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

OA/ID Number: 62018
Folder ID Number: 62018-001

Folder Title:
Invitations: Speech (2) [4 of 6] [1991]

Stack:

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"Document Control"

TYPE: INFORMATION

ORIGINATOR: 02

STATUS C

DOCUMENT NUMBER: 9124588

DIRECTORATE STATUS

FROM: LEE, Kathryn: CLOSE UP FOUNDATION

TO: DR. D.A. BROMLEY



Marian calendar

DATE OF
CORRESPONDENCE: 10/25/91

SUBJECT: A LETTER THANKING DR. BROMLEY FOR AGREEING TO
DELIVER THE KEYNOTE ADDRESS TO THE CLOSE UP SEMINAR
ON 05/11/92.

DIRECTORATE
ASSIGNED: STAFF
ASSIGNED:

ACTION
REQUIRED: STAFF
ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY

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

*5/6/92 - Regretted to Kathryn Lee
DAB had to go to Brazil.
m w*

OSTP RECEIVED: 10/29/91
FILE: P-INVITATION-SPEECH

DEPT RECEIVED:

CENTRAL FILES:



91 OCT 29 A10: 51

October 25, 1991

OFFICE OF THE
DIRECTOR

Mr. D. Allan Bromley
The Assistant to the President
for Science and Technology
The White House
Washington, DC 20500

Dear Mr. Bromley:

I want to thank you for agreeing to deliver the keynote address to a group of Close Up students on Monday, May 11, 1992 at 9:00 a.m. You will be speaking with 200 high school juniors and seniors from across the country for approximately an hour. The seminar will be held at a downtown auditorium. When the location has been secured I will let your office know the details.

The keynote address is the first and most important seminar of the students' week. It introduces them to Washington, D.C., the current political climate and issues of national importance. Through your experience, students will receive a firsthand understanding of how government works and how public policy is made in the nation's capital. Seminars are designed to include at least forty-five minutes of questions and answers so the students can ask you about ideas and issues they are most concerned about.

Thank you again for agreeing to talk to these Close Up students. Your involvement in the program gives them an opportunity to learn about government in a new and unique way. Your participation is appreciated by both the students and the Close Up Foundation.

Sincerely,

Kathryn Lee
Speaker Coordinator
(703) 706-3481

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9124578

ORIGINATOR: 02

SPEECH: YES NO

FROM: SHERMAN, Richard J.: RESEARCH CONSORTIUM INC.

DATE OF EVENT: 11/13/91 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: GEORGETOWN UNIVERSITY CONFERENCE CENTER

TIME OF EVENT: 8:30 A.M.-9:15 A.M.

SUBJECT: AN INVITATION TO DELIVER THE KEYNOTE ADDRESS FOR
RCI'S ANNUAL MEMBER EXECUTIVE CONFERENCE AND
INFORMING DR. BROMLEY OF RCI'S AWARD TO THE
PRESIDENT'S HIGH PERFORMANCE COMPUTING INITIATIVE.

RSVP: 11/14/91

CONTACT PERSON:

CONTACT NUMBER:

Richard Sherman 612/946-1266

INVITATION ACCEPTED? YES NO

COPIES TO: PHYSICAL SCIENCES
Dr. Wong

REMARKS:

*11/6/91 - Regretted to R. Sherman.
m2*

CLOSED

DATE OF LETTER: 10/24/91

DATE RECEIVED: 10/29/91

FILE: P-INVITATION-SPEECH

RESEARCH CONSORTIUM, Inc.

CHIEF SCIENTIST

DR. CARL G. MURPHY
Gateway Technology International, Inc.

SENIOR POLICY FELLOW

MR. F. BRETT BERLIN
Brett Berlin & Associates, Inc.

INDUSTRY STRATEGY COMMITTEE

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Business Research, Inc.

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Spang-Robinson Report

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European Economic Community

DR. JAMES C. T. POOL (USA)
Drexel University

DR. LARRY RAPAGNANI (USA)
University of Arizona

MS. MARCELLINE C. SMITH (USA)
NASA Ames Research Center

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Intel Corp. / Supercomputer Sys. Div.

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MR. J. RICHARD SHERMAN
Managing Director, RCI North America

MR. F. BRETT BERLIN
Managing Director, RCI - Washington

DR. GIACOMO POLOSA
Managing Director, RCI Europe

MR. JAMES GEISMAN
Managing Director, RCI Japan

RECEIVED

October 24, 1991

91 OCT 29 A10:56

FAXED & Mailed

Dr. D. Allan Bromley
Science Advisor to the President
Office of Science & Technology Policy
Executive Office Building
Washington, DC 20506

Dear Dr. Bromley:

On behalf of the worldwide members, advisors, and associates of the Research Consortium, I am pleased to inform you, prior to public announcement, that the President's High Performance Computing and Communications Program has been selected to receive the RCI Annual Industry Recognition Award for 1991. This award is presented annually to honor the single product or event judged to have the most significant impact on the HPC industry worldwide. While our normal focus for this award is on new product or major application innovations, we have selected the HPCC Initiative this year because its impact will be visionary--far beyond the direct focus of the budget appropriations.

Therefore, it is my distinct pleasure to formally invite you to join us as our keynote speaker for RCI's Annual Member Executive Conference at the Georgetown University Conference Center, November 13-14. As you can see from the enclosed program, your talk will be during the morning of Wednesday, November 13, from 8:30-9:15. We would like you to share your thoughts concerning the potential "secondary impacts" of the Initiative through various forms of collaboration, especially with industry, and the impact that the HPCC Initiative could have on related programs, as well. For your information, we have also asked Dr. Wong to participate in the conference sessions devoted to the HPCC and related initiatives.

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00198 Rome, Italy
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RCI JAPAN
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FAX 508.358.6350

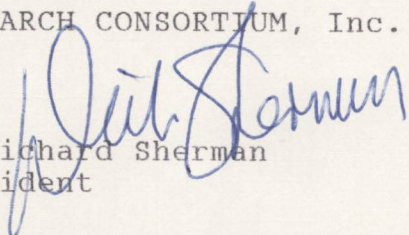
Dr. D. Allan Bromley
October 24, 1991
Page 2

Because of the significance of HPCC and related initiatives, we will focus about half of RCI's two-day conference on the various aspects of the HPCC. We are opening the conference to a broad cross-section of non-member organizations, in order to enhance awareness of the importance of these efforts to the country.

We look forward to your participation. I will call you tomorrow, October 25, to confirm.

Cordially yours,

RESEARCH CONSORTIUM, Inc.



J. Richard Sherman
President

Attachments: RCI Annual Member Executive Conference Information
RCI Information Packet

cc: Mr. James Kasdorf, Westinghouse
RCI Advisor & Chairman of Award Selection Committee

Mr. F. Brett Berlin, Washington
RCI Senior Policy Fellow

RESEARCH CONSORTIUM, Inc.

CHIEF SCIENTIST

DR. CARL G. MURPHY
Gateway Technology International, Inc.

SENIOR POLICY FELLOW

MR. F. BRETT BERLIN
Brett Berlin & Associates, Inc.

INDUSTRY STRATEGY COMMITTEE

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DR. CARL EDWARD OLIVER (USA)
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MR. JEAN-FRANCOIS OMNES (BELGIUM)
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MR. F. BRETT BERLIN
Managing Director, RCI - Washington

DR. GIACOMO POLOSA
Managing Director, RCI Europe

MR. JAMES GEISMAN
Managing Director, RCI Japan

DATE: 25 October 1991

TO: RCI Worldwide Members and Friends of the Consortium

cc: RCI Advisors, Executive Consultants, Key Associates

FROM: J. Richard Sherman, President

SUBJECT: RCI's Annual Member Executive Conference, 13-14 Nov. 1991
Georgetown University Conference Center, Washington, D.C.

On behalf of RCI and its worldwide members we wish to **thank Don Fitzpatrick** and his very enthusiastic staff at **TAI** for hosting our 1991 AMEC. As advance registrations are indicating, this conference promises to be one of the largest events held by RCI since our founding almost four years ago.

An outstanding roster of speakers has been assembled who will be addressing the key issues and "*Grand Challenges*" facing us today in high performance computing. RCI's Director of Research, **Doug Scafe**, has structured the agenda to provide an appropriate platform for this distinguished group of speakers, as your review of this *FINAL AGENDA* will attest.

The RCI Annual Industry Recognition Award for 1991 will honor the President's High Performance Computing and Communication Programs. The RCI selection committee determined that this *Initiative* will have a significant impact on the industry because its vision reaches far beyond the direct focus of budget appropriations.

Highlights of the conference are:

- Keynote address by **Dr. D. Allan Bromley** (invited), Science Advisor to the President and one of the recipients of RCI's 1991 Annual Industry Award.
- Luncheon -- we are honored to have His Excellency **Ivan Stancioff**, **Ambassador** of the Republic of Bulgaria to the Court of St. James, as our luncheon speaker. Ivan's corporate background in the worldwide information industry eminently qualifies him to address "*High Performance Computing in Eastern Europe*."
- The Award Dinner speaker will be **Senator Albert Gore** (invited), as the co-recipient of the RCI Award, representing the Congressional contribution to this *Initiative*.

This RCI AMEC was scheduled both in date and location to accommodate the interest of RCI's worldwide members and friends to combine their attendance at this very important conference with the *Supercomputing '91* Conference in Albuquerque, NM.

We are looking forward to seeing you in Washington.

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RCI Worldwide Annual Member Executive Conference

"THREE POINTS OF THE DELTA: Forces of Change in High Performance Computing... Trends and Markets"

- Users discussing how their organizations have a competitive advantage by using high-performance computing.
- A forum for the resolution of key industry issues.
- Identify trends that will influence the direction of high-performance computing.

Host: Technology Applications, Inc. (TAI)

Location: Washington, D.C.
Georgetown University Conference Center

Date: 13-14 November 1991

FINAL AGENDA

Tuesday 12 November

Demonstrations of IBM's RS/6000 Workstations

On both Tuesday and Wednesday there will be demonstrations of the winner of the 1990 RCI Industry Award, IBM's RS/6000 Workstations

1800-2000

Earlybird Reception

at The Faculty Club - Hosted by Cray Research, Inc.

Day One - Wednesday - 13 November

0730-0800

Continental Breakfast and Registration *at Conference Center*

0800-0815

Welcome

*Mr. J. Richard Sherman, President, RCI
Mr. Don Fitzpatrick, President, TAI*

0815-0830

Opening Remarks: Conference Moderator *Mr. F. Brett Berlin, RCI Senior Policy Fellow*

0830-0915

Keynote Address - "HPCC and ITS ROLE WITH INDUSTRY"

*Dr. D. Allan Bromley, Science Advisor to the President (invited)
Office of Science & Technology Policy*

Worldwide Annual Member Executive Conference

Preliminary Agenda - page 2 (day one)

**COLLABORATION:
GOVERNMENT, ACADEMIA, AND INDUSTRY***Session Chairperson: Mr. Don Fitzpatrick, President, TAI**This entire first day will focus on the many initiatives in and among government, academia and industry. Included will be presentations on US, European and Japanese government initiatives, as well as industry and academic consortia.*

0915-1200

Morning Session - "Implications of the HPCC Initiative"*With the HPCC Initiative in its first year of funding, it is very important to understand what it means to high performance computing. The morning presentations focus on the role of the HPCC Initiative and how it impacts and relates to industry and academic programs.*

0915-1015

US GOVERNMENT INITIATIVES

In this section, the US Government's "Federal High Performance Computing and Communications Program" is covered by a panel representing the major government agencies involved in the initiative. Panelists will present the activities occurring and planned within their agencies.

Moderator: *To be Announced***Panelists:** *Dr. Paul Smith, Manager, HPCC Program, NASA
DARPA/DOD Representative (invited)
NSF Representative (invited)
DOE Representative (invited)*

1015-1045

Break

1045-1130

FEDERAL AND STATE COMPUTATIONAL "GRAND CHALLENGE" INITIATIVES

These two presentations will describe three computational "Grand Challenge" applications under development, involving cooperation between government agencies, universities and corporations.

*Dr. Paul G. Huray, Senior Vice President for Research
University of South Carolina**"Groundwater Transport" and
"High Performance Manufacturing Consortia"**Dr. Charles F. Bender, Director
Ohio Supercomputer Center**"Consortium for Applications in
Parallel Scientific Computing"*

1130-1200

INDUSTRY COOPERATIVE EFFORTS

Can any one company effectively compete by itself in today's realm of rapidly moving technological change? This presentation includes a discussion of one of the major industry technology cooperative efforts.

*Representative from Microelectronics and
Computer Technology Corporation (MCC) (invited)*

Worldwide Annual Member Executive Conference

Preliminary Agenda - page 3 (day one)

1200-1330

Luncheon**"High Performance Networking: A National Vision"***The Honorable George Brown (D-California) (invited)*

Hosted by Grumman Data Systems

1330-1700

Afternoon Session

1330-1415

EUROPEAN COMMUNITY INITIATIVES

In this presentation, the European Community's ESPRIT program (including GENESIS) is covered, including goals and progress to date.

Mr. Jean-Francois Omnes, Directorate Gen. XIII, European Community

1415-1500

JAPANESE GOVERNMENT PROGRAMS

The Japanese Government has and continues to be deeply involved in providing assistance to the Japanese computer industry. This presentation discusses historical and current programs, their successes and impacts.

