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DOCUMENT NUMBER: 9202486

ORIGINATOR: 02

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DIRECTORATE STATUS

FROM: DIEBOLD, JOHN: THE DIEBOLD INSTITUTE FOR PUBLIC POLICY STUDIES,
INC.

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 08/17/92

SUBJECT: ENCLOSED DOCUMENT REGARDING THE PROGRESS REPORT ON
THE INFORMATION-BASED INFRASTRUCTURE PROJECT.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
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D. Allan Bromley

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2406

The Diebold Institute for Public Policy Studies, Inc.

August 17, 1992

RECEIVED
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MAIL ROOM OSTP

Dear Allan,

I thought you might be interested in the enclosed Progress Report on the Information-Based Infrastructure Project which The Diebold Institute is conducting.

If you would like any additional information or copies of any of the Working Papers listed in Appendix B of the report, please let me know.

My colleagues and I would be most interested in your reaction to this document as a guide to our future work on this project.

With best wishes.

Sincerely,

J. Diebold

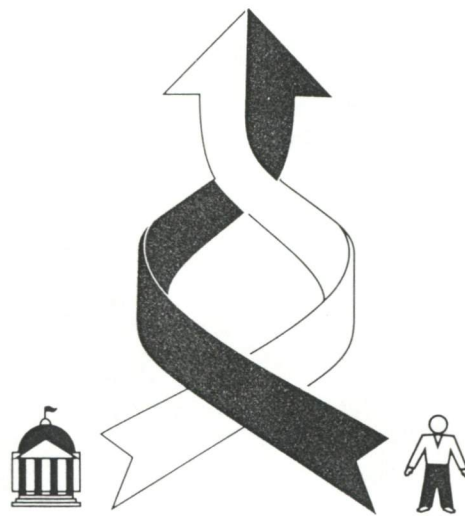
John Diebold

Enclosure

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
Old Executive Office Building (Room 358)
17th St. & Pennsylvania Ave., N.W.
Washington, DC 20506

INFRASTRUCTURES FOR THE 21ST CENTURY

A Progress Report on the
Information-Based Infrastructure Project



The Diebold Institute for Public Policy Studies, Inc.

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DOCUMENT NUMBER: 9201236
DIRECTORATE STATUS

FROM: YEUTTER, Clayton: COUNSELLOR TO THE PRESIDENT FOR DOMESTIC POLICY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 04/07/92

SUBJECT: HE IS FORWARDING A LETTER FROM DR. BILL WATTENBURG, CALIFORNIA STATE UNIVERSITY. HE ASKS FOR DR. BROMLEY'S COMMENTS.

DIRECTORATE
ASSIGNED: INTERNATIONAL/POLICY
STAFF
ASSIGNED: -

ACTION
REQUIRED: REVIEW FOR DAB
STAFF
ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 04/17/92
DATE COMPLETED:
STAFF DUE DATE 4/17
DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
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LIFE SCIENCES

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THE WHITE HOUSE
WASHINGTON

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DATE: 4-7-92

92 APR 10 A 9: 47

TO: DR. ALLAN BROMLEY

OSTP
MAIL ROOM

FROM: CLAYTON YEUTTER
Counsellor to the President for
Domestic Policy

Allan, your reactions??

CB
into system, DAB &
ADS have copy

FAX: THE WHITE HOUSE (202) 466-2397
ATTENTION: MARILYN, CHIEF OF STAFF'S OFFICE

MARCH 26, 1992

TO: PRESIDENT GEORGE BUSH
SAMUEL SKINNER, CHIEF OF STAFF
BRENT SCOWCROFT, NATIONAL SECURITY ADVISOR

SUBJECT: A MAJOR NO-NEW-COST, ALL-WIN DOMESTIC INITIATIVE
THAT WILL BE WELCOMED BY THE WORKING AMERICAN
PUBLIC WITH THE SUPPORT YOU GOT IN THE GULF WAR

FROM: DR. BILL WATTENBURG, THE UNIVERSITY FOUNDATION
CALIFORNIA STATE UNIV. CHICO.
CONSULTANT, LAWRENCE LIVERMORE NATIONAL LABORATORY
(916) 894-6844 FAX 893-1317

YOU CAN DECLARE WAR ON AMERICA'S REAL DOMESTIC PROBLEM WITH A BOLD STROKE THAT WILL CATCH YOUR POLITICAL CRITICS WITH THEIR THEIR BRAINS DISENGAGED--AND HARKEN BACK OUR VICTORIES IN THE COLD WAR AND GULF WAR TO THE WORKING AMERICAN PUBLIC: ANNOUNCE THAT YOU ARE DIRECTING THE AMERICAN DEFENSE INDUSTRIES AND OUR GREAT SCIENTIFIC LABORATORIES SUCH AS LIVERMORE AND LOS ALAMOS TO IMMEDIATELY DEVOTE, SAY, TWENTY PERCENT OF THEIR PRESENT BUDGETS TO JOINT VENTURES WITH AMERICAN DOMESTIC INDUSTRIES TO DESIGN AND MANUFACTURE ADVANCE PRODUCTS FOR THE WORLD MARKETS.

YOU WILL RECIEVE IMMEDIATE APPLAUSE FROM WORKING AMERICANS AND WALL STREET WHO KNOW THAT OUR ADVANCED DEFENSE TECHNOLOGY THAT WON THE COLD WAR IS OUR GREATEST REMAINING ASSET IN THE GLOBAL RACE FOR TECHNOLOGICAL LEADERSHIP. YOU WILL ALSO KILL THREE BIRDS WITH ONE STONE:

1. YOU WILL PROVIDE A NEW HIGH PURPOSE FOR OUR MOST VALUABLE DEFENSE INDUSTRIES AND THEIR CONTINUING SUPPORT BY DIRECTING THEM TO ATTACK OUR GREATEST ENEMY NOW--THE THREAT TO OUR ECONOMIC STABILITY--AND THEREBY KEEP THIS INVALUABLE RESOURCE INTACT WITHOUT HAVING TO FIGHT THE POLITICAL FORCES WHO WANT TO DISBAND OUR DEFENSE CAPABILITY FOR UNPRODUCTIVE DOMESTIC PORK-BARREL PROGRAMS THAT WILL ONLY MAKE US LESS COMPETITIVE.

2. YOU WILL INSTILL NEW FAITH IN AMERICAN COMPETITIVENESS AND HEALTHY FEAR IN OUR COMPETITIORS WHO SAT ON THE SIDELINES WHILE WE PROTECTED THEM. OUR DEFENSE TECHNOLOGY IS THE ONE ASSET WE HAVE THAT THEY STILL RESPECT.

3. YOU WILL COMPLETELY DISARM YOUR POLITICAL CRITICS WHO ARE NOW CAMPAIGNING WITH PROMISES TO SLOW DOWN DEFENSE CUTBACKS TO "ALLOW EASIER TRANSITIONS FOR DEFENSE WORKERS"--WITHOUT PROPOSING A SINGLE PRODUCTIVE PLAN TO PAY FOR AND JUSTIFY THIS TO THE AMERICAN TAXPAYERS. BUT THEY WILL SOON GRAB THIS IDEA.

THIS IS THE REAL "PEACE DIVIDEND" AMERICAN WORKERS WANT. BUT NO ONE HAS TOLD THEM HOW WE START--TODAY--BEFORE IT'S TOO LATE.

Clayton:
Here's some
original
thinking that
might be
useful.

Marilyn

Soon To Appear in Major Newspapers

Dr. Bill Wattenburg
711 Parkwood Dr.
Chico, Ca. 95928
(916) 894-6844 FAX 893-1317
March 24, 1992

DON'T DESTROY OUR DEFENSE INDUSTRY--REDEFINE THE ENEMY

MOST OF US, I BELIEVE, HAVE THE UNEASY FEELING THAT ANY SO-CALLED "PEACE DIVIDEND" BY QUICKLY CUTTING DEFENSE SPENDING WILL BE SQUANDERED BY OUR VOTE-BUYING POLITICIANS ON GIVE-AWAY PROGRAMS FOR THE LEAST PRODUCTIVE PEOPLE IN OUR STRUGGLING ECONOMY. THIS WILL BE ECONOMIC DISASTER. IT WILL ONLY ADD NEW TAX BURDENS ON THE WORKING PEOPLE--WITH NO NEW PRODUCTS FOR THEM TO BUILD AND SELL TO THE WORLD. WE WON'T BE ABLE TO SUPPORT EVEN OUR MOST DESERVING RETIRED PEOPLE WITH A SECOND-RATE ECONOMY.

OUR PRODUCTIVE CITIZENS PAID DEARLY, AND GLADLY IN MOST CASES, TO WIN THE COLD WAR FOR THE REST OF THE WORLD-- WHILE OUR STRONGEST ALLIES CONCENTRATED ON TAKING OVER OUR ECONOMY AND OUR JOBS HERE AT HOME.

