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FCCSET [Federal Coordinating Council for Science, Engineering, and Technology] 1990-1992 [2]

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FCCSET

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

14 Aug 90

Rich,

Attached FYI.

Tom Welch

Summary of Talking Points on CTI by Deputy Secretary Murrin, at FCCSET Meeting, July 31, 1990

A. CTI Charter. The CTI approved its charter on July 27, after discussion and modifications. While the charter's functions are broad, CTI intends to focus on 3 or 4 key areas.

B. CTI Membership. The CTI has a full membership list. A new member, State Department, has been added and incorporated into the charter.

C. Planned Activities and Subcommittee Structure

1. At the July 27 CTI meeting, the CTI approved the major project on the Inventory of Federal technology efforts in the context of critical technologies. A subgroup is being formed. This 'centerpiece' project fits in well with a majority of the numerous initiatives suggested by CTI members. It is possible that task forces could be formed to address discrete aspects of this project. For example, in partial response to the recent OTA report, Helping America Compete: The Role of Federal Scientific and Technical Information, (STI) a task force could be formed to incorporate STI into the "Inventory" project.

2. CTI will continue with the COMAT (Committee on Materials) crosscut on materials research and development -- due July 1991. CTI will review other COMAT activities in the next few months in order to determine whether there are additional promising projects for CTI/COMAT attention.

3. CTI representatives will flesh out additional initiatives; a few of these may have subcommittees or task forces established by CTI.

4. An effort will be made to limit the number of CTI projects.

Tom Welch

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

August 9, 1990

MEMORANDUM FOR D. ALLAN BROMLEY

THROUGH: MICHELLE K. VAN CLEAVE mkvc

FROM: RICK E. YANNUZZI REY

SUBJECT: PROPOSED AMENDMENT TO THE DEFENSE PRODUCTION ACT

At about the time of the Senate Select Committee on Intelligence (SSCI) hearing at which you testified, the Senate Banking Committee was apparently drafting amendments to the Defense Production Act which should be of interest to OSTP.

The proposed legislation requires the CIA and FBI to furnish a report to Congress within one year and every four years thereafter which:

> (1) evaluates whether there is credible evidence of a coordinated strategy by one or more countries or companies to acquire U.S. companies involved in research, development, or production of **critical technologies** for which the U.S. is a leading producer; and
>
> (2) evaluates whether there are industrial espionage activities directed by foreign governments against private U.S. companies aimed at obtaining commercial secrets related to **critical technologies.**

The amendment defines critical technologies as those identified under Title VI of the National Science and Technology Policy Act of 1976. This is presumably in reference to those technologies which the National Critical Technologies Panel will identify.

Of additional interest to OSTP is the fact that the proposed amendment stipulates that an unclassified version of the report shall be made available to the public.

Attachment: Proposed Amendment

cc: William D. Phillips
Eugene Wong
J. Thomas Ratchford
Ronald E. York
Sara Bowden
John F. O'Neil
Thomas J. Welch

the course of action, but not later than 4 years from the date the cause of action arises.

''(6) In any action brought under this subsection, if the court finds that the challenged conduct was undertaken by the industry consortium within the scope and limitations of its charter and the requirements of this section and that the action was brought for purposes of harassment or was otherwise without merit, the court may award to the person against whom the action is brought all costs of defending such action (including reasonable attorney's fees).''.

SEC. 138. INTELLIGENCE STUDY.

(a) IN GENERAL.—In order to assist the Congress in its oversight responsibilities with respect to section 721 of the Defense Production Act of 1950 (50 U.S.C. App. 2170), the Central Intelligence Agency jointly with the Federal Bureau of Investigation shall complete and furnish to the Congress within one year after the date of enactment of this section and upon the expiration of every 4 years thereafter a report which—

(1) evaluates whether there is credible evidence of a coordinated strategy by one or more countries or companies to acquire United States companies involved in research, development, or production of

critical technologies for which the United States is a leading producer; and

(2) evaluates whether there are industrial espionage activities directed by foreign governments against private United States companies aimed at obtaining commercial secrets related to critical technologies;

(b) DEFINITION.—For purposes of this section, the term "critical technologies" means technologies identified under title VI of the National Science and Technology Policy, Organization, and Priorities Act of 1976 or other critical technology, critical components, or critical technology items essential to national defense identified pursuant to section 705A of the Defense Production Act.

(c) RELEASE OF UNCLASSIFIED STUDY.—The report required by this section may be classified. An unclassified version of the report shall be available to the public.

SEC. 139. EXEMPTION FROM ADMINISTRATIVE PROCEDURE ACT.

Section 709 of the Defense Production Act of 1950 (50 U.S.C. App. 2159) is amended to read as follows:

"SEC. 709. EXEMPTION FROM ADMINISTRATIVE PROCEDURE ACT.

"Any rule, regulation, order, or amendment thereto issued under the authority of this Act shall not be subject to the requirements of sections 551 through 559 of title 5, United States Code. Each proposed rule or regulation, and

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RECORD ID: 9005880
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TO: SCOWCROFT

URGENT

FROM: BROMLEY, D

DOC DATE: 20 JUL 90
SOURCE REF:

KEYWORDS: SCIENTIFIC ANSA

file FCCSET

PERSONS:

SUBJECT: BACKGROUND INFO ON PRES COUN OF ADVISORS ON SCIENCE & TECHNOLOGY / PCAST

ACTION: PREPARE MEMO FOR SCOWCROFT DUE DATE: 24 JUL 90 STATUS: S

STAFF OFFICER: HUTCHINGS LOGREF:

FILES: WH NSCP: CODES:

D O C U M E N T D I S T R I B U T I O N

FOR ACTION	FOR CONCURRENCE	FOR INFO
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COMMENTS: ** INFORMATION FOR MTG ON 26 JUL **

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THE WHITE HOUSE

WASHINGTON

URGENT STAFFING - HATCHINGS

July 20, 1990

MEMORANDUM FOR GENERAL SCOWCROFT

FROM: D. ALLAN BROMLEY DAB

SUBJECT: Background Information on the President's Council of Advisors on Science and Technology (PCAST)

I am pleased to provide you, in advance of your meeting with the PCAST on Thursday afternoon, July 26th, at 2:15 p.m. in the Cordell Hull Conference Room, background information on the PCAST.

I am sending you the following: a draft agenda for PCAST's July 26-27 meetings, a listing of the members of the PCAST with biographical statements, the minutes of the February, March and May PCAST meetings, and the Executive Order establishing the PCAST.

Please call me if you have any questions prior to Thursday.

Attachments

D R A F T

PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY

JULY 26-27, 1990

AGENDA

THURSDAY, JULY 26, 1990

OPEN SESSION, 8:50 - 11:15 a.m.
CONFERENCE ROOM, COUNCIL ON ENVIRONMENTAL QUALITY
722 JACKSON PLACE, N.W.

8:30-8:50	ARRIVAL -- COFFEE AND PASTRIES	
8:50-9:00	OPENING REMARKS	DR. BROMLEY
9:00-10:00	ENVIRONMENTAL QUALITY: TWENTIETH ANNUAL REPORT OF CEQ	HON. MICHAEL DELAND
10:00-11:00	GLOBAL CHANGE - CEES UPDATE BRIEFING AND DISCUSSION	DR. ROBERT CORELL
11:00-11:10	CLOSING REMARKS	DR. BROMLEY

THURSDAY, JULY 26, 1990 continued

CLOSED SESSION, 12:00 Noon - 5:00 p.m.

ROOM 208, CORDELL HULL CONFERENCE ROOM
OLD EXECUTIVE OFFICE BUILDING

12:00-2:15	PCAST UPDATE DURING WORKING LUNCH	DR. BROMLEY OSTP ASSOC. DIRECTORS
2:15-3:00	INITIATIVES IN EASTERN EUROPE	LTG. BRENT SCOWCROFT
3:00-3:30	THE VICE PRESIDENT	
3:30-3:45	BREAK	
3:45-4:45	EDUCATION AND HUMAN RESOURCES PANEL -- DISCUSSION OF ISSUES AND DIRECTION	DR. LIKINS DR. RATCHFORD
4:45-5:00	CLOSING REMARKS	DR. BROMLEY
6:30	DINNER HOSTED BY THE INDUSTRIAL RESEARCH INSTITUTE at La Chaumiere 2813 M Street, N.W. (Georgetown)	

FRIDAY, JULY 27, 1990

CLOSED SESSION, 9:00 A.M. - 12:00 NOON
ROOSEVELT ROOM, THE WHITE HOUSE

9:00-10:00	THE ROLE OF SCIENCE AND TECHNOLOGY IN U.S. ECONOMIC POLICY	DR. MICHAEL BOSKIN
10:00-10:30	DISCUSSION	
10:30-11:30	RECRUITMENT FOR FEDERAL SERVICE -- INFORMATION BRIEFING AND DISCUSSION	DR. MARY GOOD CHAIRMAN, NATIONAL SCIENCE BOARD (201) 455-4729 FAX: (202) 455-2956
11:30-11:45	OTHER PCAST ISSUES	
11:45-12:00	THE NEXT MEETING AND CLOSING REMARKS	DR. BROMLEY

D R A F T

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

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

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

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

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

RALPH E. GOMORY, President, The Alfred P. Sloan Foundation

BERNADINE P. HEALY, Chairman of the Research Institute, The Cleveland Clinic Foundation (**Vice-Chairman**)

PETER W. LIKINS, President, Lehigh University

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

WALTER E. MASSEY, Vice President for Research and for Argonne National Laboratory, University of Chicago

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

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

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

HAROLD T. SHAPIRO, President, Princeton University

PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY

NORMAN E. BORLAUG

Nobel Laureate Borlaug is currently leader of the Sasakawa-Global-2000 agricultural program in sub-Saharan Africa, Distinguished Professor of International Agriculture at Texas A&M University, and a Senior Consultant to CIMMYT.

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

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

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. After receiving his Ph.D. in physics from the Massachusetts Institute of Technology in 1957, he joined Bell Laboratories in 1958 as a member of the technical staff and later became department head and director of the Electronics Research Laboratory. In 1968, Dr. Buchsbaum was named Vice President for Research at the Sandia Laboratories and served there in a number of different capacities. He returned to Bell Laboratories in 1971 as an Executive Director. In 1976 he became Vice President, Network Planning and Customer Systems.

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

CHARLES L. DRAKE

Charles L. Drake 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. After receiving his Ph.D. in geology from Columbia University, he joined the staff at Dartmouth College, where he has continued his career, including service as Professor and Chairman of the Department, 1967-69; as Dean of Graduate Studies and as Associate Dean of the Science Department, 1978-81.

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

RALPH E. GOMORY

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

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

BERNADINE HEALY, VICE CHAIRMAN

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

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

PETER W. LIKINS

Peter W. Likins 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. Dr. Likins received his Ph.D. in engineering mechanics from Stanford in 1965. In 1976 he became Professor and Dean of Columbia University, serving until 1980, when he became Provost of the University. In 1982 he was named President of Lehigh.

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, after receiving his Ph.D. in biology from Yale University in 1971; as Executive Assistant to the Science Director and as Assistant to the Vice President for Resources and Planning of the Academy of Natural Sciences, 1972-73; as the Vice President for Science of the World Wildlife Fund-U.S., 1973-87; and as Executive Vice President, 1985-89.

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

WALTER E. MASSEY

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

Dr. Massey previously served as a physics instructor at Morehouse College, 1958-59; and after receiving his Ph.D. in physics from Washington University in 1966, as a staff physicist with the Argonne National Laboratory until 1968; as Assistant Professor of Physics, University of Illinois, Urbana, 1968-70; Associate Professor of Physics and Dean of the College, Brown University, 1975-79.