Facilitator: *Mr. George Lindamood, Dir., HP Computing,
The Gartner Group*

Speaker: *Dr. David K. Kahaner
Office of Naval Research, Far East (via teleconference)*

1500-1530

Break

1530-1615

THE INTERNATIONAL ROLE OF HIGH PERFORMANCE NETWORKING

The INTERNET and the U.S. NREN Initiatives are already having a global impact on the development and application of HPCC technologies. This session will highlight opportunities and directions that are emerging.

*Dr. Stephen Wolff, Director, Networking Division
National Science Foundation (invited)*

1615-1730

PANEL ON "WHAT IS THE APPROPRIATE ROLE OF GOVERNMENT IN HIGH-PERFORMANCE COMPUTING"?

In this panel session, which includes government, industry and academic representatives, panelists will discuss their views on what the appropriate role of government should be in high-performance computing.

Moderator: *Dr. C. Edward Oliver, Director, Office of Laboratory Computing
Oak Ridge National Laboratory*

Panelists: *Dr. Martin H. Schultz, Senior Consultant
Scientific Computing Applications, Inc.
Mr. John Zelenka, Manager, Technical Computing
Network Systems Corp.
Ms. Sue Fratkin, Principal
Fratkin Associates
Dr. James H. Woodward, Chancellor
University of North Carolina, Charlotte*

Worldwide Annual Member Executive Conference

Preliminary Agenda - page 4 (day one/ day two)

1900

**Second Annual RCI Industry
Recognition Award Dinner**

Hosted by Convex Computer Corp., HNSX Supercomputers, Inc., Ultra Network Technologies

"Impacts of the HPCC Initiative"

Speaker: The Honorable Albert Gore, (D-Tennessee) (invited)

**"A Retrospective on the 1990 Award Winner
- IBM's RS/6000"**

**Presentation of RCI's 1991 High Performance
Computing Industry Recognition Award**

Day Two - Thursday - 14 November

0800-1130

Morning Session

**GEOGRAPHIC DIFFERENCES AND SIMILARITIES:
EUROPE, NORTH AMERICA, AND THE PACIFIC
BASIN**

Session Chairperson: Mr. Bruce Kasson, Exec. V. P., Zycad Corp.

This session focuses on the High-Performance Computer market, noting the major differences and similarities that exist between the geographic entities. The state of the market as far as the size and growth of segments, broken out by industries and vendors, is included. How High-Performance Computing is moving beyond the "Technological Elite" will also be addressed.

0800-0930

**HIGH-PERFORMANCE COMPUTER MARKETPLACE...
WORLDWIDE**

This presentation covers the trends and challenges in the high-performance computing marketplace, with breakouts by geography, industry, vendor, and type of system.

Mr. George Lindamood, Director, HP Computing,

The Gartner Group

Dr. Giacomo Polosa, Managing Director

RCI Europe

Mr. J. Richard Sherman, President

Research Consortium, Inc.

0930-1000

**FROM DENVER TO PARIS TO SEOUL, HOW DOES THE
HIGH PERFORMANCE COMPUTING BUSINESS DIFFER?**

This presentation will cover the differences an HPC vendor sees in the three geographies, such as language impact, export controls, dollars available, buy local issues, user sophistication, cost of doing business, etc.

Mr. Terrence L. Rock, Senior Vice President, Operations

Convex Computer Corporation

Worldwide Annual Member Executive Conference

Preliminary Agenda - page 5 (day two)

1000-1030

Break

1030-1130

OPEN SESSION

This open session is provided to allow high performance computing hardware, software and services vendors to make short presentations on new directions in products, technology and strategies. Attendees are encouraged to provide their comments and suggestions to vendors.

1130-1300

Luncheon*"High Performance Computing in Eastern Europe"**His Excellency Ivan Stancioff**Ambassador of the Republic of Bulgaria to the Court of St. James**Hosted by RESEARCH CONSORTIUM, Inc.*

1300-1700

Afternoon Session**USABILITY: PROGRAMMING TOOLS, NETWORKS, AND VISUALIZATION***Session Chairperson:**Dr. Carl G. Murphy, RCI Chief Scientist and**Executive Vice President, Gateway Technology International, Inc*

This session focuses on three different aspects of usability: the first on how easy it is to use parallel architectures, including moving from one to the other; the second on the ease of tying different computers and other devices together over various networking methods; and, the third on the ease of a user interfacing with High-Performance systems to get his job done.

1300-1430

USER REALITIES IN PROGRAMMING PARALLEL ARCHITECTURES:

Parallel architectures present many opportunities that are now becoming reality. What do users face in transition from conventional sequential machines to parallel architectures? A series of short presentations on different parallel programming tools for the transition will introduce a panel on the issues faced by users. Included in the panel are parallel tool vendors and a user with experience in object oriented programming (C++) on different parallel computers.

Moderator: *Dr. Carl G. Murphy, Gateway Technologies International***Panelists:** *Mr. Jeremy James, Precise Software Technologies**"Real Time Multiprocessor Tools"**Dr. Martin Schultz, Scientific Computing Associates, Inc.**"LINDA: A Tool for Portable Parallel Programming"**Dr. Greg Lomow, Jade Simulations**"Parallel Object Oriented Application Example"*

1430-1500

Break

Worldwide Annual Member Executive Conference

Preliminary Agenda - page 6 (day two)

1500-1600

TYING THE KNOT: HIGH PERFORMANCE NETWORKING

The presentations will describe emerging networking concepts, standards, technologies and applications, from the network planning and user perspectives.

*Dr. Nicholas Duchon, Senior Systems Designer - Technology
Grumman Data Systems*

"High Performance Networking from the
Network Planning and User Perspective"

*Mr. Don E. Tolmie, Technical Coordinator
Los Alamos National Laboratory*

"What's Happening with Supercomputer Networks"

1600-1645

MAN/MACHINE INTERFACE: THE VISUALIZATION CHALLENGE

Visualization advances present both opportunities and challenges as users and vendors move to match dramatic gains in HPC system performance with human intellect and perspectives to address new generations of "Grand Challenges." The first presentation will review the results of RCI's recent research into visualization for an upcoming research report, while the second will highlight high performance processing and visualization on the desktop.

Dr. Jeffrey Mohr, Chief Scientist, TAI

Mr. Sam Harvey, President, Business Research, Inc.

1645-1700

Meeting Wrap-up and Adjournment

F. Brett Berlin

REGISTRATION FORM

Please check appropriate box(s), complete this form and **FAX** it to us at **612/946-1365**; OR mail to: **RESEARCH CONSORTIUM, Inc., 9965 Valley View Road, Minneapolis, MN 55344-3526**; OR you may phone the information to our office at **612/946-1266**.

I/we wish to register for:

- ☐ *RCI's 1991 Worldwide Annual Member Executive Conference, "THREE POINTS OF THE DELTA: Forces of Change in High Performance Computing Trends and Markets," hosted by Technology Applications, Inc., at Georgetown University Conference Ctr., Washington, D.C., 12, 13-14 November 1991.*

Mr/Ms/Mrs/Miss/Dr/Title: _____

First Name: _____

Surname: _____

Company: _____

Position: _____

Address: _____

City/Province/State/Zip/Etc.: _____

Country: _____

Phone: _____ FAX: _____

e-mail: _____

DUPLICATE THIS FORM FOR ADDITIONAL REGISTRATIONS.

Hotel Information:

Reservations should be made directly with the **Georgetown University Conference Center, 3800 Reservoir Road, NW, Washington, D.C. 20057**, telephone number **1-800-446-9476** or **202-687-3200**; or FAX number **1-202-687-3291**. Hotel contact person: **Anne Meiser**. **Be sure to mention the RCI Conference hosted by Technology Applications, Inc.** to obtain the group rate of \$115 single/ \$120 double occupancy (room availability is guaranteed only until 12 October 1991). After that date, reservations will be accepted on an "as available" basis.

RCI Overview

Research Consortium, Inc. (RCI) is a subscription membership service for users and vendors of high-performance computing. RCI provides its members with technology and implementation information in the global high-performance computing marketplace. RCI's focus is one of addressing user needs and concerns.

- Membership Benefits**
- Attendance at North American and European Symposia that focus on key issues.
 - Application research/technology assessment reports dealing with "user" interests.
 - Annual worldwide market trend analysis & forecast to support strategic planning.
 - Management "White Papers" on strategic industry topics.

Sample List of Members

Alliant Computer Corporation
British Petroleum Exploration - UK
C.S.A.T.A. - Italy
Grumman Data Systems
NASA Ames Research Center
Network Systems Corp.
San Diego Supercomputer Center
Ultra Network Technologies

CONVEX Computer Corporation
Westinghouse Electric Corporation
European Economic Community
IBM Corporation
Intel Corporation - Supercomputer Systems Div.
NEC - Europe
Technology Applications, Inc.
University of Illinois - NCSA

List of Advisors

Prof. A. Alberigi-Quaranta
University of Modena, (Italy)

Mr. James F. Dart
Grumman Data Systems

Mr. Sam Harvey
Business Research, Inc.

Prof. Roger W. Hockney
University of Reading, (U.K.)

Dr. E.F. Infante
University of Minnesota

Mr. Bruce N. Kasson
Zycad Corporation

Mr. Thomas J. Jarosh
IBM Corporation

Ms. Wendy Vittori
Intel Corp. - Supercomputer Systems Div.

Dr. James C.T. Pool
Drexel University

Dr. Paul G. Huray
University of South Carolina

Dr. Larry Rapagnani
University of Arizona

Dr. Bill Buzbee
National Center for Atmospheric Research

Mr. Paul Bemis
Apollo Systems Division of Hewlett-Packard

Dr. C.C. Gotlieb, Professor Emeritus
University of Toronto

Mr. Richard H. Hill
Spang-Robinson Report

A.L.C. Humphreys, CBE (U.K.)
Deputy Chairman, ICL (Retired)

Mr. James R. Kasdorf
Westinghouse Electric Corporation

Dr. Carl S. Ledbetter
Decision Point Systems

Ms. Marcelline C. Smith
NASA Ames Research Center

Mr. Jean-Francois Omnes
European Economic Community

Dr. Max Miller
Super Computing Technology

Dr. Carl Edward Oliver
Oak Ridge National Laboratory

RCI Report Availability Schedule

PRIOR RCI PUBLICATIONS INCLUDE:

High-Performance Networking

Specialized Parallel Processing

Matching Applications to Architecture

Departmental Supercomputing

The Supercomputer Software Industry

PUBLICATION DATES OF REPORTS CURRENTLY IN RESEARCH

3rd Quarter	<i>Developing Applications for High-Performance Computers in the Manufacturing Sector</i>
3rd Quarter	<i>Visualization and Graphics</i>
3rd Quarter	<i>High-Performance Resources - An Operational Perspective</i>
3rd Quarter	<i>High-Performance Workstations</i>
3rd Quarter	<i>High-Performance Technology Acquisition - Systems</i>
4th Quarter	<i>Emerging Applications for High-Performance Computing</i>
4th Quarter	<i>Trends and Expectations - Products, Markets and Futures</i>
4th Quarter	<i>In Pursuit of Performance - Processing in Parallel</i>
4th Quarter	<i>Open Systems - Impact on High-Performance Computing</i>

1991 WORLDWIDE FORUM SCHEDULE

"Improving Worldwide High-Performance Computing Strategies For the Next Decade"

1991 North American Member Management Symposia

North American
Symposium VII
21-22 March
San Diego, CA

"HIGH-PERFORMANCE: CHALLENGES AND ISSUES - NORTH AMERICA"

- Options for site architectures: servers and clusters
- Handling data: scientific data bases
- Data by the millions: data storage
- Today's software: tools and tricks
- Impact on the challenges and issues of high-performance networks

Hosted by San Diego Supercomputer Center

North American
Symposium VIII
3-4 June
Ithaca, NY

"COMPETITION ACROSS THE PACIFIC: JAPAN vs. U.S."

- Japanese use of U.S. built computers
- Blocks to Japanese high-performance computer sales in the U.S.
- Japanese access to American technology
- Europe: neutral sales territory

Hosted by Cornell Theory Center

1991 European Member Management Symposia

European
Symposium IV
20-21 May
Bologna, Italy

"HIGH-PERFORMANCE: CHALLENGES AND ISSUES - EUROPE"

- Multi-user access on parallel platforms
- Extracting performance with optimizing compilers
- Higher performance workstations
- Achievement through collaborative effort

Hosted by CINECA

European Symposium V
17-18 October
Lugano, Switzerland

"IN PURSUIT OF PERFORMANCE: PROCESSING IN PARALLEL"

- Understanding the types and use of parallel systems
- Extending compute capabilities for and with parallel platforms
- Seeking the software to make use of parallel
- Migrating to the domain of parallel processing

Hosted by ETH Zurich

1991 Worldwide Annual Member Executive Conference

North American/European
Joint Conference
12, 13-14 November
Washington, D.C.

"THREE POINTS OF THE DELTA: Forces Of Change In High-Performance Computing Trends And Markets"

- Collaboration: government, academia and industry
- Geographic differences and similarities: Europe, North America, and the Pacific Rim
- Connections and Interfaces: inside the system, among the elements, out to the world
- Balance: storage, compute and data movement

Hosted by Technology Applications, Inc. at Georgetown University

Completed RCI Worldwide Member Management Forums

North American Symposium I
May 12, 1988
Minneapolis, MN

"High-Performance Workstations and Networks"

North American Symposium II
June 29-30, 1988
San Francisco, CA

"Trends in Delivery Systems"

North American Symposium III
September 27-29, 1988
Washington, D.C.