THERE IS ONLY ONE FITTING ANSWER TO THIS NOW: CHALLENGE OUR FOREIGN COMPETITORS THE SAME WAY WE PROTECTED THEM FROM THE SOVIET THREAT FOR FOUR DECADES. QUICKLY TURN OUR DEFENSE INDUSTRIES AND SCIENTIFIC LABORATORIES TO THE TASK OF BUILDING ADVANCED PRODUCTS FOR AMERICAN INDUSTRY TO HELP US CATCH UP-- DON'T DISMANTLE OUR GREATEST REMAINING TECHNOLOGICAL STRENGTH THAT WE NEED TO COMPETE WITH ASIA AND EUROPE.

THE PRESIDENT AND CONGRESS MUST IMMEDIATELY ORDER OUR DEFENSE INDUSTRIES AND LABORATORIES TO REDIRECT THIRTY PERCENT OF THEIR EFFORTS IN THE NEXT TWO YEARS TO THE DESIGN AND IMPROVEMENT OF NEW AND BETTER COMMERCIAL PRODUCTS IN COOPERATION WITH AMERICAN INDUSTRY. IF OUR DEFENSE INDUSTRIES AND SCIENTIFIC LABORATORIES ARE GUARANTEED NO LARGE CUTS IN THEIR BUDGETS FOR A YEAR OR TWO, THERE WILL BE A STAMPEDE ON THEIR PART TO FORM JOINT VENTURES WITH AMERICAN INDUSTRY FOR THIS PURPOSE. WITHIN TWO YEARS, PRIVATE INDUSTRY WILL BEGIN PAYING FOR THOSE PROJECTS WHICH HAVE SHOWN ENOUGH IMPROVEMENT IN AMERICAN COMPETITIVENESS TO JUSTIFY CONTINUED FUNDING. BY THAT TIME, MANY IN THE DEFENSE INDUSTRY WILL HAVE MOVED INTO PRIVATE ENTERPRISE. THE TRANSITION FROM DEFENSE TO INDUSTRY WILL TAKE PLACE ON ITS OWN FROM THERE ON. NO NEW BUDGETS ARE REQUIRED. JUST KEEP IN PLACE WHAT WE HAVE FOR A WHILE--AND USE IT WISELY WHERE IT IS.

AFTER SEEING THE TECHNOLOGY THAT WAS DISPLAYED IN THE DESERT WAR, I THINK MOST WOULD BELIEVE THAT OUR DEFENSE INDUSTRIES, TURNED LOOSE WITH THE SAME MONEY, COULD HELP AMERICAN MANUFACTURERS BUILD SUPERIOR CARS, OR TURN OUR DEFENSE ELECTRONICS TECHNOLOGY INTO NEW AND EXOTIC CONSUMER PRODUCTS.

IF WE CAN REGAIN EVEN ONE THIRD OF THE AUTOMOBILE MARKET OR THE CONSUMER ELECTRONICS MARKET WE LOST WHILE WE WERE FIGHTING THE COLD WAR, THE JUMP IN OUR GNP AND TAX BASE WILL MAKE UP FOR CONTINUING OUR PRESENT DEFENSE BUDGET FOR THE NEXT TEN YEARS. WE WILL HAVE ANOTHER TEN MILLION JOBS IN PRIVATE INDUSTRY-- INSTEAD OF TWO MILLION MORE UNEMPLOYED IF WE DISMANTLE OUR DEFENSE INDUSTRIES AND THROW AWAY OUR REMAINING TECHNOLOGICAL LEADERSHIP.

THE IMMEDIATE RELEASE OF HUNDREDS OF THOUSANDS OF DEFENSE EMPLOYEES INTO OUR STRUGGLING ECONOMY BEFORE THERE ARE NEW PRODUCTS TO MANUFACTURE WILL DEPRESS OUR ECONOMY EVEN FURTHER. IT IS FAR BETTER FOR THEM TO STAY IN PLACE AND REDIRECT THEIR DESIGN EFFORTS TO IMPROVING AMERICAN COMPETITIVENESS FOR THE NEXT FEW YEARS--AND INSURE THAT OUR DEFENSE TECHNOLOGY IS FULLY TRANSFERRED TO INDUSTRY. THE HIGHLY TRAINED PROFESSIONALS IN OUR DEFENSE INDUSTRIES WILL TURN THEIR TALENTS TO PRIVATE ENTERPRISE AS QUICKLY AS THEY MET THE SOVIET CHALLENGE IF THEY KNOW THERE IS NO OTHER CHOICE. BUT THEY MUST BE GIVEN THE CHANCE. THEY DID THE JOB FOR US IN WINNING THE COLD WAR.

THINK FOR A MOMENT ABOUT WHAT WE WOULD STILL BE DOING TODAY IF THE SOVIET NUCLEAR THREAT STILL EXISTED. WITHOUT QUESTION, WE WOULD CONTINUE TO PAY THE FULL DEFENSE COSTS FOR EVER MORE ADVANCED AND EXPENSIVE WEAPONS TO COUNTER THIS THREAT--AND FALL FARTHER AND FARTHER BEHIND OUR COMPETITORS IN WORLDWIDE COMMERCIAL MARKETS. BUT WE HAVE BEEN BLESSED WITH A WINDFALL.

THE AMAZING DISAPPEARANCE OF THE THREAT OF NUCLEAR ANNIHILATION IS BLESSING ENOUGH--EVEN IF WE WERE FORCED TO CONTINUE SPENDING THE MONEY. INDEED, WHAT DO YOU THINK THE ANSWER WOULD HAVE BEEN FROM MOST ANY THINKING PERSON TWO YEARS AGO TO THE QUESTION: "IF WE COULD BUY A GUARANTEE THAT THE SOVIET UNION WILL NEVER MOUNT A NUCLEAR ATTACK, WOULD YOU APPROVE THE SAME DEFENSE BUDGET FOR THE NEXT TWENTY YEARS?" NOT MANY WHO UNDERSTOOD THE EVENTUAL PROBABILITY OF MUTUAL ASSURED DESTRUCTION WOULD HAVE SAID "NO". SO HOW CAN WE BE SO STUPID THAT WE DON'T COUNT OUR BLESSINGS NOW AND GLEEFULLY DEVOTE THE SAME TWENTY PERCENT OF OUR NATIONAL BUDGET TO OUR REMAINING ENEMY--ECONOMIC SURVIVAL--BEFORE WE END UP AS THE REAL LOSERS?

WE HAVE LOST WELL OVER FIFTY PERCENT OF OUR FORMER ECONOMIC SUPERIORITY TO OTHER COUNTRIES WHICH DEVOTED ALL THEIR ENERGIES TO TAKING OUR COMMERCIAL MARKETS AWAY FROM US-- WHILE WE WERE FIGHTING THE COLD WAR FOR THEM. THE U.S. IS NOW LIKE THE EXHAUSTED RUNNER WHO FINISHED THE MARATHON--AND THEN DISCOVERED THAT THE OTHERS WHO DROPPED OUT AND SAT COMFORTABLY ON THE SIDELINES HAVE EATEN ALL THE FOOD AT THE WINNERS TABLE.

OUR DEFENSE WORKERS CAN HELP AMERICA BUILD AGAIN THE FINEST AND MOST ADVANCED PRODUCTS IN THE WORLD--IF WE KEEP SOME FOOD ON THE TABLE FOR THEM. BUT TIME IS RUNNING OUT. OUR GOVERNMENT MUST NOW IMMEDIATELY CONCENTRATE THE BEST WE HAVE TO THIS TASK. THERE WERE FEW COMPLAINTS THAT OUR TAXPAYERS WERE SUBSIDIZING OUR DEFENSE INDUSTRY TO COUNTER THE SOVIET THREAT WHEN WE FEARED FOR OUR LIVES. OUR DEFENSE INDUSTRY CAN NOW HELP RESCUE THE TAXPAYERS.

DID WE WIN THE COLD WAR TO CONDEMN OUR FUTURE GENERATION TO A SECOND-CLASS STANDARD OF LIVING?--WHERE OUR COLLEGE GRADUATES WILL BE LUCKY TO WORK FOR THE FOREIGN OWNERS OF AMERICAN INDUSTRY? I DON'T THINK SO. WE HAVE ONE QUICK WAY TO STOP THAT. HOWEVER, IN THE MIDST OF A POLITICAL CLIMATE WHERE MANY THINK THEY SEE AN EASY WAY TO PUT MORE MONEY IN UNPRODUCTIVE POCKETS, IT WILL TAKE BOTH WISDOM AND GUTS TO DO WHAT MUST BE DONE. TO GUARANTEE OUR ECONOMIC SURVIVAL, WE DESPERATELY NEED NOW MORE OF THE KIND OF LEADERSHIP THAT FINALLY PUT AN END TO THE SOVIET THREAT TO THE FREE WORLD.



Bill Wattenburg

A Man of of Many Talents

Who is the man behind the microphone on Saturday and Sunday nights? A truck driver? A football player? The youngest-ever Ph.D. graduate in science & faculty member of UC Berkeley? Best-selling author? Will the real Bill Wattenburg please stand up.