He is Vice President, and President-elect of the American Physical Society and is the Past President and Chairman of the American Association for the Advancement of Science.

JOHN P. MCTAGUE

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

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

DANIEL NATHANS

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

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

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

DAVID PACKARD

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

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

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

HAROLD T. SHAPIRO

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

Dr. Shapiro's previous academic experience has been with the University of Michigan, first after receiving his Ph.D. in economics from Princeton University in 1964, 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.

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

MINUTES

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

FEBRUARY 3, 1990

CAMP DAVID, MARYLAND

10:30 A.M. - 1:00 P.M.

CLOSED SESSION

PCAST Members Attending: Dr. Norman Borlaug; Dr. Solomon Buchsbaum; Dr. Charles Drake; Dr. Ralph Gomory; Dr. Bernadine Healy; Dr. Peter Likins; Dr. Thomas Lovejoy; Dr. Walter Massey; Dr. John McTague; Dr. Daniel Nathans; Mr. David Packard; Dr. Harold Shapiro.

Government Attendees: President George Bush; Mr. John Sununu, Chief of Staff and Assistant to the President; Mr. Richard Darman, Director of the Office of Management and Budget; Dr. Michael Boskin, Chairman of the Council of Economic Advisers; Mr. Michael Deland, Chairman of the Council on Environmental Quality; Dr. D. Allan Bromley, Assistant to the President for Science and Technology, and Chairman of PCAST.

The meeting began with an introduction by Dr. Bromley, followed by brief opening remarks by the President. The President stressed the importance of science and technology to the nation and his desire to have a strong science advising mechanism. Dr. Bromley then introduced each member of the PCAST and asked them to briefly comment on some of the issues that they saw as important to American science and technology.

The introductions were followed by a discussion of three specific topics of particular interest to the President.

1. Science and technology and economic growth: The importance of science and technology to the economic strength and growth of the country, as well as to social welfare, was discussed at length. Issues covered included innovation in manufacturing technology; examples of successful translation of scientific developments to economic good, such as the semiconductor industry and biotechnology; the impact of the variety of federal policies on the R&D base; and the role of government laboratories and research-intensive universities in the innovation process.

2. Mathematics and science education: The President expressed great concerns about education in mathematics and science. The need for a well-educated work force, well-grounded in analytical and logical capabilities developed through mathematics and scientific training was stressed by several members of PCAST. Also discussed was the importance of maintaining a talent base of scientists and engineers,

who make the discoveries in the basic research laboratories and serve as major agents of technology transfer. Concerns were expressed about a declining interest in careers in science and technology, including biology and medicine, and some of the factors that may be contributing to this declining interest. Although it was recognized that a number of specific programs are being undertaken by the federal government, particularly within the National Science Foundation and the Department of Education, it was also noted that Mr. Bush's identification of education as a presidential issue elevated its importance and visibility at a broad national level.

3. Environmental science and global change: The President expressed his concern about the environment and the issue of global change. Uncertainties regarding the extent and the timing of possible future climate changes, as well as some of the reasons for the diversity of opinion among the scientific community on the magnitude of the problem at the present time, were discussed. Comments were made about the models that are the basis of many of the predictions, the need for further research and direct data acquisition. Other aspects of global change, such as the problems of biological diversity were mentioned. The kinds of action that might be taken to address these problems, on a national and multinational basis, will require considerable and careful evaluation.

Finally, there was a general discussion on science advising to the President and the importance of a mechanism for coordination of science and technology initiatives and policies across the many government agencies involved in science. The role of Dr. Bromley and the members of PCAST in this process were commented upon.

The President adjourned the meeting at approximately 1:30 p.m.

Minutes Approved: D. Allan Bromley

Date: May 9, 1990

MINUTES

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

MARCH 22-23, 1990

WASHINGTON, D.C.

PCAST Members Attending: Dr. Allan Bromley; Dr. Bernadine Healy; Dr. Solomon Buchsbaum; Dr. Charles Drake; Dr. Ralph Gomory; Dr. Peter Likins; Dr. Thomas Lovejoy; Dr. Walter Massey; Dr. John McTague; Dr. Daniel Nathans; Mr. David Packard.

Government Attendees: President George Bush; Gov. John Sununu; Mr. Richard Darman.

OSTP Staff: Dr. William Phillips; Dr. Thomas Ratchford; Dr. Eugene Wong; Dr. James Wyngaarden; Dr. Judith Bostock; Dr. Karl Erb; Dr. Nancy Maynard; Ms. Michelle Van Cleave.

Department of Defense: Honorable Don Atwood

CIA Staff: Dr. Gordon Oehler; Dr. John Weiss

Public: Approximately 10 people attended the open session.

1. The meeting agenda is at Enclosure 1.

Open Session: 9:00 A.M. - 12:00 NOON, MARCH 22, 1990

2a. Dr. Bromley called the meeting to order and made introductory remarks. He noted that selected OSTP speeches and testimony, biographical material for presenters, and other information were available to those attending.

b. Dr. Bromley briefly discussed the need of the science and technology (S&T) community to get behind the President's S&T budget submission. He also pointed to the future need of achieving the best possible balance between very large S&T projects and small S&T investigators. He sketched the status of the revitalization of the Federal Coordinating Council for Science, Engineering and Technology (FCCSET). Dr. Bromley noted that PCAST, where appropriate, may want to parallel certain FCCSET efforts.

c. Dr. Bromley discussed the upcoming White House Conference on "Science and Economics Research Related to Global Change." A brief discussion on this followed.

d. Drs. Wong and Phillips were then introduced to the PCAST and other attendees.

3. Dr. Wong presented a briefing on High Performance Computing (HPC). (His viewgraphs and papers that he circulated to PCAST members are at Enclosure 2).

a. Dr. Buchsbaum noted the importance of standards in HPC. A discussion on this followed.

b. Dr. Bromley noted the importance of involving schools in HPC in order to meet the President's education goals. He noted the President would like to hear from the PCAST on HPC. All agreed that computer education and education in areas using or related to computers need emphasis. Dr. Gomory stressed that the need involves all levels of education, including technical schools. Dr. Likins pointed out that business majors and others are important users of computers. Dr. Healy said that here is an issue that might gain good response if portrayed to students as a "grand challenge."

Dr. Massey said that first year business students might use computers more than first year physics students use them.

c. Dr. Bromley concluded this HPC session by asking the members for comments, especially those pertaining to the need for a PCAST HPC panel. A discussion followed, and agreement was reached on recommending establishment of a panel.

4. Dr. Phillips then presented a briefing on Materials Science and Engineering (his viewgraphs are attached as Enclosure 3). Dr. Gomory stated the need for industry to make its needs known before proceeding. Dr. Likins noted that high school teachers and counselors do not see materials as an area of study. Dr. Healy pointed out the importance of biomaterials. More discussion followed.

5. Dr. Bromley departed for a noontime presentation, and Dr. Healy assumed the chairman's duties. After a discussion, all agreed that PCAST and FCCSET work in materials science and engineering was needed.

Closed Session: 1:00 P.M. - 5:00 P.M., MARCH 22, 1990

6a. PCAST panel structure and personnel to serve on the panels were discussed at length.

b. Preparations were made for the PCAST session with the President (see below).

c. Drs. Oehler and Weiss, Central Intelligence Agency, then presented a briefing. A discussion followed.

Closed Session: 9:00 A.M. - 12:00 NOON, MARCH 23, 1990

7a. Deputy Secretary of Defense Don Atwood presented the DoD's future R&D plans and budget required to meet expected threats to national security. He described the probable threats over the next decade and pointed out the importance of a strong S&T program. A discussion followed including DoD's view of increased funding for universities and dual-use technologies.

b. Mr. Atwood and the members discussed the China Lake experiment and the future of the DoD laboratory system.

c. Following Mr. Atwood's departure, a discussion began on the role of Federal agencies in mathematics and science education. All agreed that M&S education should be part of all panel work and that all panel draft terms of reference should be "scrubbed" to be certain education is addressed. Dr. Bromley noted the decreasing percentage of NSF and NIH grant applicants that are supported.

d. Dr. Bromley next led a discussion of PCAST panel structure and the persons who might best serve on those panels. He commented on parallel work underway in FCCSET.

e. Dr. Bromley led a discussion on agenda issues for future meetings. He called on all to think about long-term needs that PCAST could address. Dr. Healy suggested a PCAST panel could be helpful in the problem of drug abuse. Dr. Bromley stated his intention to have cabinet secretaries and heads of agencies address future PCAST meetings.

8a. President Bush arrived and greeted the PCAST. He recounted the Camp David PCAST meeting. Dr. Bromley recalled the President's interest in education and human resources, global warming and the environment, and the impact of science and technology on economic well-being. Some of the members told the President they were pleased to read his position on supporting generic and pre-competitive technologies.

b. Dr. Bromley asked Dr. Gomory to lead a discussion in areas where the President had indicated an interest. One issue was materials science and technology, and Dr. McTague carried this topic further. Dr. Buchsbaum presented PCAST views on high performance computing and communications. The President asked about the issue of networking, and Drs. Buchsbaum and Gomory responded.

c. Dr. Gomory then asked Dr. Massey to present PCAST views on mathematics and science (M&S) education. Dr. Massey congratulated the President on his

education goals. He underlined the importance of improving M&S education across the board. Dr. Massey pointed out the contribution of science and technology to existing industries. He noted that PCAST believes there is a special need for science and technology to support manufacturing processes. Mr. Packard stressed the need to see science and technology as long-term efforts if they are to be helpful to industry.

d. The President asked Mr. Darman to comment. Mr. Darman said he would greatly value the advice of the PCAST while he was in OMB. He discussed the S&T areas of agreement with Dr. Bromley and Gov. Sununu.

9. Dr. Bromley closed the meeting at 12:00 noon.

Minutes Approved: D. Allan Bromley

Date: May 9, 1990

MINUTES

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

MAY 24-25, 1990

WASHINGTON, D.C.

PCAST Members Attending: Dr. Allen Bromley; Dr. Bernadine Healy; Dr. Solomon Buchsbaum; Dr. Charles Drake; Dr. Ralph Gomory; Dr. Peter Likins; Dr. Thomas Lovejoy; Dr. Walter Massey; Dr. Daniel Nathans; Mr. David Packard; Dr. Harold Shapiro.

OSTP Staff: Dr. William Phillips; Dr. Thomas Ratchford; Dr. Eugene Wong; Dr. James Wyngaarden; Dr. Judith Bostock; Dr. Karl Erb; Ms. Sarah Keegan; Dr. Nancy Maynard; Dr. Diane Weiss.

Department of Commerce: Honorable Thomas Murrin

Public: Approximately 20 people attended the open session.

1. The meeting agenda is at Enclosure 1.

Open Session 9:00 A.M. - 12:00 Noon, May 24, 1990

2. Dr. Bromley called the meeting to order and made introductory remarks. He noted that the Federal Coordinating Council for Science, Engineering and Technology was making progress in organizing its work. He said that he had met on May 23, 1990 with the FCCSET committee chairmen and vice chairmen. The committee charters are nearing completion. Three committees plan to produce reports in time for the FY1991 budget cycle. The reports will address: Global Change; High Performance Computing and Communications; and, Math and Science Education. There is considerable legislative interest in the output of the committees with several members calling specifically in draft legislation for FCCSET products. Dr. Bromley further noted that PCAST was an important channel for private sector interface with FCCSET.