"Realities of the End User Environment"

North American Symposium IV
November 16-18, 1988
Orlando, FL

"Management's High Technology Challenge: Leveraging the Super-computer Asset"

1989 Annual North American
Member Management Conference
May 17-18, 1989
Pittsburgh, PA

"An International Study of High-Performance Computing in the 1990s"

North American Symposium V
January 24-26, 1990
San Diego, CA

"High-Performance Computing: Past, Present, Future"

North American Symposium VI
May 2-3, 1990
Washington, D.C.

"Enabling the Enablers - NIC Center Management"

1990 North American
Annual Member Executive Conference
October 9, 10-11, 1990
Boston, MA

"Top Management Strategies for High-Performance Computing"

European Symposium I
December 14-15, 1988
London, England

"Technology Advances and User Perspectives in the International Marketplace"

European Symposium II
February 16-17, 1989
Brussels, Belgium

"European Supercomputing Perspectives...A Focus on User Realities"

1989 Annual European
Management Conference
May 30-31, 1989
Montpellier, France

"An International Study of High-Performance Computing in the 1990s"

European Symposium III
January 8-9, 1990
London, England

"High-Performance Computing: Past, Present, Future"

European Symposium IV
April 19-20, 1990
Rome, Italy

"Closing the Gap - Evolving Technology in an Evolving Europe"

1990 European Annual
Member Executive Conference
November 8-9, 1990
Munich, Germany

"Top Management Strategies for High-Performance Computing"

1991 PROGRAM SUMMARY

"Improving Worldwide High-Performance Computing Strategies for the Next Decade"

- User Environments
- Applications
- Products
- Markets
- Technologies

Addressing the Needs of High-Performance Computing Users

Introduction **The Research Consortium, Inc. (RCI)** addresses key issues affecting leading-edge users and progressive vendors of high-performance computing equipment and services. The subscription-based RCI membership includes industrial, government, and academic users, hardware vendors, and network suppliers, software vendors, and services organizations. The scope of the RCI program encompasses North America, East and West-Europe, and Japan. The following are highlights from the 1991 Program.

Background **The high-performance computing market is changing dramatically.** The high end of the performance spectrum is technology driven; the low end is driven by price. Advances in high-performance computing technology are redefining the roles of workstations, mainframes, centralized computing facilities and the expanding networking elements.

Equipment and services market leaders are increasingly challenged by new competitors. Software vendors have begun to dictate which hardware technologies will be successful. Government policy regarding high performance computing affects the entire vendor and user community. The role of systems integration facility management have worldwide implications.

All users are torn between exploiting today's technology and waiting until the shake-up is over. Software, hardware and service vendors are also struggling to find new market opportunities. High-performance technology is indeed a world class strategy.

Users need help so they can match available technologies and products with an organization's performance, price, and risk profile. Users can help equipment and service vendors target appropriate markets while steering software vendors to desirable platforms. **The RCI program has provided prescriptive and qualitative information to its members and a forum for them to discuss and resolve the key issues since 1986.**

Program Objectives

- **Provide unique forums** to expose and discuss key issues, and to foster more effective communications among users, suppliers, and governmental organizations..... worldwide.
- **Identify high-performance computing implementation and technology issues** that affect the leading-edge users and progressive vendors making up the RCI membership.
- **Research and analyze issues, reporting the results in a prescriptive form** leveraging the funding from the entire worldwide RCI membership.
- **Expand the "Super User Group"** concept that RCI has developed.
- **Provide an authoritative voice for the industry** to insure that issues are communicated to those who can make a difference, especially an organization's top management.
- **Provide access to high-performance computing experts** through RCI's staff, associates, and worldwide industry leaders who comprise the Advisory Council.

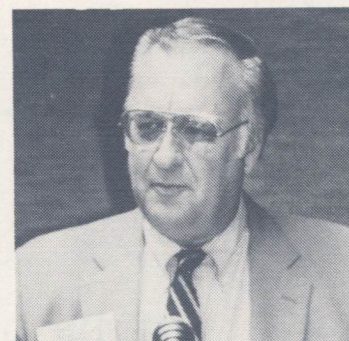
RCI Organization

RCI is the nucleus of the organization shown in the diagram below and serves as the integrator of all contributing resource groups.

RCI's parent company, InfoResearch Institute, Inc. provides a wealth of user data and unique data capture techniques. Cooperative questionnaire distribution insures broad market coverage of instruments.

RCI's high technology consulting affiliates serve as principal investigators in much of the RCI research. The research program is augmented by selected individual expert consultants. RCI's Advisory Council members are key individuals hand picked from the worldwide community of industry, government and academia who assist in virtually all aspects of program development and implementation.

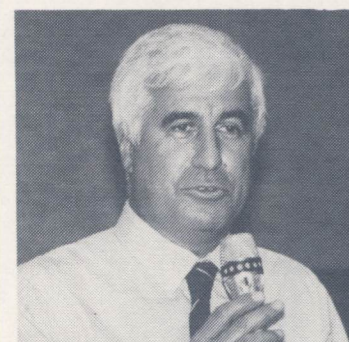
Finally, the membership itself provides much of the resource strength of the program. Rich with knowledge and worldwide perspective, members discuss issues, critique research and fuel the program through a give and take exchange with RCI and other members. The members and advisors direct each succeeding year's program for content and structure.



J. Richard Sherman, President
Managing Director, RCI - No. America



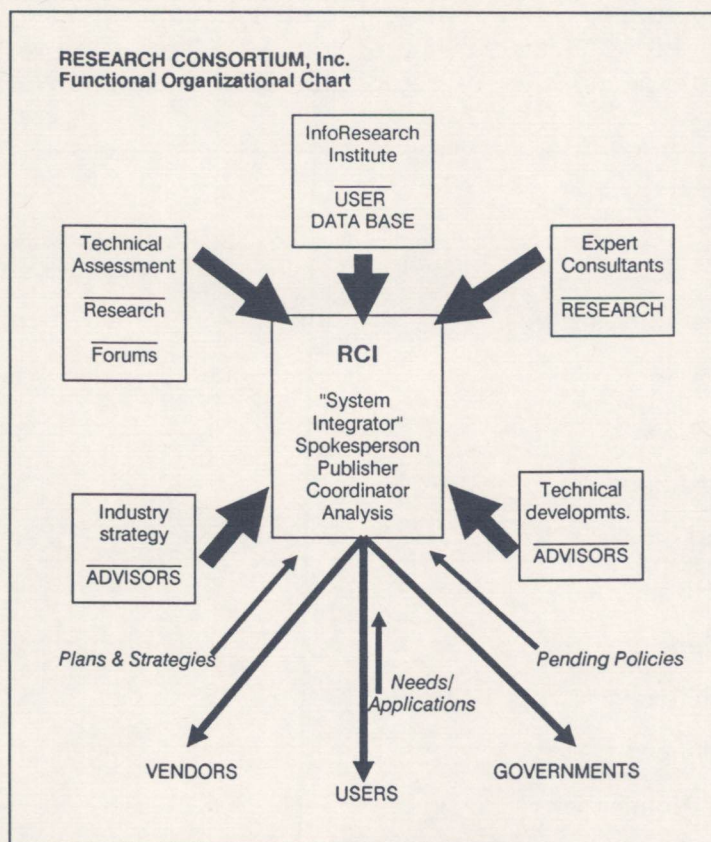
Brett Berlin, Senior Policy Fellow
Managing Director, RCI - Washington



Giacomo Polosa
Managing Director, RCI - Europe



James Geisman
Managing Director, RCI - Japan



BENEFITS TO USERS AND COMPUTING CENTER MANAGERS

- Increase visibility to awareness of current and planned technology developments
- Sharing of operational experiences.....especially the economics
- Direct access to senior management at vendors or service providers

BENEFITS TO SUPPLIERS/PROVIDERS

- Increased awareness and early identification of product and market trends
- Provide a forum for airing issues and influencing external groups
- Access to prescriptive market data analyses
- Direct contact with senior representatives for needs analysis

**Targeted
Member
Benefits**

ALL MEMBERS benefit from pooling financial and technical resources; early access to industry news; exposing of key issues to government, industry and the press; access to other industry experts.

**Membership
Options**

The Program is structured to meet the varying needs of the membership through five unique service subscription packages. Each subscription entitles members to four consecutive quarters of service from time of initiation. Membership options and fees are detailed in RCI's 1991 Program Proposal, available upon request. A special Government/Academic Associate level supports special "site" oriented interests with cumulative benefits.

MEMBERSHIP OPTIONS

	Sponsor Level	Subscrib. Level	Basic Level	Gov/Ac. Assoc.	Assoc. Level
Annual In-House Market Analysis Pres.	y	n	n	n	n
Telephone Inquiry Service	y	y	n	n	n
Number of Report Segments	all	6	3	2	1
Number of Symposium Attendees	4	2	2	1	1
Market Trend Analysis/Forecasts	y	y	y	y	n
Annual Member Executive Conf.	y	y	y	y	y
Management "White Papers"	y	y	y	y	y
Industry Spokesperson Services	y	y	y	y	y
Option to Present at Symposia	y	y	y	y	n
Associate Membership Nominations	3	1	0	0	0

Program Deliverables

- **Original prescriptive research reports on technology.** RCI reports explore state-of-the-art technologies and state-of-the-market implementation issues. This user-focused research is performed by subject matter experts to determine underlying relationships that drive the market statistics. Findings are analyzed and prescriptive conclusions are developed that can be directly applied by users and suppliers.

1990 RESEARCH TOPIC AREAS INCLUDED:

<i>-Departmental Supercomputing</i>	<i>-High-Performance Workstations</i>
<i>-High-Performance Applications in Industry</i>	<i>-Visualization and Graphics</i>
<i>-The Supercomputer Software Industry</i>	<i>-Specialized Parallel Processors</i>
<i>-Matching Applications to Architectures</i>	<i>-High-Performance Networking</i>
<i>-High-Performance Applications in Commerce</i>	<i>-Supercomputing Center Management</i>

RESEARCH TOPICS ADDED FOR 1991

- High-Performance Resources - An Operational Perspective*
- High-Performance Technology Acquisition - Systems*
- Open Systems - Impact on High-Performance Computing*
- Trends and Expectations - Products, Market and Futures*
- In Pursuit of Performance - Processing in Parallel*

- **Annual worldwide market trend analysis and forecast.** Each year RCI, segments the high performance computing market by geography, platform, and industry segment and identifies trends and technology that will affect end users and vendors over the ensuing 24 months.
- **North American and European forums.** Users, suppliers, government, academic and industry experts meet several times each year to review and discuss research results, newsworthy events and other items of common interest.
- **Topical Management "White Papers"** and special information releases. RCI periodically prepares informative material for the business and trade press, governments, industry and end users. RCI also participates in government, industry, and other sponsored events, representing the interests of the RCI members and the high-performance computing stakeholders.
- **Telephone inquiry service.** The RCI staff and associates are available for technology updates between publication of reports, interpretation of RCI database information, and can identify specific resources for particular projects.

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MISSION OF THE CONSORTIUM

The Research Consortium, Inc. was established to provide client services for consortium members. It is committed to addressing member selected topics in high-performance computing with special emphasis on needs of users and vendors. Research and forums are conducted by researchers and content experts experienced in particular aspects of high-performance computing capable of providing prescriptive material. Subscribing members are leading-edge users and progressive vendors across the international computing marketplace.

RESEARCH CONSORTIUM, Inc.

The focus of Research Consortium, Inc. on the high-performance computing marketplace allows it to provide concepts and information using methodology and analysis developed specifically for this project. The intent is to provide the information that will guide the management of worldwide organizations to the solutions of these significant corporate issues and the creation and adaptation of existing and implied business policies.

InfoResearch Institute, Inc.

IRI was formed to develop and maintain a unique data base of computer user experiences, requirements and plans for specialized scientific engineering and commercial applications. Experienced IRI staff members examine and interpret these user requirements and assist suppliers in projecting future products, services and distribution methods to meet those needs.

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Managing Director, RCI Japan

DATE: 25 October 1991

TO: RCI Worldwide Members and Friends of the Consortium

cc: RCI Advisors, Executive Consultants, Key Associates

FROM: J. Richard Sherman, President

SUBJECT: RCI's Annual Member Executive Conference, 13-14 Nov. 1991
Georgetown University Conference Center, Washington, D.C.

On behalf of RCI and its worldwide members we wish to **thank Don Fitzpatrick** and his very enthusiastic staff at **TAI** for hosting our 1991 AMEC. As advance registrations are indicating, this conference promises to be one of the largest events held by RCI since our founding almost four years ago.

An outstanding roster of speakers has been assembled who will be addressing the key issues and "*Grand Challenges*" facing us today in high performance computing. RCI's Director of Research, **Doug Scafe**, has structured the agenda to provide an appropriate platform for this distinguished group of speakers, as your review of this *FINAL AGENDA* will attest.

The RCI Annual Industry Recognition Award for 1991 will honor the President's High Performance Computing and Communication Programs. The RCI selection committee determined that this *Initiative* will have a significant impact on the industry because its vision reaches far beyond the direct focus of budget appropriations.