The fact is Dr. Bill Wattenburg is all of the above and then some! He is also one of the most popular and controversial public figures on West Coast talk radio and you can hear him on KGO every Saturday and Sunday night from 10pm to 1am.

When asked how he got where he is today, Bill says it began when his father walked up to him one afternoon on a logging job and threatened to "knock him on his butt" if he didn't get on the Greyhound bus that night and go to UC Berkeley where he had been offered a scholarship. He was fifteen years old and had never been out of the mountains of Northern California, except for a few trips to nearby Reno. His high school physics teacher had given him SAT and National Science Foundation exams before he graduated and had insisted that he apply to several universities. He had never opened the envelopes that came back. But his father, who never finished high school, had read his test scores and the scholarship offers.

Seven years later, in 1961, Bill finished with a Ph.D. in electrical engineering and physics at Berkeley and was offered a position as assistant professor of electrical engineering. The following year he was captivated by President John F. Ken-

nedy's call for an end to atmospheric nuclear testing and the development of cleaner underground testing procedures. Subsequently, he took a leave of absence to move to the Livermore National Laboratory where he worked in the physics division on the design of nuclear devices and the first underground nuclear tests. He then spent six months at the Nevada nuclear test site as a group leader in the successful testing of their designs. He was the co-inventor of still-classified nuclear test measurement and diagnostic procedures that are the basis of United States nuclear test ban treaty verification procedures today.

In 1964, Bill returned to teaching and research at Berkeley. Three years later, he co-founded Berkeley Scientific Laboratories (BSL) with physicist Dr. Donald Glaser (1960 Nobel Prize) and served as president of the rapidly growing company for the next five years. The scientific staff at BSL assisted in the design and testing of the spacecraft guidance computer for the Apollo man-to-the-moon project and later developed the first small medical data computer systems used by hospitals around the world to automate testing procedures in clinical and radiology laboratories.

Wattenburg left BSL after it had grown to a multi-million dollar enterprise and was acquired by a conglomerate. He returned to teaching. "It's best you turn your product over to professional directors, get the hell out of their way, take your money and go build something else. Besides, I have to try something new every few years anyway." And indeed he has.

Bill also holds dozens of patents and patent applications on ideas as diverse as computer design; medical diagnostic instruments; power line communications; tennis training devices for handicapped people; credit card security schemes; and home alarm systems. Asked which one he was most proud of, he singled out the home alarm systems he invented in 1967. He holds the original patent on the use of existing electrical house wiring as a means for communicating alarm signals from sensors, such as smoke detectors, to receivers placed elsewhere in the building. This scheme is now used by many all over the world. He also invented one of the first inexpensive smoke alarms for homes which has been installed in hundreds of thousands of homes throughout the U.S. in the '70s.

Wattenburg's media career began in 1972

when KGO's program director at the time, Bob Benson, asked him to do a few Sunday afternoon talk shows "just for fun." He has never left the microphone since, except for a year off to do a television show. During a typical three hour talk show, he will answer callers' questions on a variety of subjects ranging from the latest discoveries in science or medicine to car repairs to elementary school math. He seldom has guests in the studio and promises his audience only one thing: "You listen to this show for the next three hours and I guarantee that you and I both will learn something that we never heard about, cared about or thought about before." In his time off, when he's not writing or playing roles in Clint Eastwood movies, Bill enjoys a good game of tennis and plays in many tournaments around the country. He also spends two to three weeks each year fighting forest fires with U.S. Forest Service teams. Bill Wattenburg is, indeed, a man of many talents.

From The KGO Radio Resource File...

- * Zia Wesley-Hosford, skin care expert
(415) 543-SKIN
- * Sally Socolich, bargain hunter
Bargain Hunters Hotline (newsletter)
P.O. Box 144
Moraga, CA 94556
- * Dan Cassidy, Nat'l Scholarship
Research Service
(707) 546-NSRS
- * Bob Brinker's Marketimer Newsletter
(201) 359-8838
- * Mark Anderson, Lemon Law Attorney
(415) 861-2334

KGO CALL-IN LINES

San Francisco . . (415) 441-TALK
East Bay (415) 832-TALK
North Bay (415) 454-TALK
South Bay (408) 269-TALK
Peninsula (415) 342-TALK
Contra Costa . . (415) 938-TALK

Special show numbers:

Dr. Dean Edell's
Healthtalk (800) 548-TALK
Bob Brinker's
Moneytalk (800) 423-TALK

THE WHITE HOUSE
WASHINGTON

April 9, 1992

MEMORANDUM TO CLAYTON YEUTTER

FROM: D. ALLAN BROMLEY *Alan*

SUBJECT: THE BILL WATTENBURG PROPOSAL

By coincidence the Wattenburg program that you sent over--as well as the recent NAS/NRC report by a group chaired by Harold Brown (Carter's Secretary of Defense) have a number of ideas in common with a proposal that I made originally to John Sununu and, more recently to Henson Moore, for a major Presidential event focussing on Technology for a Productive America.

I enclose herewith copies of the recent memoranda of February 24 and April 8 to Henson. As you will observe, I am enthusiastic about showcasing the very real accomplishments of the Bush Administration in this area to take the initiative away from the Democrats. I also am convinced that using the bully pulpit, the President can mobilize our strengths in technology and industrial production and in so doing greatly improve our competitiveness in the international market place. Only the President can do this.

If you agree with the general ideas in my memos to Henson, who is the only person as yet outside of my office with whom I have discussed them, then I would suggest that we might wish to use the Science and Technology working group of your PCG to refine and develop the ideas for possible Presidential use. Since the President is now committed to speaking at Pasadena on May 28 this might be a target date.

I would hope that we could get the President to speak twice, on each of two consecutive days with other unrelated activities perhaps in between. In the first speech he would highlight the accomplishments of his Administration and challenge the group. In the second he would announce new initiatives such as those suggested in my memos to Henson as well as any that may emerge from the conference breakout sessions with the industrial and labor leaders.

I would welcome your comments and reactions.

Enclosure

"Document Control"

TYPE: INFORMATION

DOCUMENT NUMBER: 9201047

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: BRETSCHER, Carl: NATIONAL SCIENCE FOUNDATION

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 03/27/92

SUBJECT: RE: A HEARING ON PRIORITY SETTING IN SCIENCE.

DIRECTORATE
ASSIGNED:

STAFF
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ACTION
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ACTION:

SENDER'S DUE DATE:

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COPIES TO: D. Allan Bromley
ALL ASSOCIATE DIRECTORS
Vickie Sutton
Bill Wells

RL needs to be added

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NATIONAL SCIENCE FOUNDATION
1800 G Street NW
Washington DC 20550
Office of Legislative and Public Affairs

OSTP
MAIL ROOM

Please Deliver The Following Pages To:

NAME: Dan Hawkins PHONE: 456-6272
LOCATION: OSTP FAX: 395-3261

FROM: Carl Bratscher DATE: 3/27/92
PHONE: (202) 357-9494 FAX: (202) 357-9869

Pages of material including this cover sheet: _____

REMARKS: Attached is info on a
hearing that will be of
interest to ADs, Vickie, DAB,
+ Rachel L., in particular.

CLIP and SAVE



NATIONAL SCIENCE FOUNDATION
Office of Legislative and
and Public Affairs
1800 G St NW Room 527
Washington DC 20550
Phone: 202/357-9494.
FAX: 202/357-9869.

March 24, 1992

MEMORANDUM

TO: Members, Subcommittee on Science
FROM: Rick Boucher, Chairman
SUBJ: Hearing on Priority Setting in Science

Barry Add
225-8844

Summary

On Tuesday, April 7, 1992, beginning at 9:30 a.m. in room 2318 Rayburn House Office Building, the Subcommittee on Science will hold the first of a series of three hearings on the process of priority setting for federally funded research. This set of hearings is designed to assess the effectiveness of the current process and develop recommendations for improvement. As stated in a 1991 Office of Technology Assessment (OTA) report¹, the renewed interest in this issue stems in part from concerns over the growing mismatch between research needs/opportunities and the capacity of the public sector to provide the necessary resources; limited growth in the availability of research funds as a result of the budget deficit; and the need to ensure that federal investments in research contribute to national goals.

The April 7th hearing will examine the adequacy of the current process of setting priorities in the federal funding of research, by looking at examples of priority setting activities carried out by federal agencies, the research community and the Federal Coordinating Council for Science, Engineering and Technology (FCCSET) process of the Office of Science and Technology Policy (OSTP). At least one view of the problem states that the priority setting process is not systematic, and the criteria used for selecting research opportunities are not explicit.

A tentative witness list for the hearing is attached.

¹ U.S. Congress, Office of Technology Assessment, Federally Funded Research: Decisions for a Decade, OTA-SET-490 (Washington, DC: U.S. GPO, May 1991).