3. Dr. Bromley then turned to the first agenda item: an information briefing on International Economic Competition. He introduced the topic by noting that much progress in this area had already been made within the government. He further noted that it would be important to hear from PCAST. Since the area is so broad, it was important first to look at the whole spectrum and then concentrate on a few select areas. He then introduced Dr. Gomory to present the briefing.

a. Dr. Gomory reinforced Dr Bromley's remarks. He said it was important that, in the initial stages of discussion, the Councils should be open to discussion of any of the areas affecting international economic competition. Later, when choosing areas for actual work, the Council could be more selective.. He then introduced Dr. Phillips who made a presentation based on the charts

at Enclosure 2.

b. On the subject of trade imbalances, Dr. Massey questioned whether it was desirable to have surpluses everywhere. Dr. Shapiro commented that a balance of surpluses and deficits is necessary to assure continuance of world trade. Dr. Gomory noted that some people think there is a problem with trade imbalances while others do not.

c. Dr. Gomory noted that in dealing with the area of international economic competition, Product competitiveness rather than basic science competitiveness is to be emphasized.

d. In discussing the elements of competitiveness, Dr. Bromley noted the supremacy of individual companies' capability to take advantage of opportunities. He recommended Michael Porter's book on the subject "The Competitive Advantage of Nations." Dr. Gomory agreed but feels that what government can do to help is centered in other areas.

e. Dr. Bromley asked whether there was undue focus on new discoveries to the neglect of evolutionary development. Mr. Packard thought not. Dr. Gomory said few firms concentrate on breakthroughs. Mr. Packard noted that takeover concerns acted to drive firms to short term focus. Dr. Lovejoy noted that the short term focus has environmental impact.

f. Dr. Bromley asked how important were amortization rules. Dr. Shapiro indicated that they were extremely important. Dr. Wong noted that it is difficult to maintain intellectual property protection. Dr. Shapiro stated that we should focus on differences between US policies and our competitors.

g. Dr. Bromley asked about the importance of patents. Mr. Packard said it is the quality of patents that is important. He suggested that patents should be broken down by industry. Dr. Gomory agreed that we need a better measure of innovation than number of patents.

h. Dr. Bromley said that an emerging technical report from the Department of Commerce indicates that we are on a negative trend line on breakthrough technologies. He introduced Secretary of Commerce Murrin who noted that the NIST developed report reflected a good interface with industry. Secretary Murrin further noted that PCAST was uniquely qualified to influence the situation.

i. Mr. Packard noted that the predominance of financiers as heads of firms creates a problem for innovation.

j. Dr. Massey asked if "environment" meant global environment with regard to availability of new scientific and engineering knowledge. Dr. Gomory said yes, that the focus was on capturing it for national advantage. Dr. Buchsbaum thought new knowledge was readily available. Dr. Likins noted that competitive comes with

time -- getting there first. There is a need to keep some new knowledge in house to maintain competitive edge. Dr. Shapiro stated that many trading partners have different research sociologies. We must decide whether we are in a better position or not, that answer leading on to policy development. Dr. Massey noted that the question also considered how to insure that US companies take advantage of new technologies -- sometimes offered but not taken.

k. On environment supportive to improvement of existing product, the discussion reflected on the comparison with Japan. Dr. Likins said that process improvement is as important as product improvement. Dr. Gomory said the federal government should honor excellence in manufacturing.

l. With regard to training of the technical labor force, Dr. Bromley asked the panel to consider how to correct the lack of technical competence in the middle sector. What is the right place to train people to mae us production competitive. Mr. Packard reiterated his concern over the flow of business graduates to the financial area for greater pay. The reward structure needs to be corrected. He suggested that government could move more prominent people in education, provide better research facilities and add additional incentives for young people to enter science and technological fields. Dr. Buchsbaum noted that the ration of engineers to production people on the floor in Japan is about 3 to 1 that in the US. Secretary Murrin added that not only are there many more technical people at operating level in Japan but that they are multi-talented, i.e. can do maintenance, operations, programming. Dr. Likins said high school curricula can influence the situation by eliminating the "general" track and increasing the importance of the vocational track. Dr. Gomory noted that government's ability to educate and to influence public opinion in this area was extremely important.

m. Dr. Phillips reviewed the administration's competitiveness initiatives in the FY91 budget. Mr. Packard noted a need to increase the tax on short term capital gains to deter opportunists. He also underscored the importance of reforming product liability laws, removing barriers to research and innovative development, and developing advanced technologies to meet civil and government needs. Secretary Murrin noted the difficulty of influencing the situation in the short term. The time factor associated with getting legislation through Congress was too great. Mr.Packard asked how any of these initiatives would help in competition with the Japanese or Europeans. Dr. Shapiro answered that they were part of many things we must do. Dr. Bromley noted that EC 92 actions were also important and that the focus should not be only on Japan. Dr. Likins pointed out that increases in research were good but follow through was also important.

n. Dr. Bromley asked if the Council would feel comfortable offering an opinion to the President on alternative energy technologies. There was general agreement from the members.

o. Dr. Borlaug asked how important was metric conversion to competition. Secretary Murrin answered that it was a big issue which needs more work.

p. Dr. Massey said the council should consider how to increase interaction between universities, labs and industry. There is a need to watch laws that inhibit transfer.

q. In discussing possible PCAST initiatives in this area, Mr. Packard commented that the US leadership position could not be restored. He suggested an initiative to better prepare our young people for working in and with other countries. Dr. Borlaug noted the effectiveness of the Peace Corps in this area. Dr. Shapiro stated the need to focus on leadership, wage rates and worker quality of life -- the market would force the trade balance. Dr. Healy stressed the need to make any initiative nation wide and to maintain the federal partnership with state and local government. Dr. Bromley noted that with regard to improving access to what is happening abroad, the Swedes and the French make much better use of their embassies and consulates than we do. President Reagan's initiative to put additional technologists into US embassies has not been fully implemented. More needs to be done to convince the State Department to improve our marketing capabilities.

4. After a short break, the PCAST turned to the next agenda item, and information briefing on Global Environment and Natural Resources. Dr Lovejoy introduced the topic by distributing an article, "The Biological Diversity Crisis: A Challenge to Science." (Enclosure 3). He noted that the article described the significance of loss biological species in the context of loss of knowledge. Over two tenths of one percent of all species are lost each year. The challenge for the US is how to arrest the loss of resources or develop the knowledge to do so. The US is the country most concerned with biodiversity. There are serious questions about the ability of tropical rain forest countries to set aside areas for preservation. It is an economic issue. Some progress has been made in terms of debt for nature swaps, most of which have been privately funded.

a. Dr Likins raised the issue of the controversy surrounding the construction of a new observatory which imperiled a species of squirrel. He asked how one makes such trade offs. Dr Lovejoy responded that the particular issue concerned unique biosystems on mountain tops -- "mountain top Gallapagos islands". He noted that the issue was not whether to build but how and how much. The issue could have been avoided altogether had sufficient planning and inventory been done before the fact.

b. Dr Nancy Maynard of OSTP made a presentation using the slides at enclosure 4. She read the prologue from the National Science Board report, "Loss of Biological Diversity: A Global Crisis Requiring International Solutions."

c. In the discussion surrounding the issue of inventories,

Dr Lovejoy noted that such inventories provide the opportunity to avoid conflicts. Dr Shapiro stated that in the loss of biodiversity, we lose the understanding of how living systems are organized as well as the direct benefits of those systems. Dr Lovejoy pointed out that we also lose the functions of the systems and the ability to study indicators of biological stress.

d. Dr Borlaug noted that changes in the rate of loss of species have been occurring over time. Dr Lovejoy said the rate is increasing rapidly -- 1000 times the norm. Dr Gomory asked if more people were needed in this field. Mr. Packard asked how important is the past -- is this a new situation? Dr Nathans asked how much work was being done with DNA to characterize species. Dr Borlaug said that collections are being made of the most important food crops -- germ plasms. He noted that the problem was much more difficult with animal species. He felt that the real problem with loss of species was human population pressure. Dr Maynard underscored the importance of the losses noting that adaptation was dependent on the availability of a large gene pool.

e. Dr Bromley stated that PCAST should be able to address this issue. Many issues are related to population growth. From the scientific or technical point of view, PCAST can make an assessment of where we are or where we can go. Dr Borlaug cited the example of Mexico where the population had increased from 22 to 83 million since 1944. Dr Nathans agreed that the issue was worth following and asked if PCAST should have a panel on the subject. Dr Bromley suggested that the PCAST should defer how to respond until it has a better scientific assessment of the problem. Dr Borlaug noted that there were also food, education, and public health elements to the problem. Dr Bromley suggested that it could be called a Population Resource Issue. Mr. Packard suggested that the issue needed to be narrowed to focus on an area where something could be done quickly. It was generally agreed that consideration should be limited to the broader issues.

f. Dr. Massey stated that population control was also an education issue. Dr Borlaug said that it should be considered at grade school level. Dr Likins noted that the issue was covered only in the most general terms in the AAAS Project 2061. Several members noted that it had become increasingly difficult to discuss population control due to the sensitivity of related issues. Dr Lovejoy reaffirmed the need to consider it in science education.

g. At this point, Dr Bromley recessed the PCAST for the lunch break.

h. The PCAST reconvened in closed session at the Old Executive Office Building.

c. Dr Maynard continued with the conclusion of her presentation which began in open session. She summarized the work of the FCCSET Committee on Earth and Environmental Sciences and noted the need for an appropriate interface with industry. Tasks include defining the interface between government efforts and

PCAST, and defining "private sector" i.e. does it include government funded academia? Dr Shapiro noted that it is difficult to distinguish between privately financed and publicly financed initiatives. Dr Bromley said that previous attempts to do so had not been successful. It is important to know what is being done before investing more. Dr Drake stated that it may be best to start with the trade associations. Dr Bromley said PCAST should start on an ad hoc basis by inviting a group to discuss how to approach the problem. Dr Maynard noted that the President's upcoming trip to Brazil offered an opportunity to do some work in this overall area.

5. The PCAST turned to consideration of three issues on which an opinion might be offered to the President. There was general agreement on the subject of the President's FY91 budget for Science and Technology. Additional work was initiated on the subject of DoD Support for Research and on the subject of the National Institutes of Health. The PCAST approved the paper at Enclosure 5 for submission to the President.

6. The PCAST continued its discussion of the Materials Science and Engineering Panel with a view toward finalizing its terms of reference. There was some discussion of what type of report the Panel might produce and a general consensus that more than one report was likely. Dr. Bromley stated that the notion of "waste elimination should be incorporated into the consideration of materials and materials science. Additional discussion focused on the proposed membership of the Panel. A more final terms of reference and membership proposal will be discussed at the next meeting.

7. Dr. Nathans led a discussion of the proposed Bioscience and Biotechnology Panel. He said, in view of the very large number of efforts underway in this area, that the panel effort should be limited in scope, focusing on those areas where PCAST can make a significant contribution. Dr. Gomory said the effort should consider the transfer of research in this area to product. Dr. Wyngaarden noted that industry prefers that government funds go to research rather than development. He further noted that there were potential conflicts between laws controlling technology transfer and laws controlling conflict of interest. A number of other issues arose: Dr. Massey noted there were ideological issues surrounding the use of government research to stimulate industry. Dr. Gomory said that measures of R&D effort based on percentage of GNP were misleading and would not serve as a good measure of total research support in this area. Dr. Bromley suggested that the PCAST should nominate additional potential members for the panel. Dr. Borlaug agreed to provide additional nominees. Dr. Bromley said the issues and partial membership were appropriate. He asked that a complete charter and full list of members be submitted for the next PCAST meeting.

8. Dr. Likins introduced the subject of the Education and Human Resources Panel with a call for some redirection of the effort.

His plan was to constitute the panel for the immediate task and then to reconstitute it as necessary to deal with additional or follow-on tasks. Dr. Bromley said that the FCCSET would work the budget issue in this area and that the PCAST panel need not consider that area. Dr. Likins noted that PCAST might recommend priorities. Dr. Shapiro stated that some states which were particularly innovative in secondary education should be represented on the panel. There followed a general discussion of membership and PCAST members were asked to submit additional nominees.

