphere Program and serves on the Executive Committee of SCOPE (Scientific Committee on Problems of the Environment) of the International Council of Scientific Unions. He is also President of the Society for Conservation Biology.

Dr. Lovejoy, on the international level, has focused his attention continuing efforts to retain substantial sections of the Brazilian tropical rain forests.

Dr. Lovejoy received his B.S. degree from Yale College in 1964 and his Ph.D. in biology from Yale University in 1971.

Dr. Lovejoy's research interests include tropical ecology, ornithology, problems of ecology theory relating to conservation, and natural resource management.

JOHN P. McTAGUE

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

In 1983, Dr. McTague was appointed Deputy Director of the Office of Science and Technology Policy (OSTP), becoming Acting Science Advisor to the President and Acting Director of OSTP in 1986. Prior to that, he was Chairman of the National Synchrotron Light Source Department, Brookhaven National Laboratory, 1982-83. He was Professor of Chemistry and a member of the Institute of Geophysics and Planetary Physics, University of California, Los Angeles, 1970-82. He began his professional career as a member of the Technical Staff, North American Aviation Science Center, 1964-70.

Dr. McTague is a physical chemist with a B.S. degree from Georgetown University, 1960, and a Ph.D. from Brown University, 1965. He is U.S. Chairman of the U.S.-Japan Joint High Level Advisory Panel on cooperation in Research and Development in Science and Technology, and serves on the Naval Research Advisory Committee and the Board of Visitors of the National Institute of Standards and Technology. His board memberships include Ford Aerospace Corporation, Argonne National Laboratory, and the Metropolitan Center for High Technology.

THOMAS J. MURRIN

Thomas J. Murrin was named Dean of Duquesne University's School of Business and Administration; effective January, 1991 – after serving for 18 months as Deputy Secretary of the U.S. Department of Commerce; nominated by President George Bush and confirmed by the U.S. Senate.

At the Department of Commerce – with its approximately 40,000 people and an annual budget of about \$3 billion – Mr. Murrin was deeply involved in a variety of executive activities including the 1990 Decennial Census; the Malcolm Baldrige National Quality Award; the Modernization of the National Weather Service; the new Advanced Technology Program; oversight of the Patent and Trademark Office; and – through the International Trade Administration and the Export Administration – important relations with dozens of nations around the world.

Mr. Murrin retired in 1987 as president of the Westinghouse's Energy and Advanced Technology Group – an organization with nearly \$5 billion in annual sales. He was a member of the Westinghouse Management Committee – the top policymaking body of the corporation – from 1974 until his retirement.

Building on his extensive foreign travel and study of industrial operations overseas, Mr. Murrin served as a U.S. delegate to the NATO Industrial Advisory Group; headquarters in Brussels, Belgium. He was a member of the Defense Policy Advisory Committee on Trade (DPACT) of the Department of Defense and served as Chairman of DPACT's Subcommittee on Trade Relations with Japan.

Mr. Murrin's honors include: Order of Merit, Westinghouse Electric Corporation (1968); Annual Achievement Award in Business, Fordham University (1976); National Leadership Award, American Productivity Center (1981); James Forrestal Memorial Award, National Security Industrial Association (1983); Election to the National Academy of Engineering (1985); Manufacturing Management Award of the Society of Manufacturing Engineers (1986); Hall of Fame, Cardinal Hayes High School (1988); Honorary Degree of Doctor of Management Science, Duquesne University (1989); and Excellence in Manufacturing Award, National Security Industrial Association (1989).

DANIEL NATHANS

Daniel Nathans is Professor of Molecular Biology and Genetics at The Johns Hopkins University Medical School and Senior Investigator of the Howard Hughes Medical Institute.

Dr. Nathans received his B.S. degree from the University of Delaware in 1950 and his M.D. from Washington University in 1954.

He served as Medical Resident at the Columbia-Presbyterial Medical Center in New York 1955, 1957-59; as Clinical Associate at the National Cancer Institute, 1955-57; and, Guest Investigator in biochemistry at the Rockefeller University, 1959-62.

Since 1962, he has been on the faculty of the Johns Hopkins University Medical School.

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

His major research interest is the molecular biology of cell growth and cancer.

DAVID PACKARD

David Packard has been Chairman of the Board of the Hewlett-Packard Co. since 1972.

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

Mr. Packard has been a member, as well as chairman, of a number of boards and commissions, including the U.S.-Japan Advisory Commission, 1983-85; the U.S.-U.S.S.R. Trade and Economic Council's Committee on Science and Technology, 1975-82; the President's Blue Ribbon Commission on Defense Management, 1985-86; and the White House Science Council, 1982-89. He has been a member of the Business Council since 1963, and a founding member of the Business Roundtable.

Mr. Packard, who is a member of the National Academy of Engineering, received the Vannevar Bush Award of the National Science Board in 1987, the President's National Medal of Technology and the Presidential Medal of Freedom in 1988.

Mr. Packard received his B.A. and B.S.E.E. degrees from Stanford University in 1934 and 1939, respectively.

HAROLD T. SHAPIRO

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

Dr. Shapiro's previous academic experience has been with the University of Michigan, first as an Assistant Professor of Economics in 1964. His career progressed from Associate Professor, 1967-70; Professor, 1970-76; Chairman of the Department of Economics, 1974-77; Professor of Economics and Public Policy, 1977; Vice President for Academic Affairs, 1977-79; and he was named President in 1980, the position he held until 1987.

Dr. Shapiro has served as a member of several industrial, governmental and academic boards and commissions, and has participated actively in many science- and technology-related studies.

Dr. Shapiro received his B. Comm. degree from McGill University, Canada, in 1956 and his Ph.D. in economics from Princeton University in 1964.

Dr. Shapiro, who is an economist, has research interests that encompass the relationship of science and technology to innovation, and economic forecasting and policy analysis.

THE PRESIDENT'S COUNCIL OF ADVISORS
ON SCIENCE AND TECHNOLOGY

Panels

High Performance Computing and Communications

Solomon Buchsbaum, Chairman
Ralph Gomory, Vice Chairman

International Economic Competitiveness

Ralph Gomory, Chairman
Harold Shapiro, Vice Chairman
Thomas J. Murrin, Council Member

Bioscience and Biotechnology

Dan Nathans, Chairman
Norman Borlaug, Council Member

Education and Human Resources

Peter Likins, Co-chairman
Charles Drake, Co-chairman

Science, Technology, and National Security

Solomon Buchsbaum, Co-chairman
John S. Foster *, Co-chairman
David Packard, Council Member
Thomas J. Murrin, Council Member

Global Environment and Natural Resources

Thomas Lovejoy, Chairman
Norman Borlaug, Council Member
David Packard, Council Member

Megaprojects in the Sciences

John McTague, Chairman
Harold Shapiro, Vice Chairman

* *Chairman, Defense Science Board*