Objectives for the Series

It is evident that regardless of the level of federal funding for research, research opportunities will continue to outstrip resources, and priorities for the federal support of research must be established. What is less clear is how the existing system for setting priorities in research funding should be improved. The objectives are to: (1) assess the current process for setting priorities in the federal funding of research, including the roles and responsibilities of the research community, the Executive Branch and the Congress; (2) identify areas where the process needs improvement; and (3) make practical recommendations for improving the priority setting process, if needed.

The assessment will include the roles and responsibilities of the research community and the Federal Government in the priority setting process at three levels: by the research community within a discipline or field of research; within a Federal mission agency, focusing on priority setting first between research programs and other agency programmatic activities, and then focusing on priority setting within the research programs; and across fields and federal agencies as represented by the development of Presidential initiatives through the FCCSET process.

The criteria used by the research community and the Federal Government for selecting research priorities will be examined. There is a general agreement that scientific merit and mission relevance should remain the principal criteria for decision-making in the federal funding of research. Additional criteria such as the development of human resources and geographical equity have been suggested. The need to clarify the criteria used in ranking research projects across fields will be considered.

The first hearing will review experiments in priority setting within the research community and within and among federal agencies. The second hearing will review the overall adequacy of the current process of priority setting for federally funded research and develop recommendations for improving the current priority setting process, if needed.

Related issues concerning the health, size, and structure of the academic research enterprise will be examined in a subsequent series of hearings. These issues include exploration of the factors leading to growth of the enterprise and the consideration of the need to manage growth; the division of responsibility among the public and private sectors for supporting academic research; improvement in the administration of academic research, particularly, alternative research selection processes, and the increasing cost of academic research; among others.

Background

The initial mechanism for the federal funding of research called on the Federal Government to be the main sponsor and the academic community to be the primary performer of basic research. The Federal Government would provide the funds, and the research community would decide the allocation of those funds among competing opportunities and exercise stewardship over those funds. The rationale for this agreement was based on the premise that the research community is best able to decide what research to fund and that the public will benefit from the new knowledge, products, and processes that, over the long-term, result from this research. This relationship has worked well, and scientific and engineering research have made significant contributions to the Nation's health and economic well-being.

Although there has been real growth in research funding, research performers are concerned because research opportunities continue to exceed resources, a circumstance particularly noted during times of budget deficits. This situation is likely to continue for the foreseeable future. Even without resource constraints, questions have been raised concerning the process for deciding priorities within and among fields of research. In response to internal and external changes in the research environment, research sponsors and performers have raised questions about the priority setting process for the Federal funding of research. And, concerns are being raised about decisions to fund megaprojects and large facilities in the light of resource needs in other research areas, including the need to maintain a qualified pool of talent.

Research sponsors are concerned about the continued contribution of research to meeting national needs, such as economic competitiveness and environmental and public health issues. The Federal Government has been criticized for not making the criteria used for setting research priorities explicit and for the lack of a mechanism for evaluating the total federal research portfolio against some set of national objectives.

To a greater or lesser extent, priority setting in the federal funding of research is carried out at different levels by the research community and the Federal Government. The specific focus of this set of hearings is on the process of making choices within or among fields of research; within and among federal agency programs; between megaprojects; and among people, instrumentation and facilities.

There are various examples of priority setting at each level in the hierarchy. These include the systematic priority setting activities by a research community within a particular field. Federal agencies also set priorities through the annual process of developing budget proposals and allocations. More recently, the process for establishing priorities across various fields of research and among federal agency programs has been undertaken by FCCSET.

Chronology of Congressional Interest

In 1976, in an effort to improve the planning and coordination of science and technology in the U.S., Congress passed the National Science and Technology Policy, Organizations, and Priorities Act (P.L. 94-282) which created OSTP. The Director of OSTP was authorized to advise the President on S&T issues, including related budget matters; evaluate the scale, quality and effectiveness of the Federal S&T effort; assist the Office of Management and Budget (OMB) with an annual review of S&T in the budget; and provide leadership and coordination in federal research and development programs. This Act also created FCCSET, to coordinate the activities of federal R&D agencies in meeting national objectives, and designated the OSTP director as Chairman of FCCSET.

In 1982, the Subcommittee on Science, Research, and Technology held a hearing on Setting Priorities in Science. Witnesses discussed the need to set science priorities, to determine how the priorities of federal agencies and private industry were established, and to identify the problems inherent in choosing among research fields. Many of the issues reviewed in the hearing are still current today.

In 1988, in response to a request from the House Budget Committee, the National Academy of Sciences prepared a report² that was intended to improve the priority setting process by providing a method that could be used by both the Executive Branch and the Congress in determining funding and organizational priorities for science and technology. Subsequent to the release of this report, the Subcommittee held a hearing to identify mechanisms for evaluating the adequacy of federal funding support for science and technology, determining promising new directions in research, and establishing priorities in the federal R&D budget.

The hearing also explored the degree to which OSTP fulfilled the broad science policy role mandated in P.L. 94-282. The hearing noted OSTP's failure to provide the long-range planning needed to develop a coherent national R&D effort, as well as its failure to promote adequate coordination between federal agencies. Both the report of the National Academy of Sciences and the witnesses reiterated the call for OSTP and the President's science advisor to play a more prominent role in the prioritization and budgeting process for science and technology. The witnesses recommended that OSTP provide the technical expertise needed by OMB in the development of an S&T budget. To accomplish this goal, they noted that OSTP must be adequately staffed and given a seat at the OMB budget review table.

² Federal Science and Technology Budget Priorities: New Perspectives and Procedures, a report of the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine, National Academy Press, Washington, DC, 1988.

Focus of the April 7th Hearing

The planning process used by the National Institutes of Health (NIH) and the National Science Foundation (NSF), including the role of the National Science Board will be reviewed.

Priority setting activities carried out every ten years by a panel of astronomers under the auspices of the National Academy of Sciences, and the Ecological Society of America effort to develop the Sustainable Biosphere Initiative will be reviewed

Examples of priority setting activities that establish priorities for funding among different disciplines or areas of research or among megaprojects are more difficult to find. The process of selecting Presidential Initiatives through FCCSET will be reviewed.

In the course of the hearing, questions we will address include:

1. What is the current process of priority-setting within a field of research, within a federal agency, among megaprojects or different fields of research, and across federal agencies?
2. What are the appropriate roles and responsibilities of the research community, federal research agencies, the Executive Branch, and the Congress in the priority-setting process?
3. What has been the role of the research community in the priority-setting process? How does one involve the research community in setting priorities within and among fields of research? What is the capability of federal agencies to receive and act on this advice?
4. How are priorities set by federal agencies, within and among research programs, through the annual budget process? How effective is the current process for setting priorities among research programs? What should be done to improve the process?
5. What are the criteria and the role of criteria in setting priorities? Are the current criteria adequate, or do they need to be expanded? Who should establish criteria? Is there a conflict-of-interest in asking the scientists, who will be the recipients of federal funding to establish the criteria?
6. Are priorities among research opportunities decided in a way that best advances the national interest? What role should the National Science Board have in the priority-setting process?

In addition to the role of OSTP, the hearing considered the need to establish and articulate criteria for setting priorities within and among research fields, as well as for evaluating large science and technology projects which are increasing their share of current and future R&D budgets. The Committee on Science, Space, and Technology, in 1989, issued a report which contained the following recommendations, among others: that the 1988 National Academy of Sciences report be implemented beginning with the preparation of the FY 1992 budget and that OSTP and OMB establish a procedure for establishing priorities among megaprojects, including the specification of consistent criteria.

In 1991, OTA released a report³, requested by the Committee on Science, Space, and Technology, which examined the challenges facing the federal research system in the 1990s. A prominent feature of this report was the issue of setting federal priorities in the support of research. The report identified three needs with respect to the priority setting process: make the criteria used in selecting various areas of research and megaprojects consistent and explicit; establish a mechanism for evaluating the total federal research portfolio in terms of its contribution to national objectives; and expand the criteria used to set priorities, beyond scientific merit and mission relevance, to include other criteria that measure the contribution of research programs to strengthen future research capability. In addition, the report called for strengthening the Executive Branch and Congressional priority-setting mechanisms, iterative planning, and crosscutting evaluation of megaprojects which affect the ability to start new projects in the future.

³ U.S. Congress, Office of Technology Assessment, Federally Funded Research: Decisions for a Decade, OTA-SET-490 (Washington, DC: U.S. GPO, May 1991).