9. Dr. Drake opened the discussion of support for individual investigators with a presentation on how the number of individual researchers in the earth sciences varies with the market for oil. He used the data to underscore the point that there are many variables that affect or appear to affect the number of individual investigators at any given time.

a. Dr. Karl Erb presented information on the number of individual investigators as a function of available resources for NSF. He used the charts at Enclosure 6. He stated that while total research funding to universities increased slightly over the period 1980 to 1990, the annual increase to the National Science Foundation has not kept pace with inflation. This could explain in part the decrease in the number of grants to individual investigators. Dr. Gomory and Dr. Healy pointed out that the there were many variables at work in this system and that it was not clear that funding alone was the driver for the number of individual investigators. Dr. Bromley stated that there is a common perception that we are underinvesting in science and technology people. Mr. Packard felt that the problem was real but partly due to the high overhead within the universities.

b. Dr. Bromley stated that OMB would treat the issue in the FY92 budget deliberations in detail. The PCAST then went into executive session until close of business.

Friday, May 25, 1990, 9:00 a.m., the Roosevelt Room, The White House, Closed Session.

All PCAST members present except Dr. McTague and Dr. Buchsbaum. OMB represented by Mr. Robert Grady and Mr. Joe Hezir. Mr. Michael Deland, Chairman, Council on Environmental Quality.

9. Dr. Bromley opened the session noting that the President was expected to visit shortly. While awaiting the President's arrival, the PCAST continued the discussion on support for individual investigators. Dr. Shapiro thought that the real issue was how much is enough R & D and that a better set of indicators was required. Dr. Gomory said he personally believed spending on individual investigators should be increased, but it was important that the "pain" of the scientific community be separated from the

issue of the size of the community. There is a growing pool of investigators that presses on resources. Dr. Likins noted that the pool also has an impact in the area of education. Dr. Healy believes we need to look at factors which control R&D - better measures for how much to spend. Dr. Bromley asked what data would be pertinent. Dr. Likins suggested anticipated retirements, pipeline input and information on the science and engineering faculty. These are areas that could be considered by the Education and Human Resources Panel. Dr. Bromley stated that the dialogue should continue through the summer and fall.

10. The President arrived at 9:15 a.m. for a brief discussion with the PCAST. Dr. Bromley summarized the work of this session and the President reiterated his belief in the importance of science and technology as a prime factor in improving U.S. competitiveness. The President departed at approximately 9:25 a.m.

11. Dr. Bromley introduced Robert Grady, Associate Director for Natural Resources, Energy and Science, Office of Management and Budget who discussed the FY91 budget, the budget summit negotiations, and the relationship of PCAST to the FY92 budget process. Mr. Grady expressed the general feeling of excitement within the Administration over the existence of PCAST and noted the appreciation of the fact that science and technology occupies a high position on the President's agenda. He indicated OMB's willingness to try to move it to the top of the budget agenda. He stated an interest in shifting budget emphasis toward longer term investment rather than near term consumption. He listed a number of initiatives supporting the strategy in the FY91 budget: measures to increase savings and investment; doubling of the NSF budget by FY93; global change; enabling technology for the space program; supercollider/superconductivity; increase in biomedical research. For FY92, the effort will be to try to move the FY91 initiatives forward. A number of issues can use PCAST advice: how to address individual investigator issues; what mix of biomedical research; government role in supporting advanced technologies; additional work to support Mars mission.

a. Dr. Gomory noted that some accepted notions may not be right. Space program is a case in point. May not be as good an investment as before. Nor is it necessarily true that more R&D means more competitiveness. It may be necessary eventually to invest in manufacturing. There is more benefit in individual research than in space mega-programs.

b. Dr. Massey expressed appreciation for the budget priority afforded science and technology. He further noted the need to balance the need for "exciting" projects against individual research. He noted that NASA investment in university research does not match its increase in budget.

c. Dr. Likins shared the concerns previously expressed even though committed to space exploration. He felt that the Hubble telescope was a good example of space exploration while the space

station was not. The derivative commercial benefits of the space program are increasingly marginal.

d. Dr. Healy stated that investment in the future was really an investment in people. There is a need to make sure that all understand the importance of people doing science.

e. Mr. Packard said it was clear that the President has firm objectives for the space program and he declared PCAST intent to help him achieve them. Nevertheless, he noted that the benefits coming out of the space program are small and it is therefore important that it be done right.

f. Dr. Gomory supported Mr. Packard's statement noting that the space program was historically driven by rivalry. Taking the rivalry out of the program and moving more deliberately could save resources.

12. Dr. Bromley then turned to the final agenda item. He stated that the President was interested in subjects in the area of science and technology that could serve as the basis for a presidential initiative. He asked PCAST for ideas.

a. Mr. Packard suggested that the issues should not be overly complicated. There should be only perhaps one or two. He felt that the issue of the individual investigator could be tied to the thousand points of light concept. Alternatively, in the area of education, an issue could be pursued to assure every young person gets off to a good start.

b. Dr. Lovejoy suggested that biodiversity might be such an issue. Dr Bromley suggested that the broader issue of conservation might be more adaptable to the presidential initiative format.

c. Dr. Gomory suggested the issue of manufacturing - to address the concern over the country's loss of focus on manufacturing. Dr. Healy said it would be difficult to express the need in such a way as to make the issue exciting for the public. Dr. Bromley suggested that Dr. Gomory try a first cut at framing the issue.

d. Dr. Healy suggested biology as the next "frontier" - the most exciting science in microcosm.

At this point the PCAST took a short break.

13. Dr. Bromley reconvened the PCAST with consideration of issues that might be appropriate for the G-7 summit. The objective was to identify issues that would result in major social change within the next 10, 20, and 50 year time periods.

a. Dr. Gomory suggested population growth, the future evolution of computers/fiber optics, robots, and communications.

b. Dr. Borlaug suggested third world instability caused by lack of food, lack of education, lack of technology to produce food.

c. Mr. Packard suggested what we can do to help people help themselves.

d. Dr. Likins suggested problems of the global habitat.

e. Dr. Lovejoy suggested energy - what can we use and how to use it.

f. Dr. Healy suggested demographics: the increase in the elderly population, the emergence and generally the role of women in the lesser developed countries.

g. Dr. Nathans suggested genetics and the ethical questions of the new biology.

h. Dr. Bromley suggested the issue of internationalism - what is an american company or more generally a national company. Dr. Shapiro noted that internationalism restricts our freedom to act. Growth and material gain may not be our most important aspirations. There are concerns for limitations on energy and habitat. Third world aspirations may overtake some of our own.

i. Dr. Bromley suggested the commercialization of space. What is the impact of expanding our sphere of activity to into space and the sea bottom.

14. Dr. Bromley then proceeded to close the PCAST meeting. He asked that the members give the last topic additional thought during the next week or so. He noted that there would be no PCAST meeting in June or August. The next meeting is scheduled for July 26 - 27, 1990.

Office of the Press Secretary
(Miami, Florida)

For Immediate Release January 19, 1990

EXECUTIVE ORDER

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PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY

By the authority vested in me as President by the Constitution and laws of the United States of America, and in order to establish, in accordance with the provisions of the Federal Advisory Committee Act, as amended (5 U.S.C. App. 2), an advisory committee on science and technology, it is hereby ordered as follows:

Section 1. Establishment. There is established the President's Council of Advisors on Science and Technology ("Council"). The Council shall be composed of not more than 15 members, one of whom shall be the Director of the Office of Science and Technology Policy, and 14 of whom shall be distinguished individuals from the private sector to be appointed by the President. The Director of the Office of Science and Technology Policy shall serve as Chairman of the Council. The Vice Chairman shall be appointed by the President from among the 14 private sector members. The Chairman shall report directly to the President.

Sec. 2. Functions. (a) The Council shall advise the President on matters involving all areas of science and technology.

(b) In the performance of its advisory duties the Council shall conduct a continuing review and assessment of developments in science and technology, and shall, through the Chairman, report thereon to the President whenever requested.

(c) The Chairman may, from time to time, invite experts to investigate and report to the Council on specific issues of national consequence.

Sec. 3. Administration. (a) The heads of Executive agencies shall, to the extent permitted by law, provide the Council and its panels such information with respect to scientific and technological matters as required for the purpose of carrying out its functions.

(b) Members of the Council shall serve without any compensation for their work on the Council. However, members appointed from among private citizens of the United States may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by law for persons serving intermittently in the Government service (5 U.S.C. 5701-5707).

(c) Any expenses of the Council shall be paid from the funds available for the expenses of the Office of Science and Technology Policy.

(d) The Office of Administration shall, on a reimbursable basis, provide such administrative services as may be required.

Sec. 4. General. (a) Notwithstanding any other Executive order, the functions of the President under the Federal Advisory Committee Act, as amended, except that of reporting to the Congress, which are applicable to the Council, shall be performed by the Office of Administration in accord with the guidelines and procedures established by the Administrator of General Services.

(b) The Council shall terminate on June 30, 1991, unless sooner extended.

GEORGE BUSH

THE WHITE HOUSE,

January 19, 1990.

# # #

UNCLASSIFIED
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RECEIVED: 08 JUN 90 19

TO: MEMO FOR RECORD

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DOC DATE: 08 JUN 90
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file FCCSET

KEYWORDS: SCIENTIFIC

PERSONS:

SUBJECT: CHARTER FOR FEDERAL COORDINATING COUN FOR SCIENCE / ENGINEERING / TECHNOLOGY

ACTION: FOR RECORD PURPOSES DUE DATE: 12 JUN 90 STATUS: C

STAFF OFFICER: NONE LOGREF:

FILES: WH NSCP: CODES:

D O C U M E N T D I S T R I B U T I O N

FOR ACTION	FOR CONCURRENCE	FOR INFO
		BARTH
		MELBY
		SCOWCROFT

COMMENTS: _____

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OPENED BY: NSLMS CLOSED BY: NSLMS DOC 1 OF 1

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CHARTER

FEDERAL COORDINATING COUNCIL FOR SCIENCE, ENGINEERING, AND TECHNOLOGY

The Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) is established pursuant to Public Law 94-282, Title V of the "National Science and Technology Policy Organization and Priorities Act of 1976" to consider cross-cutting science, engineering and technology issues. Specifically,

The Council shall consider problems and developments in the fields of science, engineering, technology and related activities affecting more than one Federal agency, and shall recommend policies and other measures designed to:

(1) provide more effective planning and administration or Federal scientific, engineering, and technological programs,

(2) identify research needs including areas requiring additional emphasis,

(3) achieve more effective utilization of the scientific, engineering and technological resources and facilities of Federal agencies, including the elimination of unwarranted duplication, and

(4) further international cooperation in science, engineering, and technology.

OBJECTIVES

In fulfilling this mandate, the FCCSET's two major objectives are:

- to coordinate science, engineering and technology activities affecting more than one Federal agency and surface and resolve science, engineering and technology policy issues with respect to those activities.

- to develop authoritative scientific, engineering and technological expertise and advice for the Executive Branch.

FUNCTIONS

To accomplish these two objectives the FCCSET will:

- o serve as a forum for coordinating science, engineering and technology programs affecting more than one Federal agency, sharing information, reviewing and implementing national and international policy objectives and developing consensuses with respect to science, engineering and technology activities;

- o identify research and development needs and priorities;

- o issue reports, studies and assessments of current scientific, engineering and technological capabilities in fields of research and development of concern to the Executive Branch;

- o inform other policy making bodies of review, studies and analyses underway;

- o identify science, engineering and technology issues and concerns of importance to the nation and give expertise and advice to policy bodies;

- o work closely with the Office of Management and Budget in developing and reviewing annual and long-range Federal budget plans in selected cross-cutting areas of science, engineering and technology;

- o improve planning, coordination and communication among Federal agencies engaged in science, engineering and technology.