Highlights of the conference are:

- Keynote address by **Dr. D. Allan Bromley** (invited), Science Advisor to the President and one of the recipients of RCI's 1991 Annual Industry Award.
- Luncheon -- we are honored to have His Excellency **Ivan Stancioff, Ambassador** of the Republic of Bulgaria to the Court of St. James, as our luncheon speaker. Ivan's corporate background in the worldwide information industry eminently qualifies him to address "*High Performance Computing in Eastern Europe*."
- The Award Dinner speaker will be **Senator Albert Gore** (invited), as the co-recipient of the RCI Award, representing the Congressional contribution to this *Initiative*.

This RCI AMEC was scheduled both in date and location to accommodate the interest of RCI's worldwide members and friends to combine their attendance at this very important conference with the *Supercomputing '91* Conference in Albuquerque, NM.

We are looking forward to seeing you in Washington.

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RCI Worldwide Annual Member Executive Conference

"THREE POINTS OF THE DELTA: Forces of Change in High Performance Computing... Trends and Markets"

- Users discussing how their organizations have a competitive advantage by using high-performance computing.
- A forum for the resolution of key industry issues.
- Identify trends that will influence the direction of high-performance computing.

Host: Technology Applications, Inc. (TAI)

Location: Washington, D.C.
Georgetown University Conference Center

Date: 13-14 November 1991

FINAL AGENDA

Tuesday 12 November

Demonstrations of IBM's RS/6000 Workstations

On both Tuesday and Wednesday there will be demonstrations of the winner of the 1990 RCI Industry Award, IBM's RS/6000 Workstations

1800-2000

Earlybird Reception

at The Faculty Club - Hosted by Cray Research, Inc.

Day One - Wednesday - 13 November

0730-0800

Continental Breakfast and Registration *at Conference Center*

0800-0815

Welcome

*Mr. J. Richard Sherman, President, RCI
Mr. Don Fitzpatrick, President, TAI*

0815-0830

Opening Remarks: Conference Moderator *Mr. F. Brett Berlin, RCI Senior Policy Fellow*

0830-0915

Keynote Address - "HPCC and ITS ROLE WITH INDUSTRY"

*Dr. D. Allan Bromley, Science Advisor to the President (invited)
Office of Science & Technology Policy*

COLLABORATION: GOVERNMENT, ACADEMIA, AND INDUSTRY

Session Chairperson: Mr. Don Fitzpatrick, President, TAI

This entire first day will focus on the many initiatives in and among government, academia and industry. Included will be presentations on US, European and Japanese government initiatives, as well as industry and academic consortia.

0915-1200

Morning Session - "Implications of the HPCC Initiative"

With the HPCC Initiative in its first year of funding, it is very important to understand what it means to high performance computing. The morning presentations focus on the role of the HPCC Initiative and how it impacts and relates to industry and academic programs.

0915-1015

US GOVERNMENT INITIATIVES

In this section, the US Government's "Federal High Performance Computing and Communications Program" is covered by a panel representing the major government agencies involved in the initiative. Panelists will present the activities occurring and planned within their agencies.

Moderator: *To be Announced*

Panelists: *Dr. Paul Smith, Manager, HPCC Program, NASA
DARPA/DOD Representative (invited)
NSF Representative (invited)
DOE Representative (invited)*

1015-1045

Break

1045-1130

FEDERAL AND STATE COMPUTATIONAL "GRAND CHALLENGE" INITIATIVES

These two presentations will describe three computational "Grand Challenge" applications under development, involving cooperation between government agencies, universities and corporations.

*Dr. Paul G. Huray, Senior Vice President for Research
University of South Carolina*

"Groundwater Transport" and

"High Performance Manufacturing Consortia"

*Dr. Charles F. Bender, Director
Ohio Supercomputer Center*

*"Consortium for Applications in
Parallel Scientific Computing"*

1130-1200

INDUSTRY COOPERATIVE EFFORTS

Can any one company effectively compete by itself in today's realm of rapidly moving technological change? This presentation includes a discussion of one of the major industry technology cooperative efforts.

*Representative from Microelectronics and
Computer Technology Corporation (MCC) (invited)*

Worldwide Annual Member Executive Conference

Preliminary Agenda - page 3 (day one)

1200-1330

Luncheon**"High Performance Networking: A National Vision"***The Honorable George Brown (D-California) (invited)**Hosted by Grumman Data Systems*

1330-1700

Afternoon Session

1330-1415

EUROPEAN COMMUNITY INITIATIVES

In this presentation, the European Community's ESPRIT program (including GENESIS) is covered, including goals and progress to date.

Mr. Jean-Francois Omnes, Directorate Gen. XIII, European Community

1415-1500

JAPANESE GOVERNMENT PROGRAMS

The Japanese Government has and continues to be deeply involved in providing assistance to the Japanese computer industry. This presentation discusses historical and current programs, their successes and impacts.

Facilitator: *Mr. George Lindamood, Dir., HP Computing
The Gartner Group*

Speaker: *Dr. David K. Kahaner
Office of Naval Research, Far East (via teleconference)*

1500-1530

Break

1530-1615

THE INTERNATIONAL ROLE OF HIGH PERFORMANCE NETWORKING

The INTERNET and the U.S. NREN Initiatives are already having a global impact on the development and application of HPCC technologies. This session will highlight opportunities and directions that are emerging.

*Dr. Stephen Wolff, Director, Networking Division
National Science Foundation (invited)*

1615-1730

PANEL ON "WHAT IS THE APPROPRIATE ROLE OF GOVERNMENT IN HIGH-PERFORMANCE COMPUTING"?

In this panel session, which includes government, industry and academic representatives, panelists will discuss their views on what the appropriate role of government should be in high-performance computing.

Moderator: *Dr. C. Edward Oliver, Director, Office of Laboratory Computing
Oak Ridge National Laboratory*

Panelists: *Dr. Martin H. Schultz, Senior Consultant
Scientific Computing Applications, Inc.
Mr. John Zelenka, Manager, Technical Computing
Network Systems Corp.
Ms. Sue Fratkin, Principal
Fratkin Associates
Dr. James H. Woodward, Chancellor
University of North Carolina, Charlotte*

Worldwide Annual Member Executive Conference

Preliminary Agenda - page 4 (day one/ day two)

1900

**Second Annual RCI Industry
Recognition Award Dinner**

Hosted by Convex Computer Corp., HNSX Supercomputers, Inc., Ultra Network Technologies

"Impacts of the HPCC Initiative"

Speaker: The Honorable Albert Gore, (D-Tennessee) (invited)

**"A Retrospective on the 1990 Award Winner
- IBM's RS/6000"**

**Presentation of RCI's 1991 High Performance
Computing Industry Recognition Award**

Day Two - Thursday - 14 November

0800-1130

Morning Session

**GEOGRAPHIC DIFFERENCES AND SIMILARITIES:
EUROPE, NORTH AMERICA, AND THE PACIFIC
BASIN**

Session Chairperson: Mr. Bruce Kasson, Exec. V. P., Zycad Corp.

This session focuses on the High-Performance Computer market, noting the major differences and similarities that exist between the geographic entities. The state of the market as far as the size and growth of segments, broken out by industries and vendors, is included. How High-Performance Computing is moving beyond the "Technological Elite" will also be addressed.

0800-0930

**HIGH-PERFORMANCE COMPUTER MARKETPLACE...
WORLDWIDE**

This presentation covers the trends and challenges in the high-performance computing marketplace, with breakouts by geography, industry, vendor, and type of system.

*Mr. George Lindamood, Director, HP Computing
The Gartner Group*

*Dr. Giacomo Polosa, Managing Director
RCI Europe*

*Mr. J. Richard Sherman, President
Research Consortium, Inc.*

0930-1000

**FROM DENVER TO PARIS TO SEOUL, HOW DOES THE
HIGH PERFORMANCE COMPUTING BUSINESS DIFFER?**

This presentation will cover the differences an HPC vendor sees in the three geographies, such as language impact, export controls, dollars available, buy local issues, user sophistication, cost of doing business, etc.

*Mr. Terrence L. Rock, Senior Vice President, Operations
Convex Computer Corporation*

Worldwide Annual Member Executive Conference

Preliminary Agenda - page 5 (day two)

1000-1030

Break

1030-1130

OPEN SESSION

This open session is provided to allow high performance computing hardware, software and services vendors to make short presentations on new directions in products, technology and strategies. Attendees are encouraged to provide their comments and suggestions to vendors.

1130-1300

Luncheon**"High Performance Computing in Eastern Europe"**

His Excellency Ivan Stancioff

Ambassador of the Republic of Bulgaria to the Court of St. James

Hosted by RESEARCH CONSORTIUM, Inc.

1300-1700

Afternoon Session**USABILITY: PROGRAMMING TOOLS, NETWORKS, AND VISUALIZATION****Session Chairperson:**

Dr. Carl G. Murphy, RCI Chief Scientist and

Executive Vice President, Gateway Technology International, Inc

This session focuses on three different aspects of usability: the first on how easy it is to use parallel architectures, including moving from one to the other; the second on the ease of tying different computers and other devices together over various networking methods; and, the third on the ease of a user interfacing with High-Performance systems to get his job done.

1300-1430

USER REALITIES IN PROGRAMMING PARALLEL ARCHITECTURES:

Parallel architectures present many opportunities that are now becoming reality. What do users face in transition from conventional sequential machines to parallel architectures? A series of short presentations on different parallel programming tools for the transition will introduce a panel on the issues faced by users. Included in the panel are parallel tool vendors and a user with experience in object oriented programming (C++) on different parallel computers.

Moderator: *Dr. Carl G. Murphy, Gateway Technologies International*

Panelists: *Mr. Jeremy James, Precise Software Technologies*

"Real Time Multiprocessor Tools"

Dr. Martin Schultz, Scientific Computing Associates, Inc.

"LINDA: A Tool for Portable Parallel Programming"

Dr. Greg Lomow, Jade Simulations

"Parallel Object Oriented Application Example"

1430-1500

Break

Worldwide Annual Member Executive Conference

Preliminary Agenda - page 6 (day two)

1500-1600

TYING THE KNOT: HIGH PERFORMANCE NETWORKING

The presentations will describe emerging networking concepts, standards, technologies and applications, from the network planning and user perspectives.

*Dr. Nicholas Duchon, Senior Systems Designer - Technology
Grumman Data Systems*

"High Performance Networking from the
Network Planning and User Perspective"

*Mr. Don E. Tolmie, Technical Coordinator
Los Alamos National Laboratory*

"What's Happening with Supercomputer Networks"

1600-1645

MAN/MACHINE INTERFACE: THE VISUALIZATION CHALLENGE

Visualization advances present both opportunities and challenges as users and vendors move to match dramatic gains in HPC system performance with human intellect and perspectives to address new generations of "Grand Challenges." The first presentation will review the results of RCI's recent research into visualization for an upcoming research report, while the second will highlight high performance processing and visualization on the desktop.

Dr. Jeffrey Mohr, Chief Scientist, TAI

Mr. Sam Harvey, President, Business Research, Inc.

1645-1700

Meeting Wrap-up and Adjournment

F. Brett Berlin

REGISTRATION FORM

Please check appropriate box(s), complete this form and **FAX** it to us at **612/946-1365**; OR mail to: **RESEARCH CONSORTIUM, Inc., 9965 Valley View Road, Minneapolis, MN 55344-3526**; OR you may phone the information to our office at **612/946-1266**.

I/we wish to register for:

- ☐ *RCI's 1991 Worldwide Annual Member Executive Conference, "THREE POINTS OF THE DELTA: Forces of Change in High Performance Computing Trends and Markets," hosted by Technology Applications, Inc., at Georgetown University Conference Ctr., Washington, D.C., 12, 13-14 November 1991.*

Mr/Ms/Mrs/Miss/Dr/Title: _____

First Name: _____

Surname: _____

Company: _____

Position: _____

Address: _____

City/Province/State/Zip/Etc.: _____

Country: _____

Phone: _____ FAX: _____

e-mail: _____

DUPLICATE THIS FORM FOR ADDITIONAL REGISTRATIONS.

Hotel Information:

Reservations should be made directly with the **Georgetown University Conference Center, 3800 Reservoir Road, NW, Washington, D.C. 20057**, telephone number **1-800-446-9476** or **202-687-3200**; or FAX number **1-202-687-3291**. Hotel contact person: **Anne Meiser**. **Be sure to mention the RCI Conference hosted by Technology Applications, Inc.** to obtain the group rate of \$115 single/ \$120 double occupancy (room availability is guaranteed only until 12 October 1991). After that date, reservations will be accepted on an "as available" basis.

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9124577

ORIGINATOR: 02

SPEECH: YES NO

FROM: BONNER, William: AMERICAN METEOROLOGICAL SOCIETY

DATE OF EVENT: 01/05/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: ATLANTA, GEORGIA

TIME OF EVENT: 8:00 P.M.-9:00 P.M.

SUBJECT: AN INVITATION TO DELIVER THE KEYNOTE LECTURE AT THE
AMS ANNUAL MEETING.