Setting Priorities in Science

9:30 a.m. - 2318 RHOB

April 7, 1992

TENTATIVE WITNESS LIST

Panel 1: Priority setting and planning by federal agencies

Dr. Bernadine Healy
Director
National Institutes of Health
Bethesda, MD

Dr. Walter Massey
Director
National Science Foundation
Washington, DC

Dr. James Duderstadt
Chairman
National Science Board
Washington, DC

Panel 2: Priority setting by the research community

Dr. John N. Bahcall
Institute for Advanced Study
Princeton, NJ
and
Chairman, Astronomy and
Astrophysics Survey Committee

Dr. Paul Risser
Vice-President and Provost
University of New Mexico
Albuquerque, NM
and
Past President, Ecological
Society of America

Panel 3: Priority setting by the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET)

Dr. Kumar Patel
Executive Director
Materials Science and Engineering
AT&T Bell Laboratories
Murray Hill, NJ

Dr. William C. Clark
Professor of Technology and Policy
Kennedy School of Government
Harvard University
Cambridge, MA

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 MARLYN LLOYD, Tennessee
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 HOWARD WOLPE, Michigan
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 DAVE MCGURRY, Oklahoma
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 JERRY P. COSTELLO, Illinois
 JOHN TANNER, Tennessee
 GLEN BREWSTER, Alabama
 PETE GEREN, Texas
 RAY THORNTON, Arkansas
 JIM HADDONS, Florida
 TIM ROEMER, Indiana
 BUD CRAMER, Alabama
 GREG HENRY, New Hampshire
 MICHAEL J. KOPETZKE, Oregon
 JOAN KELLY HOWE, Missouri
 ELIOT L. SHULZ, New York
 JOHN W. OLIVER, Massachusetts

U.S. HOUSE OF REPRESENTATIVES
 COMMITTEE ON SCIENCE, SPACE,
 AND TECHNOLOGY

SUITE 2320 RAYBURN HOUSE OFFICE BUILDING
 WASHINGTON, DC 20515-8301
 (202) 225-8371

March 25, 1992

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 Chief Clerk
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 Republican Chief of Staff

Dr. Walter Massey
 Director
 National Science Foundation
 1800 G Street, N.W.
 Washington, DC 20550

Dear Dr. Massey:

The Subcommittee on Science will hold a hearing on April 7, 1992 to examine the adequacy of the current process of setting priorities in the federal funding of research, by looking at examples of planning and priority setting activities carried out by federal agencies, the research community and the Federal Coordinating Council for Science, Engineering and Technology (FCCSET) of the Office of Science and Technology Policy (OSTP). We invite you to appear before the Subcommittee as a member of Panel 1 which will focus on priority setting and planning by federal agencies. The hearing will begin at 9:30 a.m. in Room 2318 of the Rayburn House Office Building. A tentative witness list and memorandum describing the focus of the hearing are enclosed.

The purpose of the hearing is to assess the current process for setting priorities in the federal funding of research, including the roles and responsibilities of the Executive Branch and the research community; and to identify areas where the process needs improvement. The specific focus of this set of hearings is on the process of making choices within or among fields of research; within and among federal agency programs; between megaprojects; and among people, instrumentation and facilities. The Subcommittee would appreciate your views regarding the following issues:

Dr. Walter Massey

March 25, 1992

Page 2

- the existing process of setting priorities, including the roles and responsibilities of the research community, the Executive Branch and the Congress, at three levels: (1) by the research community within a discipline or field of research; (2) within a Federal mission agency; and (3) across fields and federal agencies as represented by the research initiatives developed through the FCCSET process;
- what you found to be the shortcomings in the existing National Science Foundation (NSF) annual planning and budgeting process, that led you to the current strategic planning effort;
- lessons learned from the current strategic planning efforts at NSF;
- the current and potential role of the National Science Board in establishing national priorities for research; and
- the criteria that ought to be used by the research community and the Federal Government for selecting research priorities;

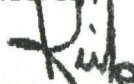
as well as any others that you believe are pertinent to the focus of the hearing. In addition, the Subcommittee would welcome your practical recommendations for enhancing the priority setting process.

A copy of the Subcommittee rules governing presentation of testimony is enclosed for your information. Your written statement, which may be any length you desire, will be made part of the printed record. The Committee rules will be modified to allow 10 minutes for your oral presentation. This time limitation will be strictly enforced. In order to facilitate preparations for this hearing, you are requested to provide 75 copies of your written testimony by Friday, April 3, 1992.

If you have any questions concerning your appearance before the Subcommittee, please contact Barry D. Gold or Shana Dale of the Subcommittee Staff at (202) 225-8844.

With kind personal regards and best wishes, I remain

Sincerely,



Rick Boucher, Chairman
Subcommittee on Science

RB/bdg, Attachments

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 COMMITTEE ON SCIENCE, SPACE,
 AND TECHNOLOGY

SUITE 2320 RAYBURN HOUSE OFFICE BUILDING
 WASHINGTON, DC 20515-6301
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March 25, 1992

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 Chief Counsel
 CAROLYN C. GREENFIELD
 Chief Clerk
 DAVID S. CLEMENT
 Republican Chief of Staff

Dr. James Duderstadt
 Chairman
 National Science Board
 1800 G Street, N.W.
 Washington, DC 20550

Dear Dr. Duderstadt:

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Dr. James Duderstadt

March 25, 1992

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- there is a perception that the National Science Board has not utilized its full potential in addressing national science policy and priorities; can you comment on the Board's role in the planning and priority setting process for the National Science Foundation, and the current and potential role of the National Science Board in establishing national priorities for research;
- the criteria that ought to be used by the research community and the Federal Government for selecting research priorities;

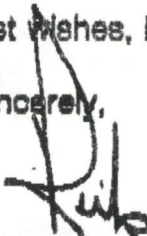
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With kind personal regards and best wishes, I remain

Sincerely,


Rick Boucher, Chairman
Subcommittee on Science

RB/bdg
Attachments

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DIRECTORATE STATUS

FROM: NELSON, STEPHEN: AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF
SCIENCE

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 03/27/92

SUBJECT: ENCLOSED COPY OF THE "AAAS REPORT XVII: RESEARCH AND
DEVELOPMENT FY 1993."

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American
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Directorate for Science and Policy Programs
1333 H Street, NW, Washington, DC 20005
(202) 326-6600 FAX (202) 289-4950

March 27, 1992

D. Allan Bromley
Assistant to the President for Science and
Technology; and Director, White House Offices
Room 360
Old Executive Office Building
17th Street - Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Dear Dr. Bromley:

Enclosed is a copy, just off the press, of *AAAS Report XVII: Research and Development FY 1993*.

I thought you might be interested in the report's contents in advance of the 1992 AAAS Colloquium on Science and Technology Policy, scheduled for April 16 and 17 at the Capital Hilton Hotel.

Sincerely,



Stephen D. Nelson
Program Director
Science, Technology, and
Government

Enclosure
SDN/sty

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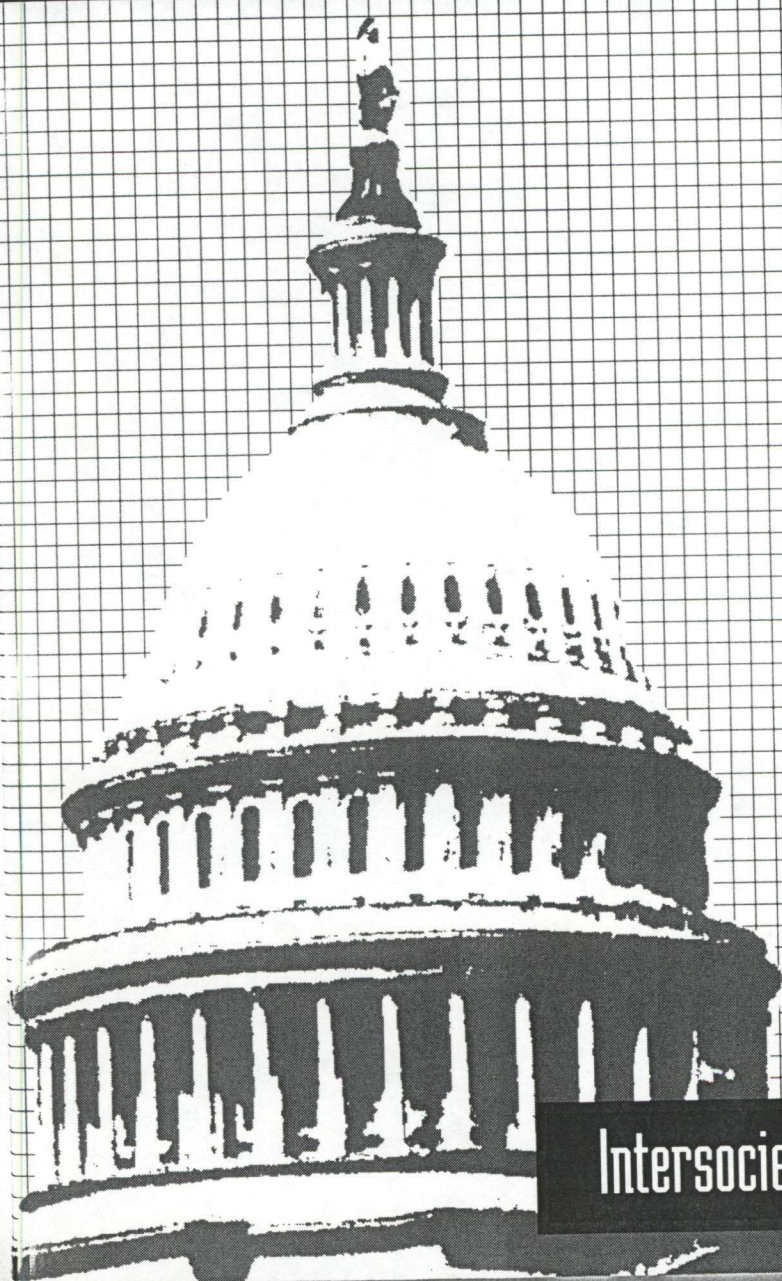
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Barron Graham
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AAAS REPORT XVII
RESEARCH AND
DEVELOPMENT FY 1993



Intersociety Working Group

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TYPE: ACTION DOCUMENT NUMBER: 9200994
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FROM: TOBIAS, Arthur J.: ELECTRONIC ENGINEERING TIMES

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 03/23/92

SUBJECT: HE IS FORWARDING A COPY OF HIS PROPOSAL TO UTILIZE
OUTSTANDING SCIENTIFIC AND TECHNICAL TALENT TO
CONTINUE WORKING IN THEIR SENIOR YEARS.