ADMINISTRATIVE PROVISIONS

To accomplish these functions the FCCSET is authorized to:

- o detail employees to the Council to perform such functions, consistent with the purposes of the FCCSET, as the Chairman may assign to them;

- o establish committees for the purposes of conducting studies, making reports, coordinating Federal science, technology and engineering activities that involve more than one Federal agency, and making recommendations to the FCCSET;

- o develop, review on an annual basis, charters for committees, and assign high priority agenda items as necessary;

- o Council meetings shall be called by the Chairman as deemed appropriate and such agency member shall attend at a senior policy level;

- o Council proceedings, studies and reports, either preliminary or final, shall be printed and distributed only with the Chairman's authorization.

MEMBERSHIP

The Council shall be chaired by the Director of the Office of Science and Technology Policy and shall be composed of one senior policy level representative of each of the following Federal agencies:

Department of Agriculture
Department of Commerce
Department of Defense
Department of Education
Department of Energy
Department of Health and Human Services
Department of Housing and Urban Development
Department of the Interior
Department of State
Department of Transportation
Department of Veteran's Administration
National Aeronautics and Space Administration
National Science Foundation
Environmental Protection Agency

Ex-Officio Members:

Director, Office of Management and Budget
Assistant to the President for National Security Affairs

Other agencies may be requested to participate in meetings of the Council concerned with matters of substantial interest to such agency.

DETERMINATION

I hereby approve and adopt this Charter which is determined to be consistent with PL-94-282 which establishes the FCCSET.

Approved:

D. Allan Bromley — June 6, 1990

D. Allan Bromley
Chairman, Federal Coordinating
Council for Science, Engineering
and Technology

Date:

PCAST PANELS UNDER CONSIDERATION
MARCH 1990

		FCCSET Professional Staffer
High Performance Computing and Communications		
Chairman:	Sol Buchsbaum	Charles Dickens
Vice Chairman:	Ralph Gomory	
Materials Science and Engineering		
Chairman:	John McTague	Hugh Stringer
Vice Chairman:	Peter Likins	
Education and Human Resources		
Chairman:	Peter Likins	Charles Dickens
Vice Chairman:	Charles Drake	

FEDERAL COORDINATING COUNCIL FOR SCIENCE, ENGINEERING & TECHNOLOGY COMMITTEES
MARCH 1990

Physical, Mathematical and Engineering Sciences

Chairman: Erich Bloch, Director, National Science Foundation
Vice Chairman: Charles Herzfeld, Director, Defense Research and Engineering, Department of Defense
OSTP Liaison Member: Eugene Wong, Associate Director for Physical Sciences and Engineering

Technology and Industry

Chairman: Thomas Murrin, Deputy Secretary, Department of Commerce
Vice Chairman: J.R. Thompson, Deputy Administrator, National Aeronautics and Space Administration
OSTP Liaison Member: William D. Phillips, Associate Director for Industrial Technology

Education and Human Resources

Chairman: Adm. James Watkins (Ret.), Secretary, Department of Energy
Vice Chairmen: Ted Sanders, Deputy Secretary, Department of Education
Luther Williams, Senior Science Advisor, National Science Foundation
OSTP Liaison Member: J. Thomas Ratchford, Associate Director for Policy and International Affairs

Bioscience and Biotechnology

Chairman:	**Dan Nathans**	**Maryann Bach**
Vice Chairman:	**Bernadine Healy**	

Global Environment and Natural Resources

Chairman:	**Tom Lovejoy**	**Maryann Bach**
Vice Chairman:	**David Packard**	
	Norman Borlaug	

Life Sciences and Health

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

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

OSTP Liaison Member: James B. Wyngaarden, Associate Director for Life Sciences

Earth and Environmental Sciences

Chairman: Dallas Peck, Director, US Geological Survey, Department of the Interior

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

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

OSTP Liaison Member: James B. Wyngaarden, Associate Director for Life Sciences

Food, Agriculture and Forest Research

Chairman: Charles Hess, Assistant Secretary for Science and Education Administration, Department of Agriculture

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

James Benson, Deputy Commissioner, Food and Drug Administration, Department of Health and Human Services

OSTP Liaison Member: James B. Wyngaarden, Associate Director for Life Sciences

International Economic Competitiveness

Chairman: Ralph Gomory
Vice Chairman: Harold Shapiro

Hugh Stringer

Technology and Industry

Chairman: Thomas Murrin, Deputy Secretary, Department of Commerce
Vice Chairman: J.R. Thompson, Deputy Administrator, National Aeronautics and Space Administration
OSTP Liaison Member: William D. Phillips, Associate Director for Industrial Technology

International Science, Engineering and Technology

Chairman: Reginald Bartholomew, Under Secretary for Security Assistance, Science and Technology, Department of State
Vice Chairmen: Fred Bernthal, Deputy Director, National Science Foundation
Philip Schambra, Director, Fogarty International Center, National Institutes of Health, Department of Health and Human Services
OSTP Liaison Member: J. Thomas Ratchford, Associate Director for Policy and International Affairs

FCCSET COMMITTEES*

*** The Committee Chairman's Point of Contact is the Committee Executive Secretary unless specified otherwise.**

May 14, 1990

EARTH AND ENVIRONMENTAL SCIENCES

CHAIRMAN:

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PRESIDENT'S COUNCIL OF ADVISERS ON SCIENCE AND TECHNOLOGY

MAY 24-25, 1990

PRELIMINARY AGENDA

THURSDAY, MAY 24, 1990

OPEN SESSION: 9:00 A.M. - 12:00 NOON
CONFERENCE ROOM, COUNCIL ON ENVIRONMENTAL QUALITY
722 JACKSON PLACE, N.W.

8:30-9:00	ARRIVAL -- COFFEE AND PASTRIES	
9:00-9:30	OPENING REMARKS	DR. BROMLEY
9:30-10:30	INTERNATIONAL ECONOMIC COMPETITION --INFORMATION BRIEFING AND DISCUSSION	DR. GOMORY DR. PHILLIPS DR. RATCHFORD
10:30-10:45	BREAK	
10:45-11:45	GLOBAL ENVIRONMENT AND NATURAL RESOURCES -- INFORMATION BRIEFING AND DISCUSSION	DR. LOVEJOY DR. MAYNARD
11:45-12:00	CLOSING REMARKS	DR. BROMLEY

THURSDAY, MAY 24, 1990 continued

12:00-1:00	LUNCH - ROOM 208, CORDELL HULL CONFERENCE ROOM OLD EXECUTIVE OFFICE BUILDING	

CLOSED SESSION, 1:00 - 5:00 P.M.
ROOM 208, CORDELL HULL CONFERENCE ROOM
OLD EXECUTIVE OFFICE BUILDING

1:00-2:00	MATERIALS SCIENCE AND ENGINEERING PANEL APPROVE TERMS OF REFERENCE, MEMBERS AND MILESTONES	DR. McTAGUE DR. PHILLIPS
2:00-2:15	BREAK	
2:15-3:15	BIOSCIENCE AND BIOTECHNOLOGY PANEL - DISCUSSION OF DRAFT TERMS OF REFERENCE, RECOMMENDED MEMBERSHIP	DR. NATHANS DR. WYNGAARDEN
3:15-4:15	EDUCATION AND HUMAN RESOURCES PANEL -- DISCUSSION OF DRAFT TERMS OF REFERENCE, RECOMMENDED MEMBERSHIP	DR. LIKINS DR. RATCHFORD
4:15-5:00	FUNDING FOR INDIVIDUAL AND SMALL GROUPS OF INVESTIGATORS	DR. ERB
5:00	CLOSING REMARKS	DR. BROMLEY
6:30	RECEPTION AND DINNER HOSTED BY AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE (DINNER AT 7:00)	

FRIDAY, MAY 25, 1990

CLOSED SESSION, 9:00 A.M. - 12:00 NOON
ROOSEVELT ROOM, THE WHITE HOUSE

9:00-10:00	THE BUDGET PROCESS AND TIMING AS IT RELATES TO PCAST AND FCCSET	MR. DARMAN
10:00-10:30	DISCUSSION	
10:30-10:45	BREAK	
11:15-11:45	OTHER PCAST ISSUES	
11:45-12:00	THE NEXT MEETING AND CLOSING REMARKS	DR. BROMLEY

REVISED 5/15/90

THE WHITE HOUSE

WASHINGTON

MEMORANDUM FOR SOLOMON J. BUCHSBAUM
President's Council of Advisers on Science and Technology (PCAST)

FROM: **D. ALLAN BROMLEY**
Chairman, PCAST

SUBJECT: **Terms of Reference for the PCAST Panel on High Performance Computing and Communications**

You are requested to chair a PCAST Panel on High Performance Computing and Communications.

The purpose of this Panel is to enable PCAST to advise the President on issues related to high performance computing and communications that have a bearing on long-range national goals, government regulation, the transition of Federal programs to industry, participation of the States, and foreign access.

The U.S.'s technological leadership in computing, communications, and applications is critical to its ability to compete effectively in world trade. Maintaining a strong national defense capability is also directly related to the advancement and application of computing and digital communications technology. There is a five-year history of development for a Federal initiative in high performance computing supported by reports authored by participants from academia, industry, the National Academy of Sciences, the National Research Council, the White House Science Council, the Office of Technology Assessment, and professional societies, that include the Institute of Electrical and Electronics Engineers and the Society for Industrial and Applied Mathematics. The Office of Science and Technology Policy (OSTP) and the Federal Coordinating Council for Science, Engineering and Technology (FCCSET) have issued six reports that have led to plans for such an initiative. Federal science agencies, including DOD, NSF, DOE, and NASA, have created major programs that support the initiative. Congress has shown growing interest as well: three pieces of legislation are active, and a fourth is under development. The goal is to maintain and extend U.S. leadership, encourage additional U.S. sources of production, quicken the pace of innovation by diffusing the technology into the research and education communities, and increase U.S. productivity and competitiveness through networked computing in analysis, design and manufacturing. Finally, the OSTP report, The Federal High Performance Computing Program, issued on September 8, 1989, calls for an advisory panel consisting of eminent individuals from industry and academia.

The Panel on High Performance Computing and Communications shall:

1. **Conduct a one-time review of and advise on the goals and strategies proposed in The Federal High Performance Computing Program report of September 8, 1989.**

2. **Advise on an effective transition strategy to evolve the NREN (National Research and Education Network) into a commercial, high performance, general purpose national communications network serving the S&T community, business, educational institutions, and eventually the general public.**

3. **Advise on general societal needs that can be served by high performance computing suitably connected through digital networks, and identify means for a broad diffusion of the benefits of the High Performance Computing Program.**

4. **Identify major issues and decisions of a non-technical or semi-technical nature (e.g. standards, foreign participation, and regulatory issues) that will have a significant impact upon the ability of the private sector to remain viable and competitive.**

5. **Advise on ways of coping with, even exploiting, the various contrasting objectives in computational education. These include: theory vs. systems; scientific computing vs. business computing; research personnel vs. practicing professionals; production of Ph.Ds vs. other goals of higher education.**

The Panel will submit its first report by December 31, 1990.

Administrative Provisions

(a) **This PCAST Panel on High Performance Computing and Communications shall satisfy the requirement of The Federal High Performance Computing Program's private sector panel to advise on issues related to long-range national goals, government regulation, transition of Federal programs to industry, participation of the States in the national program, and issues of foreign access.**

(b) **Ad hoc working groups with participation not limited to the Panel members may be formed to assist the Panel in its work.**

Duration

The Panel's activities and the continuing need for the Panel shall be reviewed annually by the Chairman of the PCAST.