RSVP: 11/14/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED? YES NO

COPIES TO: ENVIRONMENT

REMARKS:

11/20/91 - Regretted
to Cristi:
mn

DATE OF LETTER: 10/24/91

DATE RECEIVED: 10/29/91

FILE: P-INVITATION-SPEECH

CLOSED



AMERICAN METEOROLOGICAL SOCIETY

45 BEACON STREET, BOSTON, MASSACHUSETTS 02108 - 3693 U.S.A.

AREA CODE 617 227-2425
FAX 617 742-8718
CABLE: ATMOSPHERE BOSTON

RICHARD E. HALLGREN, EXECUTIVE DIRECTOR
KENNETH G. SPENGLER, EXECUTIVE DIRECTOR EMERITUS

DR. WILLIAM BONNER
PRESIDENT, AMS
COMET

UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH
P. O. Box 3000
BOULDER, CO 80307

TEL: (303) 497-8472
FAX: (303) 497-8491

24 October 1991

Dr. Allan Bromley
Presidential Science Advisor
Office of Science and Technology Policy
Old Executive Office Building
17th and Pennsylvania Avenue, NW
Washington, D.C. 20506

Dear Dr. Bromley:

As President of the American Meteorological Society, it is my pleasure to invite you to give the keynote lecture at the AMS Annual Meeting to be held in January 1992 in Atlanta, Georgia. The lecture is scheduled for 8:00 to 9:00 p.m. on Sunday, 5 January. It is the principal element of the opening, plenary session of the AMS Annual Meeting.

The keynote lecture would provide an opportunity for you to address the 700 or more atmospheric and ocean scientists expected to attend the opening session. In addition, we would welcome the opportunity to publish your remarks in a postmeeting issue of the Bulletin of the American Meteorological Society which is received by more than 10,000 individual and institutional members, and library subscribers, of the AMS.

Major themes for this Annual Meeting are science education, global change and weather forecasting. Symposia are planned on each of these topics. Regular, week-long sessions will be held on mesoscale processes, satellite meteorology and oceanography, physics of the middle atmosphere and interactive information processing systems for meteorology, oceanography and hydrology.

The keynote lecture generally serves to introduce and focus attention upon one or more of the major themes of the conference.

Members of the AMS believe that questions of science education and global change, especially, are among the most important problems facing the nation today. We would welcome your decision to address either or both of these topics. Your delivery of the keynote address at this Annual Meeting would help to give to them the stature and visibility that they so clearly deserve. I sincerely hope that you will be able to accept our invitation.

Sincerely,

A handwritten signature in dark ink, appearing to read 'William Bonner', written in a cursive style.

William Bonner
President

cc: Professor Don Johnson, President-Elect
Dr. Richard Hallgren, Executive Director
Deborah Sterling, Director of Government Affairs (UCAR)

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9124690

ORIGINATOR: 02

SPEECH: YES NO

FROM: MERLIN, Roberto: UNIVERSITY OF MICHIGAN

DATE OF EVENT:

THRU:

TENTATIVE DATES: WINTER TERM

LOCATION OF EVENT: UNIVERSITY OF MICHIGAN

TIME OF EVENT:

SUBJECT: AN INVITATION TO PRESENT A DEPARTMENTAL COLLOQUIUM
DURING THE UPCOMING WINTER TERM.

RSVP: 11/20/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

YES

NO

COPIES TO: PHYSICAL SCIENCES

REMARKS:

CLOSED

*Use no - but tell them
I am ever committed.*

DATE OF LETTER: 10/23/91

DATE RECEIVED: 11/06/91

FILE: P-INVITATION-SPEECH

THE WHITE HOUSE
WASHINGTON

December 18, 1991

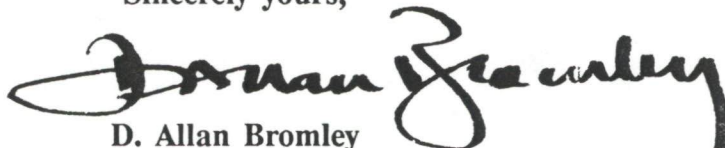
Dear Professor Merlin:

Thank you for your letter of October 23, 1991, inviting me to participate in your colloquium series during the winter term at your university. I apologize for the much belated response.

As much as I would like to join you and your colleagues, the next several months are already heavily committed, so I must regretfully decline.

I appreciate your thinking of me and would like to offer my best wishes for your colloquium.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "D. Allan Bromley". The signature is fluid and cursive, with a large, stylized initial "D" and a long, sweeping underline.

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

Professor Roberto Merlin
The Harrison M. Randall
Laboratory of Physics
The University of Michigan
Ann Arbor, Michigan 48109-1120



4690

The University of Michigan

THE HARRISON M. RANDALL LABORATORY
OF PHYSICS

ANN ARBOR, MICHIGAN 48109-1120
(313) 764-4437

91 NOV 6 P 3: 48 telex: 4320815 U of M UI

OFFICE OF THE
DIRECTOR

October 23, 1991

The Honorable D.A. Bromley
Assistant to the President
Old Executive Office Building
17th Street and Pennsylvania Avenue, NW
Washington, D.C. 20506

Dear Mr. Bromley:

On behalf of the Department of Physics at the University of Michigan, I would like to invite you to present a departmental colloquium during the coming winter term. We believe that you would present a unique and broad perspective on current science and technology policy matters.

The department's colloquium series is intended to expose faculty and students to distinguished speakers from around the country. You would be free to choose whatever topic you consider appropriate. The colloquia are held for approximately 50 minutes on Wednesday at 4 p.m. We expect an audience of 150 to 200 for your talk.

As I mentioned, we would like to host your visit any time during the winter term, which runs from January 8 to April 22, with the exception of February 24 to 28, the University's spring recess.

I will contact your office by late November to discuss this further. If you wish, you may telephone me at (313) 763-9759. Thank you very much for your time and consideration.

Sincerely,

Roberto Merlin
Professor of Physics
Chair, Colloquium Committee

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9124590

ORIGINATOR: 02

SPEECH: YES NO

FROM: BARNETT, Marguerite R.: UNIVERSITY OF HOUSTON

DATE OF EVENT: 02/26/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: HOUSTON SCIENCE CENTER BUILDING, HOUSTON, TEXAS

TIME OF EVENT:

SUBJECT: AN INVITATION TO BE THE KEYNOTE SPEAKER AT THE
DEDICATION CEREMONY OF THE HOUSTON SCIENCE CENTER
BUILDING WHICH HOUSES THE TEXAS CENTER FOR
SUPERCONDUCTIVITY.

RSVP:

CONTACT PERSON: ADAIR, Wendy

CONTACT NUMBER: 713-749-2247

INVITATION ACCEPTED?

~~YES~~

NO

COPIES TO: PHYSICAL SCIENCES

REMARKS:

11/5/91 Regretted to hear in W. Adair's
office.
mn

CLOSED

DATE OF LETTER: 10/18/91

DATE RECEIVED: 10/29/91

FILE: P-PHYSICAL-SCIENCES
invitation-speech

4590



RECEIVED

91 OCT 29 A10:45

OFFICE OF THE
DIRECTOR

Marguerite Ross Barnett
President

October 18, 1991

Dr. Alan Bromley
Assistant to the President for Science and
Director, Office of Science and Technology Policy
Old Executive Office Building
17th St. & Pennsylvania Avenue, N.W.
Washington, D.C. 20506

Dear Dr. Bromley:

On February 26, 1992, the University of Houston will formally dedicate our new, state-of-the-art research facility, the Houston Science Center building, which houses the Texas Center for Superconductivity and our program in biochemical and biophysical sciences.

We would be greatly honored if you would join us as a special guest and keynote speaker for the dedication. As you are aware, the high temperature superconductivity research work of Dr. Paul Chu and his colleagues has drawn world-wide attention to the field of materials science and the area of superconductivity, and indeed, to the University of Houston. This new facility, made possible by state, corporate and private funds, will provide the most advanced facilities available for conducting this significant research. The public interest in Dr. Chu's work also has helped us focus on the importance of science and scientific education for our schoolchildren.

I know that there will be broad community and state interest in the dedication of this facility, and your participation will be particularly meaningful for our researchers, our students, our community and state leaders and our corporate supporters. I hope that your schedule will permit you to join us. I have asked Associate Vice President for University Relations, Wendy Adair, to call your office in the next few weeks to answer any questions and assist in any way she can. Please feel free to call her at (713) 749-2247.

Thank you for your consideration.

Sincerely,

Marguerite R. Barnett
President

cc: Dr. Paul Chu
Wendy Adair

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9124521

ORIGINATOR: 02

SPEECH: YES NO

FROM: WELDON, Virginia V.: MONSANTO

DATE OF EVENT: 03/02/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: ST. LOUIS SCIENCE CENTER

TIME OF EVENT:

SUBJECT: AN INVITATION TO SPEAK AT THE ANNUAL MASTER SALES
DINNER AND VISIT TO THE CHESTERFIELD LIFE SCIENCES
FACILITY.

RSVP: 11/05/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

YES

NO

COPIES TO: LIFE SCIENCES

REMARKS:

CLOSED

11/4/91 - Regretted to Joan!

mx

DATE OF LETTER: 10/16/91

DATE RECEIVED: 10/22/91

FILE: P-INVITATION-SPEECH

4521

Monsanto

VIRGINIA V. WELDON, M.D.
Vice President
Public Policy

Monsanto Company
800 N. Lindbergh Boulevard
St. Louis, Missouri 63167
Phone: (314) 694-3901

October 16, 1991

RECEIVED
91 OCT 22 P12:43
OFFICE OF THE
DIRECTOR

D. Allan Bromley, Ph.D.
Assistant to the President
for Science & Technology
Director, OSTP
Room 360
17th Street & Pennsylvania, NW
Washington, DC 20506

Dear Allan:

On Monday evening, March 2, 1992, the top management of Monsanto will host the leading salespersons in the company at the annual Master Sales Dinner. The dinner will be held in the new St. Louis Science Center, built with the support of lead gifts from St. Louis-based companies, including Monsanto.

Monsanto annually hosts its award winning salespersons at an event designed to allow senior management, our global award winning sales force and senior public officials to better appreciate major societal issues. Among the former speakers are Jeanne Kirkpatrick and George Will.

Because of the importance of science and technology, we hope you will be able to address this audience of about 500. The setting for the event, the St. Louis Science Center, is a particularly appropriate venue for an address by the national science advisor to the President. A topic such as "The Role of Science and Technology for Economic Prosperity and Security" would have great appeal to this audience.

If your schedule permits your participation on March 2, we would be delighted to have you arrive in time to visit our Chesterfield Life Sciences facility where our major biotechnology research effort is now concentrated. As you know, we have a significant commitment to the development of life sciences for the improvement of agriculture, human and animal health, and environmental remediation. Many products of this technology will be coming to the marketplace within this decade and will permit continued economic expansion as well as environmental conservation and preservation.

Dr. Bromley
Page 2
October 16, 1991

If your schedule would require your returning to Washington that evening, we could arrange for your speech to precede dinner. This would enable us to get you to the airport in time for the TWA flight that leaves St. Louis at 8:30 p.m.

We would be honored if your schedule permits you to accept this invitation.

Sincerely,

A handwritten signature in cursive script, appearing to read "Virginia".

Virginia V. Weldon, M.D.

THE WHITE HOUSE
WASHINGTON

October 21, 1991

Dear Mr. Cheney:

Thank you for your letter of August 7, inviting me to be a speaker in your lecture series on **Competitiveness and America's Future** scheduled for March 2, 1992 in Washington, D.C. My apologies for the much belated response.

With the understanding that it is always possible that Presidential scheduling may force a change in my plans, I would be happy to accept your invitation. As I am sure you are aware, Presidential requests require that I have a great deal of flexibility in my scheduling, and conflicts can arise at the last minute.

I appreciate your thinking of me and look forward to hearing from you again as the event approaches.

Sincerely yours,



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

Mr. David W. Cheney
Senior Associate
Council on Competitiveness
900 17th Street, N.W. - Suite 1050
Washington, D.C. 20006

"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9124554
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: SCHULTZ, Jerome S.: AMERICAN INSTITUTE FOR MEDICAL & BIOLOGICAL
ENGINEERING

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/16/91

SUBJECT: A THANK YOU TO DR. BROMLEY FOR AGREEING TO SPEAK AT
THEIR INAUGURAL MEETING AND REQUEST A BIOSKETCH AND
A BRIEF ABSTRACT OF HIS PRESENTATION. ALSO PROVIDED
INVITATIONS FOR INTERESTED OTHERS.

DIRECTORATE STAFF
ASSIGNED: DIRECTOR'S OFFICE ASSIGNED:

ACTION STAFF
REQUIRED: DIRECT REPLY ACTION: *Steve Osm*

SENDER'S DUE DATE:
OSTP DUE DATE: 11/12/91 STAFF DUE DATE 12/4/91
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
LIFE SCIENCES

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

*I spoke to Schultz on 12/4 & provided him with DAB's
bio (though we agreed that an abstract is not needed).
Steve Osm*

OSTP RECEIVED: 10/29/91 DEPT RECEIVED:
FILE: P-INVITATION-SPEECH
CENTRAL FILES:

10/30/91

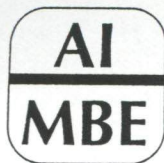
Mary,

Thank you for this informative piece of correspondence. Please note that D.A. is addressing the same meeting (in fact his name is listed directly below Bromley's).

We also received about 15 copies of AIMBE little pamphlets for distribution.