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ASSIGNED: INTERNATIONAL/POLICY ASSIGNED:

ACTION STAFF
REQUIRED: AS NECESSARY ACTION:

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PHYSICAL SCIENCES

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Arthur J. Tobias

Electronic Engineering Times * 600 Community Drive * Manhasset, NY 11030

Tel. (516) 562-5000 Ext. 2328 * Fax (516) 562-5325

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March 23, 1992

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Dr. D. Allan Bromley
Science Adviser to the President
Old Executive Office Bldg.
Pennsylvania Ave. & 17th St., N.W.
Washington, DC 20500

Dear Dr. Bromley:

I believe the enclosed proposal, titled Project Elysium: High Technology, is the first serious presentation of its type put forth publicly in the United States. I commend the proposal for your consideration as part of a new national policy to conserve and utilize outstanding scientific and technical talent fit and eager to continue working in their senior years.

By trade I am a technical journalist, primarily engaged by Electronic Engineering Times, CMP Publications, Inc., Manhasset, New York. I have supplied additional writing and research services to sister publications High-Tech (formerly Electronic) Marketing News, High Performance Systems and Information Week. I have also written extensively for other technical publications, most recently Software Magazine, Westborough, Massachusetts. Against this background, I would respectfully claim to have a fair appreciation of the capabilities of American technology. I would also point to a realistic concern regarding the decline in our technological strength vis-a-vis global competition and the stern consequences of further erosion of our position.

For nearly two decades, I have nurtured the concept of a national, self-supporting, high technology R&D center that would productively employ on-site some of the nation's most accomplished scientific, engineering and other technically outstanding minds in their retirement years in concert with and managed by a staff of younger talents, with an opportunity extended to interested candidates for lifetime, full-service, subsidized, private living in

a model community. The enclosed proposal expounds this concept. I believe the worrisome condition of the American economy and the diminishing status of our high technology industry give urgency to the considerations I have proposed.

Responses to the proposal from notable scientific and engineering authorities, with few exceptions, have been encouraging. All have noted that problems of funding are likely to be a primary obstruction to sponsorship. Significantly, problems of technical, organizational and operational feasibility, on the whole, were not perceived as insurmountable.

As I have pointed out in my proposal and elsewhere, effective operating models can be found for each constituent function in the program--technology, manufacturing, consulting, training, publishing, housing, community services, health and recreation facilities, etc.--and for the planning, development, organizational and management support necessary to create and operate the institution. In my judgment, what is most needed is a joint recognition by the electronics industry and the federal government of the desirability and viability of the program. I propose, given mutual commitment, that implementation, though challenging, can successfully be accomplished with the right leadership.

I would suggest that the implementers can find effective sources of guidance in the models existing in operations such as Sematech, the National Laboratories, Stanford Research Institute, Battelle, many corporate research facilities and relevant social institutions.

If this nation is serious about maintaining its competitive place in technology--generating greater manufacturing, job and sales opportunities on the domestic front where we still have an advantage, fully utilizing and conserving its scientific and technical resources, extending employment beyond the mandatory retirement age of 65 and providing meaningfully productive and financially protective opportunities for senior members of society--I propose that Project Elysium can be a powerful and imaginative expression of our national commitment.

As founding father of the plan and head of the Council for Project Elysium I would seek to play a role in conceptual formulation of the program, including feasibility research, the publicizing of the program and solicitation of corporate and institutional sponsorship. I would welcome your response.

Respectfully,



Arthur J. Tobias

Enc.

Arthur J. Tobias

ADVERTISING * PUBLICITY * CONSULTING

5 Wildwood Gardens * Port Washington, NY 11050 * (516) 883-4207

April 1, 1992

PROJECT ELYSIUM: HIGH TECHNOLOGY

Proposal for a national, self-supporting, high technology research center and retirement plan sponsored by private, U.S.-based industry in cooperation with the federal government and other institutional sources. The enterprise will provide subsidized, fully administered lifelong work and residential opportunities for distinguished scientists, engineers and technical support professionals who are retired from employment or approaching retirement and wish to continue working in their specialties in high technology R&D programs in direct, on-site association with colleagues of compatible interests.

BACKGROUND

One late winter afternoon thirty years ago, the all-but-deserted halls of the chemistry building of a major eastern university echoed with the beat of footsteps moving urgently from one faculty office to another. At intervals, there was a brief pause followed by a series of knocks. The footsteps, knocks and feeling of urgency were mine. I was on my semi-annual visit to promote the college list of a nationally known publisher of textbooks and monographs. I had allocated the last afternoon of my tour to the chemistry department.

In the time-honored fashion of the trade, I canvassed the building, hunting for instructors who might be willing to discuss their book requirements and the possibility of reviewing my chemistry line for classroom adoption. My efforts were not succeeding. Few instructors were available. Conversations were terse. No one was buying.

Pursuing what I suspected would be my last call of the day, I knocked on the partially open door of an office that appeared to be occupied. Hopes rose when an accommodating voice invited me to come in. Perhaps I would end the day

with some small success after all, I thought. The hope was short-lived. My last call would enter the sales record as another lost cause.

But it was a failure only in the context of my sales mission. Unknown to me then, the encounter would bear fruit in a totally different way three decades later. For out of that experience came the inspiration and conceptual foundation that underlie this proposal.

The professor who answered my knock stopped me abruptly as I began to explain my presence. ``You don't want to see me,`` he said kindly. ``I am retired from the university; I can't be of much help to you.``

Retreat was indicated. But touched by the resignation in his voice, I assured him that this would be my last interview and I would be interested in knowing a little about his work even if we couldn't conduct business. My words seemed to hit a responsive chord. As often happened in the life of an itinerant publisher's representative, the prospect had a message for the salesman.

The professor told me he was made emeritus two years before, when he turned 65. He had enjoyed a substantial tenure at the university and acquired a reasonable list of honors along the way, among them the title of Distinguished Professor of Chemistry. In recognition of his accomplishments, the university granted him an office with modest laboratory facilities following his retirement. The professor seemed forlorn in the narrow, crowded workspace.

``I never expected retirement to be so final,`` my host confided. ``Although I continue my work here, such as I can, I am as removed from university activities as the wind outside. And it doesn't even end with that. I feel as if a window were closed, separating me from my profession.``

Taking a moment to collect his thoughts, the professor earnestly drove his point home. ``I have a great deal of work to do and I believe, God willing, I still have the energy and clarity to get much of it done. So far as I can tell, my faculties are still intact; nothing has really changed intellectually. Yet that doesn't seem to matter under the system we live by. No one is listening.``

Animation changed to meditation when he proceeded. ``I don't know how much longer the university will let me stay, but it can't be much longer. And then I'll be put out to pasture. After that, I don't know what I'll do. I can't imagine life without my work.`` With emphasis he added: ``Retirement is

no blessing when you are denied access to your work while you're still able to carry on productively.'" Then he paused.

I was moved to sputter something consoling but my effort was interrupted. "Mandatory retirement can be like a death sentence without cause," the professor declared. "The system is not only anachronistic, it's groundless. I don't see why we have to live by it. Do you?"

I had no answer. I was young and secure in the belief that this was not my problem. "That seems to be the way things are," I heard myself commiserating. Though I wasn't happy with my comment, it was the best I could do. It was probably the best anyone could do--at that time.

It's now thirty years later and it is my problem--mine and the generation of Americans approaching retirement age. In the following I propose a solution which, though bold, is both practicable and promising. I believe my proposal would have fulfilled the wishes of my chemist host, were he alive to take advantage of it. I believe the idea can play a vital role in supporting the nation's high technology industry as it provides a model for the conservation of one of our most precious resources--gifted people of America who wish to remain productive.