Chairman

The Panel Chairman shall convene meetings of the Panel at times and locations of the Chairman's choice in consultation with the Chairman of the PCAST.

Vice Chairman

The Vice Chairman shall act in the stead of the Chairman at his request.

Compensation

Private sector members of the Panel shall receive no compensation for their service. Their travel expenses and per diem subsistence shall be reimbursed in accordance with regulations which apply to persons serving intermittently in government service.

Temporary supporting staff of the Panel who are not Federal employees may be reimbursed in accordance with contracts developed by the OSTP in accordance with regulations which apply to temporary employees of the Executive Office of the President.

Determination

I hereby determine that the formation of the PCAST Panel on High Performance Computing and Communications is in the public interest in connection with the performance of duties imposed on the Executive Branch by law, and that such duties can best be performed through the advice and counsel of such a group.

The Terms of Reference for the PCAST Panel on High Performance Computing and Communications include no assignment requiring Panel members to participate personally and substantially in the conduct of any specific procurement, or place any member in the position of acting as a "procurement official."

Approved:

D. Allan Bromley

April 26, 1990
Date

File FCCSET

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MARCH 1990

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OSTP Liaison Member: William D. Phillips, Associate Director for Industrial Technology

THOMAS J. WELCH

Dr. Thomas J. Welch formerly served as the Executive Director of the Defense Science Board, to which he was appointed in April 1989. The Defense Science Board is the senior technical advisory body to the Secretary of Defense.

Dr. Welch was Deputy Assistant to the Secretary of Defense for Chemical Matters from 1984 to 1989 and was responsible for DOD's chemical warfare, chemical-biological defense and demilitarization programs.

In 1987, he was appointed to a one-year Senior Fellowship at the National Defense University.

From 1979 to 1983, he was the Associate Technical Director for Technology, U.S. Army Chemical Research and Development Center. From 1983 to 1984, he served as Assistant Director of the Center's Detection and Physical Protection Directorates.

From 1963 to 1965, Dr. Welch served at the U.S. Army Artillery Board as an Army lieutenant at Fort Sill, Oklahoma. His responsibilities included service testing of target acquisition and laser range finder materiel.

After military service, Dr. Welch joined the U.S. Army Land Warfare Laboratory, Aberdeen Proving Ground, Maryland, as a physical scientist. While at LWL, he led a group of engineers in the development of land navigation and tunnel detection devices which were successfully used by the U.S. Army in Vietnam.

Dr. Welch is a 1978 graduate of the U.S. Army War College.

Dr. Welch has testified numerous times before the Congress and has delivered many talks on defense issues. His most recent publication is "Technology Change and Security", appearing in the Spring 1990 edition of The Washington Quarterly.

Dr. Welch was born in Utica, New York on March 9, 1939. He graduated from St. Bonaventure University in 1960, John Carroll University in 1963 (MS, Physics), and was awarded the PhD degree in Physics by Auburn University in 1974. He is married to the former Noreen Rose Conomy of Cleveland, Ohio. The Welch's have four children.

Office of the Press Secretary
(Miami, Florida)

For Immediate Release January 19, 1990

EXECUTIVE ORDER

- - - - - - -

PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY

By the authority vested in me as President by the Constitution and laws of the United States of America, and in order to establish, in accordance with the provisions of the Federal Advisory Committee Act, as amended (5 U.S.C. App. 2), an advisory committee on science and technology, it is hereby ordered as follows:

Section 1. Establishment. There is established the President's Council of Advisors on Science and Technology ("Council"). The Council shall be composed of not more than 15 members, one of whom shall be the Director of the Office of Science and Technology Policy, and 14 of whom shall be distinguished individuals from the private sector to be appointed by the President. The Director of the Office of Science and Technology Policy shall serve as Chairman of the Council. The Vice Chairman shall be appointed by the President from among the 14 private sector members. The Chairman shall report directly to the President.

Sec. 2. Functions. (a) The Council shall advise the President on matters involving all areas of science and technology.

(b) In the performance of its advisory duties the Council shall conduct a continuing review and assessment of developments in science and technology, and shall, through the Chairman, report thereon to the President whenever requested.

(c) The Chairman may, from time to time, invite experts to investigate and report to the Council on specific issues of national consequence.

Sec. 3. Administration. (a) The heads of Executive agencies shall, to the extent permitted by law, provide the Council and its panels such information with respect to scientific and technological matters as required for the purpose of carrying out its functions.

(b) Members of the Council shall serve without any compensation for their work on the Council. However, members appointed from among private citizens of the United States may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by law for persons serving intermittently in the Government service (5 U.S.C. 5701-5707).

(c) Any expenses of the Council shall be paid from the funds available for the expenses of the Office of Science and Technology Policy.

(d) The Office of Administration shall, on a reimbursable basis, provide such administrative services as may be required.

Sec. 4. General. (a) Notwithstanding any other Executive order, the functions of the President under the Federal Advisory Committee Act, as amended, except that of reporting to the Congress, which are applicable to the Council, shall be performed by the Office of Administration in accord with the guidelines and procedures established by the Administrator of General Services.

(b) The Council shall terminate on June 30, 1991, unless sooner extended.

GEORGE BUSH

THE WHITE HOUSE,

January 19, 1990.

# # #

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

(Pending Announcement by the President)

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

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

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 Alfred P. Sloan Foundation

BERNADINE HEALY, Chairman of the Research Institute, The Cleveland Clinic Foundation (Vice-Chairman)

PETER LIKINS, President, Lehigh University

THOMAS LOVEJOY, Assistant Secretary for External Affairs, Smithsonian Institution

WALTER MASSEY, Vice President for Research and for Argonne National Laboratory, University of Chicago

JOHN McTAGUE, Vice President-Research, 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

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 & Co., 1942-44. He also served as research scientist in charge of wheat improvement with the Cooperative Mexican Agricultural Program, Mexican Ministry of Agriculture and the Rockefeller Foundation, 1944-60, and later, as Associate Director of the Foundation assigned to the Inter-American Food Crop Program, 1960-63.

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 1970-73; as a consultant to the Office of Science and Technology Policy, 1976-82; and as a member and Chairman, The White House Science Council, 1982-89. 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, 1967-69; as Dean of Graduate Studies and as Associate Dean of the Science Department, 1978-81.

He has participated in the work of a number of national and international committees, including serving as President of the Geological Society of America, 1975-76; and of the American Geophysical Union from 1984-86.

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 includes teaching and research at Princeton University, 1957-59. 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, and IBM Senior Vice President for Science and Technology in 1986. He has served in many capacities in academic, industrial and governmental 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.

BERNADINE HEALY

Bernadine Healy is Chairman of the Research Institute of The Cleveland Clinic Foundation, a position she assumed in 1985, and is a staff member of the Clinic's Department of Cardiology. Prior to that time, she was Deputy Director of the Office of Science and Technology Policy at the White House, and until that appointment had been a Professor at The Johns Hopkins University School of Medicine and Hospital.

A graduate of Vassar College in 1965, Dr. Healy received her medical degree from Harvard Medical School in 1970. Her medical career continued at Johns Hopkins from 1976 to 1984, where she was Professor of Cardiology and Medicine, Director of the Coronary Care Unit, and Assistant Dean for Postdoctoral Programs and Faculty Development.

Dr. Healy has served in many capacities on both private and governmental boards and commissions. She was Executive Secretary of the White House Panel on the Health of Universities and chaired the White House Cabinet Working Group on Biotechnology. Subsequently she became a member of the White House Science Council and also served as Chairman of the Advisory Panel for New Developments in Biotechnology of the Office of Technology Assessment of the U.S. Congress. Dr. Healy serves on several councils and committees within the National Institutes of Health, including the Advisory Committee to the Director of the NIH, and is a member of the Institute of Medicine of the National Academy of Sciences. She was recently appointed to the Special Medical Advisory Committee of the Department of Veterans Affairs.

Dr. Healy is a member of the Board of Overseers of Harvard College and a member of several of Harvard's Visiting Committees. She chairs the Ohio Council on Research and Economic Development of the Ohio Board of Regents and is a Trustee of the Edison Biotechnology Center. She is the immediate Past President of the American Heart Association and a former President of the American Federation for Clinical Research. She also serves on the Board of Directors of Medtronic, Inc., and the National City Corporation.

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 MIT in 1958, and his Ph.D. in engineering mechanics from Stanford 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 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 President of the Society for Conservation Biology.

Dr. Lovejoy, on the international level, has focused his attention on 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.

WALTER E. MASSEY

Walter E. Massey is Vice President of the University of Chicago for Research and for Argonne National Laboratory. He has held this position since 1984. He has also been a Professor of Physics at the University since 1979.

Dr. Massey previously served as a physics instructor at Morehouse College, 1958-59; as a staff physicist with the Argonne National Laboratory, 1966-68; as Assistant Professor of Physics, University of Illinois, Urbana, 1968-70; Associate Professor of Physics and Dean of the College, Brown University, 1975-79.

Dr. Massey has served in a number of leadership positions in academic, industrial and governmental institutions, including six years as a member of the National Science Board. He is Vice President of the American Physical Society and is the Past President and Chairman of the American Association for the Advancement of Science.

Dr. Massey received his B.S. degree from Morehouse College in 1958 and his M.A. and Ph.D. degrees in physics from Washington University in 1966.

His research interests include many-body theories of quantum liquids and solids, theory of classical liquids, and solid state theory; the teaching of science and mathematics, and the role of science and technology in a democratic society.

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

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.

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, 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.

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 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.

His research interests include electronics, communication and data processing technologies, and ocean science.

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 to innovation, and economic forecasting and policy analysis.

FCC SET

Charles Herzfeld DOD
DR SULLIVAN - HEW
Reilly EPA
Erich Bloch NSF
Adm Watkins, DOE
Tom MURRIN - DOD
Richard McCormack - DOS
Anthony PRINCIPI - VA
Laura CAVAZOS - DOEd.
M. Lujan - DO Interior

Charter open to final comment.

Priorities

Manufacturing ☆ #1 - MURRIN

Policy for Export of Tech.

Differentiation

Committees - Membership @ AS / level.

MEETING OF THE
FEDERAL COORDINATING COUNCIL
FOR SCIENCE, ENGINEERING AND TECHNOLOGY

WEDNESDAY, MARCH 14, 1990
3:30 - 4:45 P.M.

ROOM 476, OLD EXECUTIVE OFFICE BUILDING

AGENDA

I. Summary of Minutes of January 24 Meeting

II. Discussion of Draft FCCSET Charter

III. Review and Approval of Committee Structure: Discussion of Priority Areas for FCCSET Committee Consideration and Coordination

IV. Discussion of Draft Sample Committee Charter

V. Administrative

- FCCSET Membership
- Update on Executive Secretariat

FYI
RB

MEETING OF THE
FEDERAL COORDINATING COUNCIL
FOR SCIENCE, ENGINEERING AND TECHNOLOGY

WEDNESDAY, MARCH 14, 1990
3:30 - 4:45 P.M.