Marg

Document Originally
Attached to
Following Page



RECEIVED

91 OCT 29 A10:40

OFFICE OF THE
DIRECTOR

Steering Committee

Robert M. Nerem, PhD

Co-Chairman
School of Mechanical Engineering
Georgia Institute of Technology
Atlanta, GA 30332-0405
404/894-2768 fax 404/894-2291

Arthur T. Johnson, PhD

Co-Chairman
Agricultural Engineering Department
University of Maryland
College Park, MD 20742-5711
301/405-1184 fax 301/314-9023

Michael J. Ackerman, PhD

National Library of Medicine
301/496-6280

Clifford E. Brubaker, PhD

University of Virginia
804/977-6730

Gilbert B. Devey

Consultant
202/342-1603

Morton H. Friedman, PhD

Ohio State University
614/292-5570

Dov Jaron, PhD

Drexel University
215/895-2215

Winfred M. Phillips, DSc

University of Florida
904/392-6000

Alfred R. Potvin, PE, PhD

Lilly Corporate Center
317/276-5855

Jerome S. Schultz, PhD

University of Pittsburgh
412/648-7956

Savio L.-Y. Woo, PhD

University of Pittsburgh
412/648-2311

Fellows Committee

Y.C. Fung, PhD, Chairman

University of California
San Diego R-012
La Jolla, CA 92093-0412
619/534-4278

Finance Committee

Paul W. Mayer, MD, Chairman

South Florida Orthopedics Associates
400 University Drive
Coral Gables, FL 33134
305/444-4649

October 16, 1991

Dr. D. Allan Bromley

Assistant to the President

for Science and Technology

Office of Science and Technology Policy

Executive Office of the President

17th Street and Pennsylvania Avenue

Washington, DC 20506

Dear Dr. Bromley:

I have enclosed several copies of the first announcement which we have just posted to those on our mailing list. You might want to distribute these to individuals who would have interest in our meeting.

We are eager to begin preparing the Proceedings to be distributed at the meeting, so if you have not done so already, could you please send me a brief biosketch and the abstract of your presentation.

Thank you so much for agreeing to speak at the inaugural meeting of the AIMBE in February. I look forward to hearing from you soon.

Sincerely,

Jerome S. Schultz, Ph.D.

Conference Chairman

Center for Biotechnology and Bioengineering

The University of Pittsburgh

1133 Benedum Engineering Hall

Pittsburgh, PA 15261

HOTEL INFORMATION

Blocks of rooms have been reserved at both the
J.W. Marriott Hotel and the State Plaza.
Reservations should be made directly with the hotel:

J.W. Marriott
1331 Pennsylvania Ave. NW
Washington, D.C. 20004
202/393-2000
Rates: \$132 single; \$142 double



State Plaza Hotel
2117 E Street NW
Washington, D.C. 20037
202/861-8200

Rates: Statetoom Suites/\$92 single; \$106 double
Plaza Suites/\$110 single; \$125 double

* Prevailing taxes apply to all room rates

AMERICAN INSTITUTE OF MEDICAL AND BIOLOGICAL ENGINEERING

MEDICAL AND BIOLOGICAL ENGINEERING: A CELEBRATION OF THE PAST AND CHALLENGES OF THE FUTURE

FEBRUARY 24 - 25, 1992

THE NATIONAL ACADEMY
OF SCIENCES
2101 CONSTITUTION AVENUE, N.W.
WASHINGTON, D.C. 20418

Sponsored by:

The Whittaker Foundation
The National Science Foundation

University of Pittsburgh



JEROME S. SCHULTZ, DIRECTOR
CENTER FOR BIOTECHNOLOGY AND BIOENGINEERING
1133 BENEDUM ENGINEERING HALL
PITTSBURGH, PA 15261

Non - Profit Org
US POSTAGE
PAID
Pittsburgh, PA
Permit No 511

INTRODUCTION

You are invited to attend the inaugural conference for the American Institute of Medical and Biological Engineering (AIMBE). The recent formation of AIMBE is an outgrowth of a project entitled "*The Development of an Infrastructure for Bioengineering in the United States*" supported by the National Science Foundation.

The project stemmed from the realization that engineering research, development and practice in medicine and biology have become exceedingly dispersed. The trends provide clear evidence of the increasing importance of engineering to the advancement of science and technology in biology and medicine. There is a need to formulate and carry out coherent policies and agendas consistent with national interests. AIMBE is structured to provide the leadership for this diverse community of researchers, practitioners, and scientific societies to work together.

AIMBE consists of a Council of Fellows composed of distinguished individuals selected from the medical and biological engineering community, a Council of Societies composed of representatives of constituent societies, and a Council of Industries with participants from companies serving this field.

PROGRAM

AIMBE INAUGURAL CONFERENCE

MEDICAL AND BIOLOGICAL ENGINEERING:

A CELEBRATION OF THE PAST AND CHALLENGES OF THE FUTURE

Monday, February 24, 1992

ACHIEVEMENTS

Pacemakers
Artificial Organs
Injury/Auto Trauma/Safety
Minimally Invasive Surgery
Achievements in Medical Imaging
Biotechnology: Production of Therapeutic Agents
Orthopaedics
Engineering Insights into Living Systems

Tuesday, February 25, 1992

MEETING THE CHALLENGES OF THE FUTURE:

ENGINEERING A HEALTHIER AMERICA

Materials
Sensors
Tissue Engineering
Biotechnology
Improving the Health of America
Technology and the Quality of Life
Home Health Care
Self-Reliance in the Elderly
Technology to Reduce Health
Care Costs

SPEAKERS WILL INCLUDE:

DR. ALLAN BROMLEY
- PRESIDENTIAL SCIENCE ADVISOR
DR. D.A. HENDERSON
- OFFICE OF THE SCIENCE ADVISOR
DR. WILLIAM BRODY
- JOHNS HOPKINS UNIVERSITY
DR. EUGENE BELL
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY
DR. RICHARD FOULDS
- A.I. duPONT INSTITUTE
DR. DUDLEY CHILDRESS
- NORTHWESTERN UNIVERSITY MEDICAL SCHOOL
DR. PIERRE GALLETTI
- BROWN UNIVERSITY
DR. ROBERT M. NEREM
- GEORGIA INSTITUTE OF TECHNOLOGY
DR. JOSEPH BUCKWALTER
- UNIVERSITY OF IOWA
DR. ROBERT RUSHMER
- UNIVERSITY OF WASHINGTON
DR. ARTHUR JOHNSON
- UNIVERSITY OF MARYLAND
DR. Y. G FUNG
- UNIVERSITY OF CALIFORNIA, SAN DIEGO
DR. JEROME S. SCHULTZ
- UNIVERSITY OF PITTSBURGH
DR. WILLIAM HENDEE
- MEDICAL COLLEGE OF WISCONSIN
DR. ARTHUR HUMPHREY
- LEHIGH UNIVERSITY
DR. DOV JARON
- DREXEL UNIVERSITY/NSF
DR. JOSEPH ANDRADE
- UNIVERSITY OF UTAH
DR. ROBERT LANGER
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY

REGISTRATION

AMERICAN INSTITUTE OF
BIOLOGICAL ENGINEERING

MEDICAL AND BIOLOGICAL ENGINEERING
A CELEBRATION OF THE PAST
AND CHALLENGES OF THE FUTURE

FEBRUARY 24 - 25, 1992

NAME: _____

ADDRESS: _____

OFFICE TELEPHONE: _____

FAX: _____

FEE: \$150.00 CHECKS
PLEASE MAKE CHECKS PAYABLE TO:

PLEASE COMPLETE AND RETURN
REGISTRATION FORM WITH YOUR

JEROME S. SCHULTZ, DIRECTOR
CENTER FOR BIOTECHNICAL
AND BIOENGINEERING
UNIVERSITY OF PITTSBURGH
1133 BENEDUM ENGINEERING
Pittsburgh, PA 15261

Sally-

10/31

I saw Dr. Wong briefly this a.m.
He agreed to do this in Dr. Bromley's
place on Nov. 20 (dinner)

The working contact is Bill Laidlaw
Phone 314/872-8481 FAX 314-872-8495

He (or Lewis) will send Dr. Wong a ^(FAX) confirmation letter. Could you send Laidlaw
a copy of Dr. Wong's bio? Thanks Pierre

Document Originally
Attached to
Following Page

P.S.
In case you're wondering:
I got involved in this
because these guys
attended our social
Science meeting last
June. P



Subject _____

Date Sent to file _____

Post-it[™] file request pad 7667
59400

→ Mary Smit

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9124391

ORIGINATOR: 02

SPEECH: YES NO

FROM: LEWIS, Richard: AMERICAN ASSEMBLY OF COLLEGIATE
SCHOOLS OF BUSINESS.

DATE OF EVENT: 11/20/91 THRU: 11/21/91
TENTATIVE DATES:

LOCATION OF EVENT: GRAND HYATT HOTEL, WASHINGTON D.C.

TIME OF EVENT: 6:00 P.M.-8:00 P.M.

SUBJECT: RE: CONFIRMATION OF YOUR SPEAKING ENGAGEMENT AND AN
INVITATION TO DINNER WITH THE BOARD OF DIRECTOR'S
PRIOR TO YOUR SPEECH.

RSVP: 10/22/91

CONTACT PERSON: JACQUELINE HARRINGTON

CONTACT NUMBER: 314-872-8481

INVITATION ACCEPTED?

~~YES~~

NO

COPIES TO: Steve Olson

REMARKS:

11/20 Dr. Eugene Wong spoke to the Board
He was the keynote dinner speaker.

DATE OF LETTER: 10/11/91

DATE RECEIVED: 10/11/91

FILE: B-INVITATION-SPEECH 2

11/1 Mary Smit, FYI - Dr. Wong will give the speech in lieu of DAB SS

"INVITATION FOR DR. BROMLEY"

DOCUMENT NUMBER: 9124391

TYPE: INVITATION

ORIGINATOR: 02

SPEECH: YES NO

FROM: LEWIS, Richard: AMERICAN ASSEMBLY OF COLLEGIATE SCHOOLS OF BUSINESS.

DATE OF EVENT: 11/20/91 THRU: 11/21/91
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CONTACT PERSON: JACQUELINE HARRINGTON

CONTACT NUMBER: 314-872-8481

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COPIES TO: Steve Olson

REMARKS:

Sally -

10/31

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Phone 314/872-8481 FAX 314-872-8495

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CEIVED: 10/11/91

P.S.
In case you're wondering:
I got involved in this
because these guys
attended our social
Science meeting last
June.
p



4391
AMERICAN ASSEMBLY OF COLLEGIATE SCHOOLS OF BUSINESS
605 Old Ballas Road • Suite 220 • St. Louis, MO 63141-7077 U.S.A. • (314) 872-8481 • Fax (314) 872-8495

October 11, 1991

D. Allan Bromley
Assistant to the President for Science and Technology and
Director, Office of Science and Technology Policy (OSTP)
Old Executive Office Building
17th Street and Pennsylvania Avenue, N.W., Suite 360,
Washington, DC 20506

Dear Dr. Bromley:

This is to confirm our invitation for you to be the keynote dinner speaker for the American Assembly of Collegiate Schools of Business' Board of Directors DC Forum and Board meeting on November 20-21, 1991 at the Grand Hyatt Hotel, 1000 H Street, N.W., Washington, DC 20001.

Your remarks will be the capstone of an afternoon of meetings the Board will have had with representatives of the U.S. Departments of Labor, Education, and the U.S. Senate on workforce diversity and international technological competitiveness issues. We would like your remarks to focus on the U.S. technology policy and the importance of business schools' role in reshaping curricula and faculty research agendas to include management of technology issues. Our association has begun an initiative with a consortium of engineering and business schools and several corporations to create new models for revising curricula in management and engineering programs.

We hope that you will join us as our keynote dinner speaker and for a reception and dinner with the Board at the Grand Hyatt Hotel from 6:00 to 8:00 p.m. on November 20, 1991. I think you will enjoy networking with the group socially before your presentation. Your remarks will be an after dinner speech from 8:00 to 9:15 p.m. with time for questions and answers from the Board of Directors, senior management staff, and selected corporate executives, Congressional staff, and federal agency managers.

Your staff indicated earlier to us that this date was available, and I understand that our request was pencilled into your calendar pending receipt of this letter.

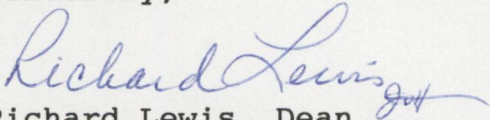
If you have any questions, please do not hesitate to speak with Jacqueline Harrington, Director of Public Policy, the AACSB manager who is coordinating the DC Forum for the Board of Directors. You can reach her at (314) 872-8481 in the St. Louis office. Her assistant's name is Cheryl Love, should Ms. Harrington be on a

Letter to Dr. Bromley
October 11, 1991
Page Two

business trip when you call.

We look forward to hearing from you immediately regarding this request, so we can confirm all the arrangements for your presentation.

Sincerely,

A handwritten signature in blue ink that reads "Richard Lewis". The signature is fluid and cursive, with a small flourish at the end.

Richard Lewis, Dean,
Eli Broad Schools of Management
Michigan State University and
AACSB President

cc: William K. Laidlaw, Jr., Executive Vice President
Charles Hickman, Director of Projects and Services
Jacqueline Harrington, Director of Public Policy

Enclosure: List of AACSB Board of Directors 1991-92

THE AMERICAN ASSEMBLY OF COLLEGIATE SCHOOLS OF BUSINESS

OFFICERS

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Richard J. Lewis, Dean, Michigan State University

Vice President-President Elect

Quiester Craig, North Carolina A & T State University

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Robert E. Witt, Dean, The University of Texas at Austin

Allan R. Bailey, Dean, San Diego State University

Robert C. Fisher, Dean, Henderson State University

Lester C. Thurow, Dean, Massachusetts Institute of Technology

Anita L. Underwood, Manager of Management Development, PepsiCo, Inc.