OUTLINE OF THE CONCEPT

Rationale for Employing Able Seniors: Needs, Capabilities, Benefits

In some ways, the proverbial toast "to life" has been answered. Within this century, the healthcare professions, aided by advances in science and technology, have contributed dramatically to the extension and enhancement of human life. Modern healthcare has freed us from many disabilities that severely shortened productive life only a few generations ago. It has given us greater vitality in our senior years. And combined with a prosperous economy and a supporting system of retirement benefits, modern healthcare has helped make possible a decent quality of life for most senior citizens living in retirement.

During the past two decades, and especially in the past five years, major developments emergent in the American socio/economic system have radically changed the retirement picture. A coalescence of factors--including declining prosperity, decreased industrial competitiveness, a prodigious rise in the national debt, population overgrowth, a shrinking tax base, depletion of the social security fund, the high cost of personal and business survival with

soaring prices in healthcare and housing, reductions in employer-sponsored pensions, health insurance and other insurance coverages, plus the extended national lifespan--has seriously eroded the financial security scores of millions of Americans counted on for their retirement years. Many people, including a significant segment of middle class Americans, will need to find work in their senior years just to maintain an acceptable standard of living.

One of the happy consequences of the advances in healthcare is that many Americans will be hardy enough to continue working in their senior years. Evidence that people can perform at high levels of productivity on a sustained basis in their late 60s and through their 70s is abundant. In fewer but significant instances, professional productivity has extended even into the 80s. (Martha Graham died still choreographing at the eve of 96.)

It is also reasonable to expect, in addition to financial necessity and an extended capacity to work, that many individuals will be motivated to work longer for psychological reasons. Patently, the position of the emeritus chemistry professor, reported earlier, reflects the thinking of many more people than anyone could have guessed even ten years ago. That is to say, the desire to continue working while physical vigor and intellectual clarity permit, if less than universal, is certainly not uncommon. It is especially common among professionals.

Reliable statistics on the desire of pending retirees to continue productive work are not obtainable. But even if we assume only ten percent of retiring people who might be fit to work productively for perhaps another eight-to-ten years after mandatory retirement age seek the opportunity to remain employed, the minimum numbers, regardless of specialty, would be vast. Depending upon the specialty, the number of such retirees each year would range probably at least in the thousands and more likely in the tens of thousands.

Keeping highly trained people on the job in constructive roles--creating, producing, administering, teaching, consulting--in their senior years so long as they are ready, willing and able to make a productive contribution looms as one of the best insurance policies available to senior citizens. It keeps them financially secure, medically covered and psychologically gratified. But seniors aren't the only beneficiaries. The economy benefits too.

Trained, productive workers fit to work and appreciative of the opportunity to continue working can be among our most dependable assets in an economy seriously handicapped by a decline of productivity, product/service quality and professional reliability. Health-related company costs, including time loss, may be expected to rise for seniors who remain employed. But I

propose that the expense is likely to be significantly offset by the alternative costs, including, for example, the costs of recruitment, training, downtime, turnover, skill deficiencies, and quality problems. In addition to a cost advantage, employers may expect a greater yield from the retention of their leading senior workers, compared to the return anticipatable from less experienced or less dedicated replacements.

Not just the economy, but society as a whole--and taxpayers in particular--benefits from the productivity and self-sufficiency of seniors who remain in the workplace. Greater productivity, which equates with a stronger, more competitive economy, means more demand for American goods and services. And this translates to more production, more consumer goods, more jobs, more job security, more tax revenues and lower tax-supported health maintenance and other senior-citizen support costs. Economically productive seniors who can pay their own way from the proceeds of employment and simultaneously enhance the tax base thus perform a triple service to each of three vital forces: their employers, the economy and society at large.

Everyone wins.

Technological Research and Subsidized Retirement: an Optimal Ecology

Continuing employment for willing and able-bodied seniors capable of maintaining effective levels of productivity is only a first step. I propose it is feasible and makes eminently good sense for private industry in cooperation with the federal government and other interested institutions to create centers of research and development in various technologies that would provide lifelong vocational and residential opportunities for outstanding professionals and professional support personnel who wish to continue their work and would be content to live privately in imaginatively created communities under subsidized conditions according to need.

This proposal focuses on just one area of opportunity. At present and for the foreseeable future, America's need for talented and accomplished minds in electronic research and development (R&D) is critical. Compared to the growth trend of high technology R&D in Japan and the rising challenge from other Pacific Rim nations and Western Europe, the U.S. hold on high-tech R&D is slipping. Without a continuous, high-grade supply of scientific and technical research talent, the nation will be in danger of forfeiting the technological strength essential to a sturdy competitive position in a relentlessly competitive global market.

A small but significant portion of the professional supply needed by American technology can be guaranteed by the use of senior scientists, engineers, mathematicians and supporting technicians (computer specialists, technical designers, machinists, etc.) who are ready, fit and eager to continue their professional pursuits so long as health and vigor permit. The heart of the proposal is to create an environment that will synergize their highly specialized talents and integrate them with the talents and energies of younger workers who would form the core of the staff and management structure. In exchange for their commitment to service, the senior group would be rewarded with lifetime security for themselves and their spouses and continued opportunity to enjoy the intellectual and psychological challenges that motivated them during the course of their careers.

The hardheaded side of the plan should not be overlooked. If the program can be considered in some limited measure as a social experiment, it would be one that's much needed in preparation for stern realities that lie ahead. The more pragmatic fact is that it will serve as an incentive to induce highly talented scientists, engineers and other technical people to continue working after 65 and to leave established homes, family circles and community life to devote themselves to the R&D center potentially for the rest of their lives. What's being offered can be viewed basically as a set of ``perks,`` rationalizable by a prospectively compensating return on the investment.

The project would be developed, funded and directed under the sponsorship of a consortium of American-based corporations working in high technology development and manufacturing, with additional financial backing sought from the federal government and interested institutions. Governing authority for the enterprise would be vested in a board of directors composed of, but not restricted to, founding members. Initial responsibilities would include formulation of the charter, planning of operations and facilities, financial procurement, budgeting and establishment of a functionally independent executive management. Initial capitalization would be divided between founding companies, the federal government and other participating sources on a negotiated basis.

As a quid pro quo, corporate participants would receive priority consideration over nonparticipating competitors. Subject to the provisions of the charter, which would be ratified by all contracting parties, participating companies would be positioned to receive first knowledge of products and services offered by the enterprise and first option to avail themselves of what may be offered. Along with competitors, they would also enjoy the residual benefits of all technological output generated under its auspices.

Operations would be run on a not-for-profit basis but structured to yield sufficient income to cover expenses and provide the necessary means to pursue program development and community services consistent with the aims and policies of the enterprise. In brief, the enterprise would be designed and managed to amortize its capital costs and operate self-sufficiently.

In addition to R&D, the enterprise would maintain a variety of revenue-producing operations and services related to its technological mission. Manufacturing operations would be conducted on a scale sufficient to produce marketable products in salable quantities for open-market consumption, with first options on licensing and sales offered equitably to participating organizations. Testing, consulting and training services would be offered on a similarly prioritized basis.

Extensive library and publishing facilities would be maintained to support research and expedite publication of the work done at the enterprise. Access to the library and availability of convenient publishing opportunities would also serve as incentives to attract distinguished candidates to apply for affiliation and, once accepted, remain in residence.

Among additional facilities, a fully equipped conference center would be established on-site to accommodate consulting and training requirements plus a variety of further activities, including a regular program of internally sponsored lectures, demonstrations, seminars, workshops and conferences. The facilities would also be available for suitable programs sponsored by external sources, with space for commercial exhibits. In time, an academic program would be established, aimed at audiences ranging from scientifically and technically gifted youth to post-doctoral professionals. A long-term goal would be to make the conference center an institution of world-wide prominence for the promotion of electronic technology.

Approved residential candidates and their spouses would enjoy the benefits of community membership at minimum or readily affordable expense, depending upon their means, for the duration of their lives--or for as long as they chose to remain. Due provision would be made for working arrangements and, when indicated, the scaling down and cessation of work.

Cost of the residency program would be defrayed through the value of the work performed by the residents in their various capacities as researchers, inventors, designers, system developers, test analysts, manufacturing specialists, craftsmen, writers, speakers, consultants, instructors, etc. Any intellectual rights generated, such as patents, trademarks and copyrights, would belong to the enterprise, the proceeds placed in a general fund for

discretionary use in support of collective interests. With living expenses minimized and healthcare and recreational services fully provided, salaried compensation for resident members need be no more than sufficient to meet reasonable needs. Though younger employees would be fully compensated, a major segment of the operating costs supporting the senior group would be conserved.

Site selection and facilities planning would be undertaken on a competitive basis. The enterprise could be located at any site that would effectively support communication, transportation and manufacturing requirements and meet all additional selection criteria determined by the board.

Residential features, so far as feasible, would embody design concepts of a model community. Envisioned beyond the physical milieu would be a community of colleagues working and living under optimized conditions, provided with an array of services congenial to the needs of residents of all ages, interests and condition. In particular, it would aim to generate a spirit in which the psychological barriers of seniority were minimized in a wholesome, diversified environment populated by a mixture of age groups.