THE ROOSEVELT ROOM

AGENDA

I. **Summary of Minutes of January 24 Meeting**

II. **Discussion of Draft FCCSET Charter**

III. **Review and Approval of Committee Structure: Discussion of Priority Areas for FCCSET Committee Consideration and Coordination**

IV. **Discussion of Draft Sample Committee Charter**

V. **Administrative**

- **FCCSET Membership**
- **Update on Executive Secretariat**

387 0656

March 14, 1990
(Revised)

FEDERAL COORDINATING COUNCIL
FOR SCIENCE, ENGINEERING AND TECHNOLOGY

SUGGESTED COMMITTEE STRUCTURE
WITH CROSS-CUTTING/SUBSIDIARY ISSUES

Committees:

Health and Life Sciences

Physical, Mathematical and Engineering Sciences

Earth and Environmental Sciences

Food Agriculture and Forestry Research*

Education and Human Resources

Technology and Industry

International Science, Engineering and Technology

Sample Cross-cutting/Subsidiary Issues:

Bioethics
Biotechnology
Global Change
High Performance Computing
Genome Research
Intellectual Property Rights
Manufacturing
Materials
Math and Science Education
Restoring and Maintaining R&D Infrastructure
S&T Initatives in Eastern Europe
S&T Information Collection, Utilization and Dissemination
Social and Behavioral Sciences
Stability of U.S. International S&T Commitments
Technology Transfer

*Established by PL 94-282; legislative relief required if abolished or merged

Original

FEDERAL COORDINATING COUNCIL FOR SCIENCE, ENGINEERING AND TECHNOLOGY

SUGGESTED COMMITTEE STRUCTURE WITH CROSS-CUTTING/SUBSIDIARY ISSUES

Committees:

Health and Life Sciences

Physical, Mathematical and Engineering Sciences

Earth and Environmental Sciences

Food Agriculture and Forestry Research*

Education and Human Resources

Technology and Industry

International Science, Engineering and Technology

Sample Cross-cutting/Subsidiary Issues:

Bioethics
Biotechnology
Global Change
High Performance Computing
Human Genome Research
Intellectual Property Rights
Manufacturing
Materials
Math and Science Education
S&T Initatives in Eastern Europe
S&T Information Collection, Utilization and Dissemination
Social and Behavioral Sciences
Technology Transfer

*Established by PL 94-282; legislative relief required if abolished or merged

March 14, 1990

DRAFT CHARTER

Federal Coordinating Council for Science, Engineering, and Technology

The Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) is established pursuant to Public Law 94-282, Title V of the "National Science and Technology Policy Organization and Priorities Act of 1976" to consider cross-cutting science, engineering and technology issues. Specifically,

> The Council shall consider problems and developments in the fields of science, engineering, and technology and related activities affecting more than one Federal agency, and shall recommend policies and other measures designed to:
>
> (1) provide more effective planning and administration of Federal scientific, engineering, and technological programs,
>
> (2) identify research needs including areas requiring additional emphasis,
>
> (3) achieve more effective utilization of the scientific, engineering, and technological resources and facilities of Federal agencies, including the elimination of unwarranted duplication, and
>
> (4) further international cooperation in science, engineering, and technology.

OBJECTIVES

In fulfilling this mandate, the FCCSET's two major objectives are:

- to develop authoritative scientific, engineering and technological expertise and advice for the Executive Branch.
- to coordinate science, engineering and technology activities affecting more than one Federal agency and surface and resolve science, engineering and technology policy issues with respect to those activities.

FUNCTIONS

To accomplish these two objectives the FCCSET will:

- serve as a forum for coordinating science, engineering and technology programs affecting more than one Federal agency, sharing information, reviewing and implementing national and international policy objectives and developing consensuses with respect to science, engineering and technology activities;

- identify research and development needs;

- issue reports, studies and assessments of current scientific, engineering and technological capabilities in fields of research and development of concern to the Executive Branch;

- inform other policy making bodies of reviews, studies and analyses underway;

- identify science, engineering and technology issues and concerns of importance to the nation and give expertise and advice to policy bodies;

- with the close cooperation of the Office of Management and Budget, develop and review annual and long-range Federal budget plans in selected cross-cutting areas of science, engineering and technology;

- improve planning, coordination and communication among Federal agencies engaged in science, engineering and technology.

ADMINISTRATIVE PROVISIONS

To accomplish these functions the FCCSET is authorized to:

- detail employees to the Council to perform such functions, consistent with the purposes of the FCCSET, as the Chairman may assign to them;

- establish committees for the purposes of conducting studies, making reports, coordinating Federal science, technology and engineering activities that involve more than one Federal agency, and making recommendations to the FCCSET;

- develop, and review on an annual basis, charters for committees, and assign high priority agenda items as necessary;

- Council meetings shall be called by the Chairman as deemed appropriate and each agency member shall attend at a senior policy level;

- Council proceedings, studies, and reports, either preliminary or final, shall be printed and distributed only with the Chairman's authorization.

MEMBERSHIP

The Council shall be chaired by of the Director of the Office of Science and Technology Policy and shall be composed of one senior policy level representative of each of the following Federal Agencies:

Department of Agriculture
Department of Commerce
Department of Defense
Department of Education
Department of Energy
Department of Health and Human Services
Department of Housing and Urban Development
Department of the Interior
Department of State
Department of Transportation
Department of Veteran's Administration
National Aeronautics and Space Administration
National Science Foundation
Environmental Protection Agency

Other agencies may be requested to participate in meetings of the Council concerned with matters of substantial interest to such agency.

DETERMINATION

I hereby approve and adopt this Charter which is determined to be consistent with PL 94-282 which establishes the FCCSET.

Approved:

_____ _____

D. Allan Bromley
Chairman, Federal Coordinating
Council for Science, Engineering
and Technology

Date

underline = new text
[ ] = deleted text

3/13/90

DRAFT CHARTER

Federal Coordinating Council for Science, Engineering, and Technology

[LEGISLATIVE MANDATE]

The Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) is [was] established [in 1976] pursuant to Public Law 94-282, Title V of the "National Science and Technology Policy Organization and Priorities Act of 1976" to consider cross-cutting science, engineering and technology issues. Specifically, [the law states that:]

> ["]The Council shall consider problems and developments in the fields of science, engineering, and technology and related activities affecting more than one Federal agency, and shall recommend policies and other measures designed to:
>
> (1) provide more effective planning and administration of Federal scientific, engineering, and technological programs,
>
> (2) identify research needs including areas requiring additional emphasis,
>
> (3) achieve more effective utilization of the scientific, engineering, and technological resources and facilities of Federal agencies, including the elimination of unwarranted duplication, and
>
> (4) further international cooperation in science, engineering, and technology.["]

OBJECTIVES

In fulfilling this mandate, the FCCSET's two major objectives are:

- to develop [provide] authoritative scientific, engineering and technological expertise and advice for the Executive Branch [to policy discussions and decisions to other cabinet-level councils including the National Security Council, the Economic Policy Council, the Domestic Policy Council, the Space Council and the Competitiveness Council].

- o to coordinate science, engineering and technology activities [efforts] affecting more than one Federal agency and surface and resolve [S&T] science, engineering and technology policy issues with respect to those activities.

FUNCTIONS

To accomplish these two objectives the FCCSET will:

- o serve as a [central coordinating] forum for coordinating science, engineering and technology programs [addressing problems and issues] affecting more than one Federal agency, sharing information, reviewing and implementing national and international policy objectives and developing consensuses with respect to science, engineering and technology activities;

- o identify [priority] research and development needs;

- [o facilitate continuing cooperation in planning coordination and communication among Federal agencies on science and technology issues;]

- o issue reports, studies and assessments of current [S&T] scientific, engineering and technological capabilities in fields of research and development of concern to the Executive Branch [Administration];

- [o provide reviews, analyses, advice and recommendations on science and technology matters to other policy coordinating bodies within the White House including the National Security Council, the Economic Policy Council, the Domestic Policy Council, the Space Council, and the Competitiveness Council;]

- o [seek to] inform other policy making bodies of reviews, studies and analyses underway [, and coordinate activities so as not to duplicate functions with these bodies];

- o identify science, engineering and technology issues and concerns of importance to the nation and [bring policy] give [policy recommendations] expertise and advice to [the attention of the President through appropriate] policy bodies;

- o with the close cooperation of the Office of Management and Budget, develop and review annual and long-range Federal budget plans in selected cross-cutting areas of science, engineering and technology;

- improve planning, coordination and communication among Federal agencies engaged in science, engineering and technology.

ADMINISTRATIVE PROVISIONS

To accomplish these functions the FCCSET is authorized to:

- detail employees to the Council to perform such functions, consistent with the purposes of the FCCSET, as the Chairman may assign to them;

- establish committees for the purposes of conducting studies, making reports, coordinating Federal science, technology and engineering activities that involve more than one Federal agency, and making recommendations to the FCCSET;

- develop, and review on an annual basis, charters for committees, and assign high priority agenda items as necessary;

- Council meetings shall be called by the Chairman as deemed appropriate and each agency member shall attend at a senior policy level;

- Council proceedings, studies, and reports, either preliminary or final, shall be printed and distributed only with the Chairman's authorization.

MEMBERSHIP

The Council shall be chaired by of the Director of the Office of Science and Technology Policy and shall be composed of one senior policy level representative of each of the following Federal Agencies:

Department of Agriculture
Department of Commerce
Department of Defense
Department of Education
Department of Energy
Department of Health and Human Services
Department of Housing and Urban Development
Department of the Interior
Department of State
Department of Transportation
Department of Veteran's Administration
National Aeronautics and Space Administration
National Science Foundation
Environmental Protection Agency

Other agencies may be requested to participate in meetings of the Council concerned with matters of substantial interest to such agency.

DETERMINATION

I hereby approve and adopt this Charter which is determined to be consistent with PL 94-282 which establishes the FCCSET.

Approved:

_____ _____

D. Allan Bromley Date
Chairman, Federal Coordinating
Council for Science, Engineering
and Technology

February 6, 1990

DRAFT CHARTER

Federal Coordinating Council For Science, Engineering and Technology

LEGISLATIVE MANDATE

The Federal Coordinating Council for Science Engineering and Technology (FCCSET) was established in 1976 pursuant to Public Law 94-282, Title V of the "National Science and Technology Policy Organization and Priorities Act of 1976" to consider cross-cutting science, engineering and technology issues. the law states that:

> "The Council shall consider problems and developments in the fields of science, engineering, and technology and related activities affecting more than one Federal agency, and shall recommend policies and other measures designed to:
>
> (1) provide more effective planning and administration of Federal scientific, engineering, and technological programs,
>
> (2) identify research needs including areas requiring additional emphasis,
>
> (3) achieve more effective utilization of the scientific, engineering, and technological resources and facilities of Federal agencies, including the elimination of unwarranted duplication, and
>
> (4) further international cooperation in science, engineering, and technology."

OBJECTIVES

In fulfilling this mandate, the FCCSET's two major objectives are:

- to provide authoritative scientific and technological expertise and advice to policy discussions and decisions to other cabinet-level councils including the National Security Council, the Economic Policy Council, the Domestic Policy Council, the Space Council and the Competitiveness Council.

- to coordinate science and technology efforts affecting more than one Federal agency and surface and resolve S&T policy issues.

FUNCTIONS

To accomplish these two objectives the FCCSET will:

- serve as a central coordinating forum for addressing problems and issues affecting more than one Federal agency, sharing information, reviewing national and international policy objectives and developing consensus;

- identify priority research and development needs;

- facilitate continuing cooperation in planning coordination and communication among Federal agencies on science and technology issues;

- issue reports, studies and assessments of current S&T capabilities in fields of research and development of concern to the Administration;

- provide reviews, analyses, advice and recommendations on science and technology matters to other policy coordinating bodies within the White House including the National Security Council, the Economic Policy Council, the Domestic Policy Council, the Space Council, and the Competitiveness Council;

- seek to inform other policy making bodies of reviews, studies and analyses underway, and coordinate activities so as not to duplicate functions with these bodies;

- identify science and technology issues and concerns of importance to the nation and bring policy recommendations to the attention of the President through appropriate policy bodies;

- with the close cooperation of the Office of Management and Budget, develop, and review annual and long-range Federal budget plans in selected cross-cutting areas of science and technology;

- improve planning, coordination and communication among Federal agencies engaged in science and technology.