David H. Blake, Dean, Southern Methodist University

Alan G. Merten, Dean, Cornell University

Benjamin Newhouse, Dean, Tuskegee University

Peter C. Thorp, Vice President, Citicorp/Citibank, N.A.



AMERICAN ASSEMBLY OF COLLEGIATE SCHOOLS OF BUSINESS
605 Old Ballas Road • Suite 220 • St. Louis, MO 63141-7077 U.S.A. • (314) 872-8481 • Fax (314) 872-8495

4391
Cheryl Love

October 11, 1991

D. Allan Bromley
Assistant to the President for Science and Technology and
Director, Office of Science and Technology Policy (OSTP)
Old Executive Office Building
17th Street and Pennsylvania Avenue, N.W., Suite 360,
Washington, DC 20506

Dear Dr. Bromley:

This is to confirm our invitation for you to be the keynote dinner speaker for the American Assembly of Collegiate Schools of Business' Board of Directors DC Forum and Board meeting on November 20-21, 1991 at the Grand Hyatt Hotel, 1000 H Street, N.W., Washington, DC 20001.

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Cabin John - Roosevelt - Wilson Room

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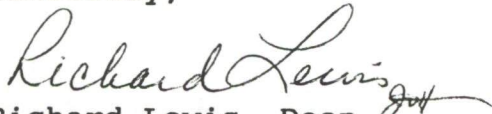
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Letter to Dr. Bromley
October 11, 1991
Page Two

business trip when you call.

We look forward to hearing from you immediately regarding this request, so we can confirm all the arrangements for your presentation.

Sincerely,

A handwritten signature in cursive script, reading "Richard Lewis".

Richard Lewis, Dean,
Eli Broad Schools of Management
Michigan State University and
AACSB President

cc: William K. Laidlaw, Jr., Executive Vice President
Charles Hickman, Director of Projects and Services
Jacqueline Harrington, Director of Public Policy

Enclosure: List of AACSB Board of Directors 1991-92

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Lester C. Thurow, Dean, Massachusetts Institute of Technology

Anita L. Underwood, Manager of Management Development, PepsiCo, Inc.

David H. Blake, Dean, Southern Methodist University

Alan G. Merten, Dean, Cornell University

Benjamin Newhouse, Dean, Tuskegee University

Peter C. Thorp, Vice President, Citicorp/Citibank, N.A.

"Document Control"

TYPE: INFORMATION ON AN INVITE DOCUMENT NUMBER: 9124397
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: STOUT, Herb: NATIONAL ASSOCIATION OF COUNTIES

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/10/91

SUBJECT: INFORMATION REGARDING DR. BROMLEY'S SPEECH AS WELL
AS A REQUEST FOR FLIGHT INFORMATION.

DIRECTORATE STAFF
ASSIGNED: DIRECTOR'S OFFICE ASSIGNED:

ACTION STAFF
REQUIRED: DIRECT REPLY ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 10/22/91 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
Steve Olson

WHITE HOUSE TRACKING #: CONTACT PERSON: MR. JIM GOLDEN
PHONE: 202-393-6226 EXT:
REMARKS:

OSTP RECEIVED: 10/15/91 DEPT RECEIVED:
FILE: P-INVITATION-SPEECH

437

**NATIONAL
ASSOCIATION
of
COUNTIES**

91 OCT 15 AM 11:32

440 First St. NW, Washington, DC 20001
202/393-6226

OFFICE OF THE
DIRECTOR

October 10, 1991

Dr. Allan Bromley
Assistant to the President for
Science & Technology
Old Executive Office Building
17th & Pennsylvania Ave., N.W., Suite 358
Washington, DC 20506

Dear Dr. Bromley:

Thank you for agreeing to be with us in North Carolina on October 29. Enclosed is a schedule of the events for the day. We understand from Dr. Sutton that you will be here and available at 1:00 p.m. If you will let us know your flight arrangements, Dr. Earl Mac Cormac and I will plan to meet your flight.

As you can see, we have activities scheduled before your arrival. We would particularly like for you to attend the luncheon if possible. An informal discussion with the participants of the day would be helpful if your schedule permits.

We have taken the liberty of scheduling a press conference for you. There is much interest in your visit and we are confident that there will be many questions. Please let me know if this is not appropriate, or if you have any suggested changes to the agenda.

Your contacts for arrangements are Mr. Jim Golden at the National Association of Counties (202/393-6226) and Mr. Bill Lee at the Triangle J Council of Governments in North Carolina (919/549-0551). Dr. Mac Cormac will be your host representing Governor Martin and he may be contacted at 919/733-6500.

Dr. Allan Bromley
Page 2
October 10, 1991

Again, we very much appreciate your participation in these events. We believe that our activities have the potential for great benefit to the citizens of our nation and we look forward to the continued association.

Sincerely,

A handwritten signature in dark ink, appearing to read "HERB STOUT". The letters are cursive and somewhat stylized, with the first name "HERB" in all caps and "STOUT" in a mix of caps and lowercase.

Herb Stout, Chairman
Research & Technology Focus Group

cc: Kaye Braaten, President, National Association
of Counties
Dr. Victoria Sutton, Assistant Director for the FCCSET
Dr. Earl Mac Cormac, Science Advisor to NC Governor
James Martin
Jim Golden, Research Director, National Association
of Counties
Bill Lee, TJCOC Staff

WORKING DRAFT
SCHEDULE FOR DR. D. ALLAN BROMLEY, ET. AL.
TUESDAY 29 OCTOBER 1991 VISIT TO RESEARCH TRIANGLE, NORTH CAROLINA

11:00 - 12Noon	Tour of NC Supercomputer Center
12Noon - 1:00PM	Lunch at MCNC
1:00PM	Dr. Bromley arrives
1:00 - 3:00PM	GIS Symposium at MCNC (Invited participants)
3:00 - 3:45PM	Demonstration of scientific visualization capability, etc NC Supercomputer Center
3:45 - 4:00PM	Press conference with Dr. Bromley NC Supercomputer Center
4:00 - 5:00PM	Dr. Bromley/NACo Research & Technology Focus Group
5:00 - 6:15PM	Unscheduled time (travel to Raleigh Marriott, check-in, etc.)

Triangle J Council of Governments 1991 Annual Awards Banquet/ Raleigh Marriott Crabtree

6:15 - 7:00PM Reception

7:00 - 7:45PM Dinner

7:45 - 8:30PM Program:
Herb Stout, Presiding
Kaye Braaten, NACo President (brief comments)
Dr. Earl MacCormac (sp?), Science Advisor to Gov. Martin
(introduction of Dr. Bromley)

Guest Speaker: Dr. D. Allan Bromley

8:30 - 9:00PM Presentations and Awards
(Volunteer of Year, Triangle Development Awards and
Triangle Land Conservancy Award)

"Document Control"

TYPE: INFORMATION ON AN INVITATION DOCUMENT NUMBER: 9124393
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: ROGERS, Robert H.: GLOBAL CHANGE CONFERENCE

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE:

SUBJECT: INFORMATION REGARDING DR. BROMLEY'S SPEECH TO BE
GIVEN AT THE "EARTH OBSERVATIONS AND GLOBAL CHANGE
DECISION MAKING: A NATIONAL PARTNERSHIP" CONFERENCE.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
PHYSICAL SCIENCES
ENVIRONMENT

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

OSTP RECEIVED: 10/15/91 DEPT RECEIVED:
FILE: P-INVITATION-SPEECH



Earth Observations & Global Change Decision Making: A National Partnership

Fall Conference

Dr. Allan Bromley
Assistant to the President for
Science and Technology
Old Executive Office Building, Room 360
Washington, DC 20506-0001

Dear Dr. Bromley:

On behalf of the Conference Sponsors and Organizing Committee, I would like to thank you for accepting our invitation to participate in the third conference, *Earth Observations and Global Change Decision Making: A National Partnership*. We are very pleased that you have agreed to deliver the keynote address, which is scheduled for 9:15 a.m. on Tuesday, October 22nd. We look forward to your address with enthusiasm. With the conference just a few days away, I would like to provide you with some information on administrative procedures.

The conference will be held at the National Press Club in downtown Washington, DC. The Press Club is located in the National Press Building, which is part of National Place, a mall occupying the block bounded by 13th, 14th, E, and F streets. For Tuesday's program and Wednesday morning's program, take the elevator from the lobby of the Press Building to the 13th floor. Wednesday afternoon's activities will be held at the JW Marriott Hotel, which is immediately south of the National Press Building, at 14th and E streets.

When you arrive at the conference please pick up your registration material at the Speaker's Desk in the Main Lounge, which is shown on the enclosed floor plan. As a conference speaker you will receive complimentary registration, which includes admission for both days, a ticket to both luncheons, admission to the reception and the picnic dinner at the National Zoo, admission to the reception and dinner at the National Air and Space Museum, and a copy of the proceedings. Please complete and return the enclosed form so we'll know which activities you plan to attend.

Your address is scheduled to begin at 9:15 a.m. on Tuesday, October 22nd. It is suggested that you plan to arrive at least 25 to 30 minutes in advance (8:45 a.m.) to allow time to pick up your registration materials, meet with the Master of Ceremonies, Mr. Canby, who will introduce you, and learn about the audio-visual equipment. This should all take place in the Speaker's Room, which is immediately adjacent to the Speaker's Desk in the Main Lounge (see the enclosed floor plan). You can enter the Ballroom directly from the Speaker's Room.

Immediately following your remarks you will be escorted to the Press Room (Morrow Room) for a brief press conference. If you have a prepared statement, photographs, or any other materials that you would like to make available to the press, please bring them to the meeting. The on-site Press Coordinators, Mr. Frank Lepore (NOAA) and Ms. Julie Trombly (ERIM), will be available in either the registration area or the Press Room. If you have any press questions, or would like to provide material in advance, please contact:

Ms. Julie Trombly, Press Coordinator
Global Change Conference (ERIM)
P.O. Box 134001
Ann Arbor, MI 48113-4001
Phone: (313) 994-1200, Ext. 3891
FAX: (313) 665-6559

In addition to the Press Club floor plan and return form mentioned above, a current copy of the preliminary program listing the other speakers and panelists is enclosed for your information. I look forward to meeting you and the other participants. Meanwhile, if I can provide any additional information, please contact me at (313) 994-1200, Ext. 3382.

I hope you will agree that the issues discussed during the conference are some of the most critical and exciting topics to face our nation in recent history. We look forward to your contribution to the conference as one of the leaders in the field.

Sincerely,

A handwritten signature in cursive script, reading "Robert H. Rogers". The signature is fluid and stylized, with a long horizontal stroke at the end.

Robert H. Rogers, Ph.D.
Chairman, Global Change Conference

Enclosures

cc: L. Moodie/NOAA
P. Backlund/NASA
L. Belcher/ERIM



Earth Observations & Global Change
Decision Making: A National Partnership

Fall Conference

CHECKLIST FOR MODERATORS AND INVITED SPEAKERS INFORMATION REQUIRED

CONFERENCE EVENTS

As a conference participant you are eligible to receive complimentary tickets to all special events, including the luncheons at the JW Marriott. However, we recognize that you may be too busy to attend all the conference functions. To help us plan, please complete and return the attached form.

PRESENTATION

A brief biographical sketch or vita will be needed to introduce you. If you do not plan to be at the conference until just before the panel begins, please fax your vita to Ms. Nancy Wallman (ERIM) as soon as possible. Also, be sure to indicate your audiovisual requirements on the attached form and fax that as well. Ms. Wallman's fax number is **(313) 994-5123**.

PROCEEDINGS AND VIDEOTAPE

To help us produce a complete proceedings and releasable videotape, please come to the Speakers' Room so we can receive the following items.

Written Statement: Converting transcripts into proceedings is a laborious, time-consuming process. If you have prepared your presentation in writing and could furnish conference organizers with a copy, it would help quicken the preparation of the proceedings and ensure the accuracy of your remarks. If possible, please submit your statement to the Speaker Coordinator in the Speakers' Room. (As a final check, a copy of your speech or remarks will be sent to you just prior to publication.)

Photograph: Your photo will also appear in the proceedings. If you can furnish a passport-style photo, please bring it to the Speakers' Room; otherwise the conference photographer will take your photo while you are in the Speakers' Room.

Copyright Release: Your statement and remarks cannot be published in the proceedings or released on videotape without a copyright release. For your convenience the copyright release form will also be available in the Speakers' Room.

CONFERENCE PHONE

All day on Tuesday and Wednesday morning, you can reach the conference staff or receive messages on **(202) 662-7526**. (The Wednesday afternoon sessions will be held in the Grand Ballroom at the JW Marriott.)

FURTHER INFORMATION

For additional information concerning conference arrangements contact Ms. Nancy Wallman at ERIM. Phone (313) 994-1200 ext. 3234 or fax: (313) 994-5123.

RETURN FORM

1991 CONFERENCE
EARTH OBSERVATIONS & GLOBAL CHANGE
DECISION MAKING: A NATIONAL
PARTNERSHIP

INVITED

SPECIAL EVENTS ATTENDANCE: I plan to attend all the events
or

☐ or none ☐

I plan to attend the luncheons at the JW Marriott on:

☐ Tues. ☐ Wed.