Project Elysium is an American dream ready for conversion to an American reality. The scale of its possibilities affords a creative opportunity as exciting as its social challenge. Its success is limited only by the vision and dedication of its planners, participants and public supporters. Once established, it will be a monument to the creative thinking of a mature America in the closing years of the 20th century, a model for similar enterprises worldwide, a gift truly worthy of the name to future generations.

THE PROSPECTUS AND ITS STRATEGIC GUIDELINES

Project Elysium has the potentiality to initiate a brilliant new chapter in the history of social and economic planning. But innovative as it will be, it will have sturdy roots in accomplishments past and present. Models of successful research and development centers are plentiful, as are models for successful retirement communities. The synthesis, though requiring imaginative planning, will be well within the range of tested experience.

The model suggested in the Prospectus does not presume to be definitive. On the contrary, it seeks to stimulate thinking rather than confine it. The intention of the Prospectus, despite the formality of its structure, is to provide open-ended considerations for analysis and debate, so that the negotiating parties can reach a more solid and informed consensus on how they

wish to operate. At best, then, the Prospectus is advisory.

Nevertheless, built into the Prospectus is a strategic orientation we, the Council for Project Elysium, regard as vital to the success of the program. We specifically favor a system of management by objectives which would operate in a pragmatic, flexible decision-making environment. Key to our strategy, especially at the earliest and most vulnerable stages of development, is the principle of economically phased growth, balancing long-term goals with expedient exploitation of short-term revenue opportunities. Our model will take the concept through the first stages of operability, with assumptions and projections presented for the first five years. By the end of that period, the enterprise is projected to reach break-even status.

As an example of our strategic thinking, we take the position that capital costs for new construction should be conserved wherever feasible alternatives are available. Hence creation of an entirely new physical plant is not presupposed. Alternative consideration is given to purchase or long-term lease of, perhaps, an existing college campus or industrial complex that may be suitable for both operations and residential development. Maintaining a sensible balance between short and long-term capital investment, in our view, should be the subject of acute consideration from the beginning and should reflect rigorous cost/benefit analyses of diverse options.

Operational decisions, we believe, should be determined according to similarly balanced standards. While planning and set-up for long-range programs are going on, we propose that operations planners seek a "running start," with attention given to readily executable R&D programs, short-term manufacturing assignments and high-demand, fast-yield services. At the same time, additional income and asset acquisition might be sought from research grants and various types of donations. Among the latter might be cash gifts to the general fund, special endowments, proprietary technology, patents, trademarks and copyrights, royalties, land, facilities, equipment, and technical assistance.

From the outset, we would emphasize the value of communication support. For its part, the Council for Project Elysium is committed to publicize, promote and, as may be appropriate, assist in the development of the program. We believe that time is of the essence on both the social and economic issues at hand. And though we recognize that a mass of detail must be generated, assessed, communicated and negotiated, we are prepared to proceed with deliberate speed to help bring the program to fruition.

The Prospectus for Project Elysium will be available in separate format

upon formal request. A table of contents follows. Prospectus and further information may be obtained by writing to Council for Project Elysium at the address given on the letterhead. All communication will be kept in strict confidence.

PROSPECTUS FOR PROJECT ELYSIUM: TABLE OF CONTENTS

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- Initial capitalization
- Corporate formation
 - Board of Directors
 - Guidelines for Corporate Charter
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- Site criteria, search procedure, procurement
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 - Testing
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Residential Affairs Management

- Structure and staffing
- Resident program management (planning and budgeting)
- Facilities management (planning and budgeting)
- Supporting departments and functions management (planning and budgeting)

Role of the Council for Project Elysium

Council for Project Elysium

Arthur J. Tobias
Founder & Executive Director

Logged

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9200252
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: MASSEY, Walter E.: NATIONAL SCIENCE FOUNDATION

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 01/24/92

SUBJECT: A LETTER PROPOSING A BOLD MULTI-YEAR PROGRAM TO
ADDRESS THE RESEARCH FACILITIES NEEDS OF THE NATION.

DIRECTORATE STAFF
ASSIGNED: INTERNATIONAL/POLICY ASSIGNED: P2

ACTION STAFF
REQUIRED: AS NECESSARY ACTION: as necessary

SENDER'S DUE DATE:
OSTP DUE DATE: 02/10/92 STAFF DUE DATE 2/10/92
DATE COMPLETED: DATE COMPLETED/DEPT: -

COPIES TO: D. Allan Bromley
ALL ASSOCIATE DIRECTORS

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

OSTP RECEIVED: 01/27/92 DEPT RECEIVED:
FILE: P-INTERNATIONAL-POLICY

CENTRAL FILES:

Dr. Bromley, the AD's
and P. Perrolle met
with Dr. Massey on
this subject on 2/5/92

The rest is history. No
response required.

P. Perrolle
3/1/92

Please -
Please review
& comment -
let's discuss
as soon as
you have
digested
J 2
1/28/92

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550



OFFICE OF THE
DIRECTOR

RECEIVED
January 24, 1992

OSTP
MAIL ROOM

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

Dear Allan:

As you know, the condition of academic research facilities has been a major problem at U.S. universities and colleges for well over a decade. The February 1986 Report of the White House Science Council Panel on the Health of U.S. Colleges and Universities concluded that additional support of as much as \$10 billion over the next ten years would be needed to reverse the infrastructure decay. The panel recommended a facilities fund within NSF be made available for each of the next ten years, to be awarded with a matching requirement for equal funds from non-federal sources. This recommendation was never implemented.

Given the concern about the state of the U.S. economy, this may be a propitious time to address the research facilities needs of the Nation. I encourage you to consider a bold, multi-year program, funded at the level of \$2 billion over the next five years. Such a program will strengthen the nation's scientific and technical base and will benefit local communities by helping to stimulate economic recovery. This Federal investment has the potential to result in a economic multiplier effect of two to three times the initial investment.

Enclosed is a brief description of a proposed facilities program ("A Contribution to the Nation's Economic Recovery Program") for your consideration. I would be pleased to discuss a major facilities initiative in greater detail if that would be helpful.

Sincerely,

Walter E. Massey
Director

Facilities Modernization Activity

A Contribution to the Nation's Economic Recovery Program

I. Overview

The Academic Research Facilities Modernization Act of 1988, signed into law in October, 1988, was the result of a number of legislative initiatives to deal with research facilities modernization. The Act provides the authority for NSF to establish and carry out an Academic Research Facilities Modernization Program. A program was funded at an annual level of \$20 million for FY 1990 and FY 1991. Even fewer funds were appropriated for FY 1992. Still this program is a sound, highly leveraged investment strategy that can help maintain and strengthen our nation's scientific and technical base. If it is truly an increment, it can magnify state, local and private funding to aid economic recovery, and increase employment opportunities in scientific and technical professions. For the Federal government to play an effective role, this effort requires a substantially higher level of funding. The funding should be \$2 billion over the next five years. This program should be incremental to existing agency budgets.

II. Background

Scientific and engineering personnel, instrumentation, and research facilities are the three key elements of our research system. The Federal government has a leadership role to play in helping to support and encouraging others to support research facilities. Studies, surveys, and assessments reaffirm that U.S. academic research facilities are in need of repair, renovation, modernization, and some expansion. A number of factors have contributed to the problem: (a) the rapid changes and advancements in science and research; (b) the high cost of research facilities and support space; (c) the impact of regulatory and other requirements on building standards; (d) the cost of upgrading older buildings and facilities, many of which are structurally inflexible and obsolete; and (e) chronic underfunding due to higher priorities placed on other aspects of the research system, i.e., researchers and instrumentation.

III. Program Description

The proposed program will entail competitive grants for the repair, renovation, or, in exceptional cases, replacement of facilities used for research

and research training in institutions of higher education (either graduate or undergraduate), independent nonprofit institutions, research museums, and consortia. This program provides an opportunity to develop a focus be on facilities for the natural sciences and engineering, an investment that will fuel long-term economic growth. In addition, the program will support a broad range of institutions throughout the country.

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DIRECTORATE STATUS

FROM: IVERSON, J. Richard: AMERICAN ELECTRONICS ASSOCIATION

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 01/10/92

SUBJECT: THEY ARE OFFERING A STATEMENT FOR INCLUSION IN THE
PRESIDENT'S STATE OF THE UNION ADDRESS.

DIRECTORATE

ASSIGNED: INDUSTRIAL

STAFF

ASSIGNED:

ACTION

REQUIRED: AS APPROPRIATE

STAFF

ACTION:

SENDER'S DUE DATE:

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FROM: IVERSON, J. Richard: AMERICAN ELECTRONICS ASSOCIATION

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SUBJECT: THEY ARE OFFERING A STATEMENT FOR INCLUSION IN THE
PRESIDENT'S STATE OF THE UNION ADDRESS.

DIRECTORATE STAFF
ASSIGNED: INTERNATIONAL/POLICY ASSIGNED:

ACTION STAFF
REQUIRED: AS APPROPRIATE ACTION:

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