ADMINISTRATIVE PROVISIONS

To accomplish these functions the FCCSET is authorized to:

- o detail employees to the Council to perform such functions, consistent with the purposes of the FCCSET, as the Chairman may assign to them;
- o establish committees for the purposes of conducting studies, making reports, coordinating Federal science and technology activities that involve more than one Federal agency, and making recommendations to the FCCSET;
- o develop, and review on an annual basis, charters for committees, and assign high priority agenda items as necessary;
- o Council meetings shall be called by the Chairman as deemed appropriate and each agency member shall attend at a senior policy level;
- o Council proceedings, studies, and reports, either preliminary or final, shall be printed and distributed only with the Chairman's authorization.

MEMBERSHIP

The Council shall be chaired by of the Director of the Office of Science and Technology Policy and shall be composed of one policy level representative of each of the following Federal Agencies:

Department of Agriculture
Department of Commerce
Department of Defense
Department of Energy
Department of Health and Human Services
Department of Housing and Urban Development
Department of the Interior
Department of State
Department of Transportation
Department of Veteran's Administration
National Aeronautics and Space Administration
National Science Foundation
Environmental Protection Agency

Other Agencies may be requested to participate in meetings of the Council concerned with matters of substantial interest to such agency.

DETERMINATION

I hereby approve and adopt this Charter which is determined to be consistent with PL 94-282 which establishes the FCCSET.

Approved:

_____ _____

D. Allan Bromley Date
Chairman, Federal Coordinating
Council for Science, Engineering
and Technology

file - FCCSET

UNCLASSIFIED
NSC/S PROFILE

RECORD ID: 9001497
RECEIVED: 26 FEB 90 09

TO: SCOWCROFT

DOC DATE: 22 FEB 90
FROM: BROMLEY, D
SOURCE REF:

TECHNOLOGY TRANSFERS

KEYWORDS: SCIENTIFIC
ANSA

PERSONS:

SUBJECT: REQUEST SCOWCROFT ATTEND FCCSET 2ND MTG 1 MAR

ACTION: PREPARE MEMO FOR SCOWCROFT DUE DATE: 01 MAR 90 STATUS: S

LOGREF: 9001155

STAFF OFFICER: BARTH

FILES: WH NSCP: CODES:

D O C U M E N T D I S T R I B U T I O N

FOR ACTION	FOR CONCURRENCE	FOR INFO
BARTH	MELBY	GANTT
	POPADIUK	HUGHES
		PROCTOR
		ROSTOW
		WORKING

COMMENTS: 2/28/90 Barth to attend mtg; NFAN

DISPATCHED BY _____ DATE _____ BY HAND W/ATTCH

DOC 1 OF 1

OPENED BY: NSJWD CLOSED BY:

UNCLASSIFIED

Staff
1497

THE WHITE HOUSE

WASHINGTON

February 22, 1990

Dear General Scowcroft:

On February 8, I sent you follow-up information to the first meeting of the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET). I believe my office has already been in contact with you to schedule the next FCCSET meeting, but I would like to take this opportunity to formally invite you to attend the second meeting of the FCCSET on March 1, 1990 from 3:15-4:30 p.m. in the Roosevelt Room of the White House.

Attached you will find a copy of the agenda for the meeting. There are two points that merit highlighting. First, because of the President's emphasis on science and technology, we need to proceed expeditiously to establish committees and charters. I hope we will be able to finalize the committee structure and agree on priority areas of research for initial emphasis.

I welcome your thoughts and ideas about the mandate of the FCCSET and I look forward to discussing the draft FCCSET charter circulated with my February 12 letter. It will be important to iron out any differences by March 1, so that we can move quickly to issue the charter and begin tackling the many serious issues at hand.

Due to space limitations, attendance at the meeting is limited to principals plus one. Please confirm your participation with Sally Sherman (395-3902), and also advise her of the name and date of birth of the staff member who will attend with you.

I look forward to a worthwhile and lively discussion.

Sincerely,

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

Attachment

The Honorable Brent Scowcroft
Assistant to the President
for National Security Affairs
National Security Council
Washington, DC 20500

MEETING OF THE
FEDERAL COORDINATING COUNCIL
FOR SCIENCE, ENGINEERING, AND TECHNOLOGY

THURSDAY, MARCH 1, 1990
3:15 - 4:30 P.M.

THE ROOSEVELT ROOM

AGENDA

I. **Summary of Minutes of January 24 Meeting**

II. **Discussion of Draft FCCSET Charter**

III. **Review and Approval of Committee Structure: Discussion of Priority Areas for FCCSET Committee Consideration and Coordination**

IV. **Discussion of Draft Sample Committee Charter**

V. **Administrative**

- **FCCSET Membership**
- **Update on Executive Secretariat**

unclassified

memorandum for Brent Scowcroft

Through: Timothy E. Deal

From: Richard C. Barth

Subject: Second Meeting of FCCSET

Dr. Bromley has invited you to attend the second meeting of the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET). This meeting will largely deal with the administrative details of establishing this group, i.e., its charter, subordinate committees, etc.

Because there are no substantive policy issues on the agenda related to the science and technology mandate of the FCCSET, we recommend that Richard Barth attend the meeting as an observer.

The attached response to Dr. Bromley states that you will not attend this particular meeting.

Attachment

TAB I Draft Response to Dr. Bromley
TAB II Incoming Correspondance with Agenda

Unclassified

Memorandum for Dr. Bromley

From: Brent Scowcroft

Thank you for your invitation to attend the second meeting of the Federal Coordinating Council for Science, Engineering and Technology (FCCSET). I will be unable to attend this meeting of the Council, but appreciate your keeping me informed of its work. A member of my staff who monitors this issue for me, Dr. Richard Barth, Director, International Economic Affairs, will represent the NSC at this meeting.

Please note that we have reviewed your draft charter and will provide written comments prior to the March 1 meeting of the FCCSET.

Stuck on Scowcroft's desk since 2/22

UNCLASSIFIED
NSC/S PROFILE

RECORD ID: 9202180
RECEIVED: 23 MAR 92 12

TO: BRADY, P

FROM: SITTMANN

DOC DATE: 25 MAR 92
SOURCE REF:

KEYWORDS: SCIENTIFIC
DEFENSE BUDGET
RUSSIA
PROLIFERATION
INTELLIGENCE
WH REFERRAL

File
FCCSRT

PERSONS:

SUBJECT: PCAST PANEL RPT ON SCIENCE / TECHNOLOGY & NATL SECURITY

ACTION: SITTMANN SGD WH REFERRAL DUE DATE: 26 MAR 92 STATUS: C

STAFF OFFICER: BARTH LOGREF:

FILES: WH NSCP: CODES:

D O C U M E N T D I S T R I B U T I O N

FOR ACTION	FOR CONCURRENCE	FOR INFO
		BARTH
		EXECSEC

COMMENTS: _____

DISPATCHED BY MEA for GM DATE 3/25 BY HAND W/ATTCH

OPENED BY: NSJDA CLOSED BY: NSWEA DOC 2 OF 2

UNCLASSIFIED

CLOSE HOLD

Document No. 316911SS 2180

WHITE HOUSE STAFFING MEMORANDUM

DATE: 3/23/92 ACTION/CONCURRENCE/COMMENT DUE BY: WED. 3/25/92 COB

SUBJECT: PCAST PANEL REPORT ON SCIENCE, TECHNOLOGY AND NATIONAL SECURITY

	ACTION	FYI		ACTION	FYI
VICE PRESIDENT	☐	☐	HORNER	☐	☐
SKINNER	☐	☐	MCBRIDE	☐	☐
SCOWCROFT	☐	☐	MOORE	☐	☐
DARMAN	☑	☐	PETERSMEYER	☐	☐
BRADY	☐	☑	PORTER	☐	☐
BROMLEY	☐	☐	ROGICH	☐	☐
CALIO	☐	☐	ROLLINS	☐	☐
DEMAREST	☐	☐	SMITH	☐	☐
FITZWATER	☐	☐	YEUTTER	☐	☐
GRAY	☐	☐	_____	☐	☐
HOLIDAY	☐	☐	_____	☐	☐

REMARKS:

Please forward your comments directly to this office no later than COB, WEDNESDAY, MARCH 25. Thank you.

RESPONSE:

TO: PHILLIP BRADY March 25, 1992

CLOSE HOLD

The NSC staff has reviewed the PCAST report and has no objection to it being forwarded to the President.

William F. Sittmann

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

THE WHITE HOUSE

WASHINGTON

March 18, 1992

MEMORANDUM FOR THE PRESIDENT

FROM: D. ALLAN BROMLEY

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

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

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

Enclosure

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01a. Report	Report of the Panel on Science, Technology, and National Security: An Overview (6 pp.)	2/1992	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: National Security Council
Series: Barth, Richard, Files
Subseries: Subject Files
WHORM Cat.:
File Location: FCCSET [Federal Coordinating Council for Science, Engineering, and Technology] 1990-1992 [2]

Date Closed:	1/19/2010	**OA/ID Number:**	CF01467-005
FOIA/SYS Case #:	2005-0336-F	**Appeal Case #:**	
Re-review Case #:		**Appeal Disposition:**	
P-2/P-5 Review Case #:		**Disposition Date:**	
AR Case #:		**MR Case #:**	
AR Disposition:		**MR Disposition:**	
AR Disposition Date:		**MR Disposition Date:**	

RESTRICTION CODES

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

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

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

PRM. Removed as a personal record misfile.

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

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

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01b. Report	Report of the Panel on Science, Technology, and National Security (22 pp.)	2/1992	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: National Security Council
Series: Barth, Richard, Files
Subseries: Subject Files
WHORM Cat.:
File Location: FCCSET [Federal Coordinating Council for Science, Engineering, and Technology] 1990-1992 [2]

Date Closed:	1/19/2010	**OA/ID Number:**	CF01467-005
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]
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(b)(9) Release would disclose geological or geophysical information

APPENDIX A

Terms of Reference for the PCAST Panel on Science, Technology, and National Security

Withdrawal/Redaction Sheet
(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01c. Memorandum	Appendix A: To: Solomon Buchsbaum From: Allan Bromley Re: Revised Terms of Reference for PCAST Panel on Science, Technology, and National Security (2 pp.)	7/19/91	(b)(1)	

Collection:

Record Group: Bush Presidential Records
Office: National Security Council
Series: Barth, Richard, Files
Subseries: Subject Files
WHORM Cat.:
File Location: FCCSET [Federal Coordinating Council for Science, Engineering, and Technology] 1990-1992 [2]

Date Closed:	1/19/2010	**OA/ID Number:**	CF01467-005
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]
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(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

APPENDIX B

List of Panel Membership

PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY

Panel on
Science, Technology, and National Security

Chairmen

Solomon J. Buchsbaum	**Senior Vice President Technology Systems AT&T Bell Laboratories and Full Member of PCAST**
John S. Foster	**Chairman Defense Science Board**

Panel Members

Lew Allen	**Director Jet Propulsion Laboratory**
Norman Augustine	**Chairman and Chief Executive Officer Martin Marietta Corporation**
Ashton B. Carter	**Director Center for Science and International Affairs Harvard University**
Edward A. Frieman	**Director Scripps Institution of Oceanography University of California, San Diego**
George Heilmeier	**President and Chief Executive Officer Bellcore**
David Packard	**Chairman of the Board Hewlett-Packard Company and Full Member of PCAST**

Thomas J. Murrin	Dean School of Business and Administration Duquesne University and Full Member of PCAST

Office of Science and Technology Policy Representatives

Michelle Van Cleave	Assistant Director for National Security
Charles M. Herzfeld	Senior Director for the Panel