I plan to attend the event at the National Zoo on Monday

☐ 21 Oct @ 5 p.m.

I plan to attend the event at the Air & Space Museum on Tuesday

☐ 22 Oct @ 7:30 p.m.

AUDIOVISUAL REQUIREMENTS:

35- mm

☐ single

☐ dual

Video(size/type)

☐ VHS

☐ 3/4-in.

Overhead (viewgraph)

☐ single

☐ dual

PROCEEDINGS:

Yes, I will bring an extra copy of my prepared text to the conference.

☐

I will furnish my own photo for use in the proceedings

☐

or

Please schedule photographer to take my picture in the Speakers' Room.

☐

When form has been completed please add your name and FAX to:

INVITED SPEAKER:

GLOBAL CHANGE CONFERENCE
ATTN: NANCY WALLMAN
ERIM

FAX: (313) 994-5123

PHONE: (313) 994-1200 ext. 3234

PRELIMINARY PROGRAM

MONDAY EVENING, OCTOBER 21, 1991
A NIGHT AT THE ZOO
National Zoological Park

- 5:00** Reception and picnic dinner cosponsored by ERIM and the National Zoo.
- 7:00** A special program on wildlife and habitat will be organized by the park's director, Dr. Michael H. Robinson. Casual clothing and walking shoes are recommended. Bus transportation will be provided between conference hotels and zoo from 4:30 p.m. to 8:30 p.m. Admission is *free* for children of registered participants.

TUESDAY, OCTOBER 22, 1991

MASTER OF CEREMONIES: NATIONAL GEOGRAPHIC SOCIETY
Thomas Y. Canby, Senior Assistant Editor for Science

OPENING SESSION
National Press Club (Ballroom)

- 8:00** Registration and Continental Breakfast (Main Lounge)
- 9:00** Welcome and Conference Objectives
Dr. William M. Brown, President, Environmental Research Institute of Michigan
- 9:15** Keynote Address
Dr. D. Allan Bromley, Assistant to the President for Science and Technology
- 10:00** U.S. Strategy for Global Change Research
Dr. Robert Corell, Chairman, Working Group on Global Change, Committee on Earth and Environmental Sciences; Assistant Director, Geosciences Directorate, National Science Foundation
- 10:30** Break--Media Conference

10:45 Bringing Space to Earth

Invited Speakers:

Dr. Lennard A. Fisk, Associate Administrator, Office of Space Science and Applications, NASA

Dr. John Knauss, Under Secretary of Commerce for Oceans and Atmosphere, U.S. Department of Commerce

11:45 Media Conference

12:00 Lunch at the JW Marriott Hotel (Grand Ballroom, Salons I and II)

Luncheon Speaker:

Dr. Harm J. de Blij, Geography Editor for ABC's Good Morning America; Landegger Distinguished Professor, School of Foreign Service, Georgetown University; Geography Professor, University of Miami

2:00 PANEL 1: ENERGY, ECONOMICS, AND THE ENVIRONMENT--REACHING FOR CONSENSUS

National Press Club (Ballroom)

Moderator:

Mr. Paul Duke, Washington Week in Review

Panelists will include:

Mr. John Bryson, Chief Executive Officer, Southern California Edison

Dr. Robert Corell, Chairman, Working Group on Global Change, Committee on Earth and Environmental Sciences; Assistant Director, Geosciences Directorate, National Science Foundation

Mr. Howard Gruenspecht, Associate Deputy Under Secretary for Planning and Program Analysis, U.S. Department of Energy

Dr. John Perry, Executive Director, National Academy of Sciences; Director, Committee on Global Change Research

Dr. Louis Proenza, Science Advisor to Governor Walter Hickel of Alaska; Vice Chancellor for Research and Dean of the Graduate School, University of Alaska

The Honorable James H. Scheuer (D-NY), Chairman, Subcommittee on Environment, Committee on Science, Space, and Technology, U.S. House of Representatives

The Honorable Philip R. Sharp (D-IN), Chairman, Subcommittee on Energy and Power of the Committee on Energy and Commerce, U.S. House of Representatives

Mr. James Gustave Speth, President, World Resources Institute

Dr. Nat Woodson, Vice President, Energy Systems, Westinghouse Corporation

4:00 Media Conference

Adjourn

TUESDAY EVENING, OCTOBER 22, 1991

A CELEBRATION OF PLANET EARTH

National Air and Space Museum (Samuel P. Langley Theater)

7:30 Welcome and Introductions

Dr. Gregg Herken, Chairman, Department of Space History, National Air and Space Museum

Dr. William M. Brown, President, Environmental Research Institute of Michigan

Guest Speaker

The Honorable Robert Traxler (D-MI), Chairman, House Subcommittee on Appropriations for VA, HUD, and Independent Agencies, U.S. House of Representatives

IMAX screening of the "Blue Planet"

8:30 Reception and Dinner (Pioneers Hall)

Cosponsored by ERIM and the National Air and Space Museum. Music provided by Potomac Productions' piano quintet. Bus transportation between the conference hotels and the reception will be provided from 6:30 p.m. to 10:15 p.m.

WEDNESDAY, OCTOBER 23, 1991

MASTER OF CEREMONIES: SMITHSONIAN INSTITUTION

Dr. Thomas E. Lovejoy, Assistant Secretary for External Affairs

OPENING SESSION

National Press Club (Ballroom)

8:00 Registration and Continental Breakfast (Main Lounge)

9:00 Welcome and Remarks

Dr. Thomas E. Lovejoy, Assistant Secretary for External Affairs, Smithsonian Institution

9:15 Keynote Address

*The Honorable Edson Machado, Secretary of Science and Technology, Brazil
(invited)*

10:00 Break--Media Conference

10:15 PANEL 2: INTERNATIONAL POLICY AND ASSESSMENTS--IMPACT ON NATIONAL PROGRAMS

National Press Club (Ballroom)

Moderator:

Mr. Peter Thacher, Distinguished Fellow, World Resources Institute

Panelists will include:

Dr. Daniel Albritton, Intergovernmental Panel on Climate Change; Framework Convention on Climate Change; NOAA

Mr. Marcio Nogueira Barbosa, Director General, Instituto Nacional de Pesquisas Espaciais, Brazil

Dr. William Nitze, President, Alliance To Save Energy

Dr. Robert Watson, Intergovernmental Panel on Climate Change; Framework Convention on Climate Change; Chairman, Scientific and Technical Advisory Panel, Global Environmental Facility, World Bank; NASA

The Honorable Robert Zoellick, Under Secretary for Economic & Agricultural Affairs, U.S. Department of State (invited)

Representative, International Environmental Organization

11:30 Media Conference (Edward R. Murrow Room)

12:00 Lunch at the JW Marriott Hotel (Grand Ballroom, Salons I and II)

Luncheon Speaker:

The Honorable George E. Brown, Jr. (D-CA), Chairman, Committee on Science, Space, and Technology, U.S. House of Representatives

2:00 PANEL 3: GLOBAL CHANGE HITS HOME

JW Marriott Hotel (Grand Ballroom, Salons III and IV)

Moderator:

To be announced

Panelists will include:

Dr. Jay L. Buckley, President and Chief Executive Officer, EOSAT

Mr. John Doble, Vice President and Director of Research, The Public Agenda Foundation

Mr. Richard L. Gady, Vice President of Public Affairs and Chief Economist, ConAgra, Inc.

The Honorable Dennis M. Hertel (D-MI), Chairman, Subcommittee on Oceanography, Great Lakes, and the Outer Continental Shelf, Committee on Merchant Marine and Fisheries, U.S. House of Representatives

Mr. William T. Jeanes, Editor, Car and Driver Magazine

Dr. Thomas Karl, Chief, Global Climate Laboratory, NOAA

Dr. Frank Young, Deputy Assistant Secretary for Health, Science, and the Environment, U.S. Public Health Service

Representative, Major Wildlife or Wilderness Society

3:30 Break--Media Conference

3:50 PANEL 4: BUILDING A NATIONAL PARTNERSHIP

JW Marriott Hotel (Grand Ballroom, Salons III and IV)

Moderator:

Tim White, Host, Technopolitics; Anchor, Fox Morning News

Panelists will include:

Mr. Marcio Nogueira Barbosa, Director General, Instituto Nacional de Pesquisas Espaciais, Brazil

Dr. Radford Byerly Jr., U.S. House of Representatives, Chief of Staff, Committee on Science, Space, and Technology (invited)

Dr. Gary Evans, Chairman Working Group on Mitigation and Adaptation Research Strategies, Committee on Earth and Environmental Sciences, U.S. Department of Agriculture

Mr. Russell Koffler, Deputy Assistant Administrator for Satellite and Information Services, NOAA

Dr. William Nitze, President, Alliance To Save Energy

Mr. Peter Thacher, Distinguished Fellow, World Resources Institute

Dr. Shelby G. Tilford, Director, Earth Science and Applications Division, Office of Space Science and Applications, NASA

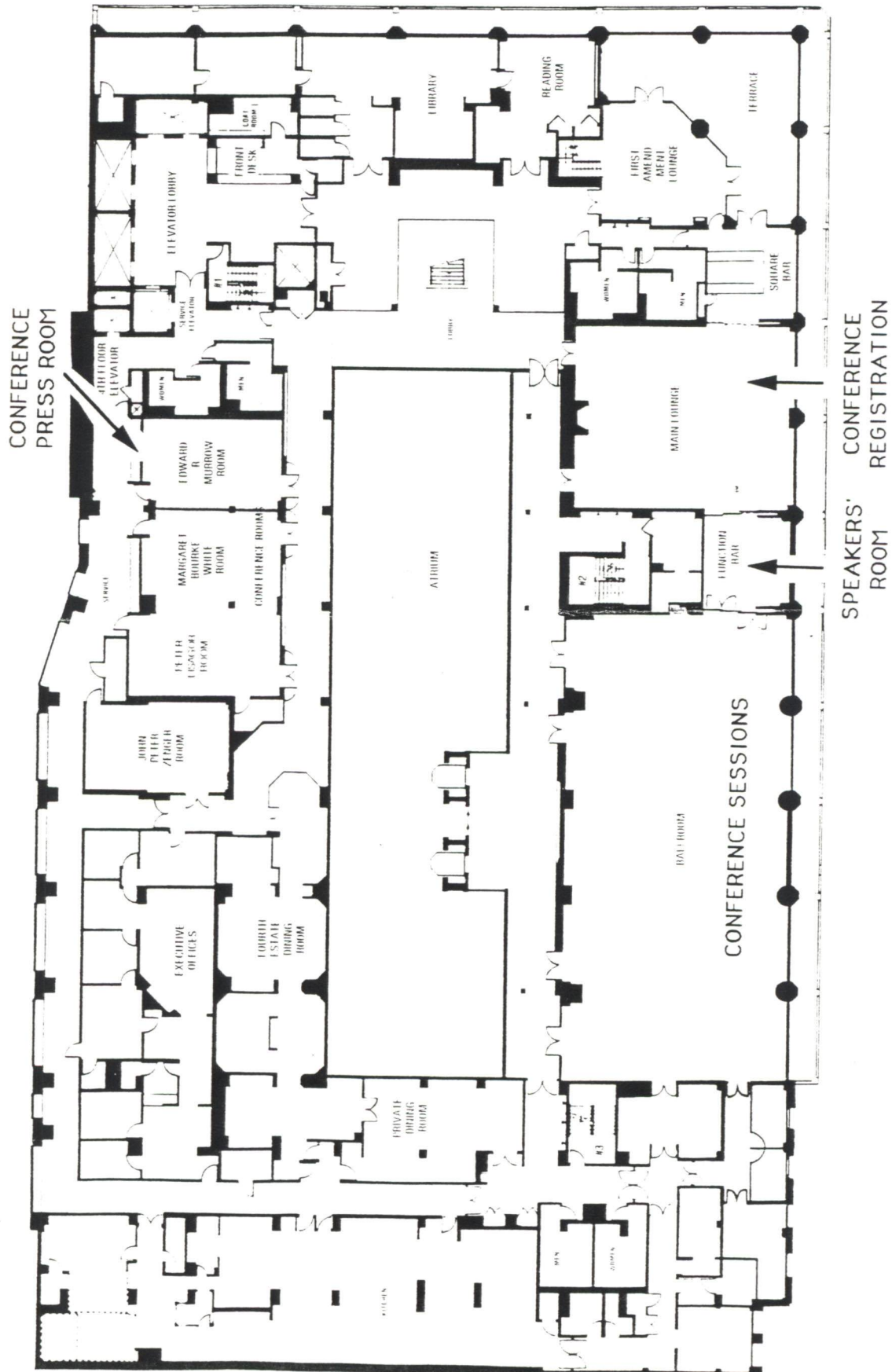
5:00 Media Conference

Adjourn

Global Change Conference - 22-23 October 1991
 (All sessions on Tuesday, the 22nd, and the morning sessions on the 23rd will be at the National Press Club.)



13TH FLOOR



"Document Control"

TYPE: ACTION DOCUMENT NUMBER: 9124381
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: RUDDY, Dianne B.: COORDINATOR, MEETING DEVELOPMENT, AMERICAN
CHEMICAL SOCIETY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/08/91

SUBJECT: RE: DR. BROMLEY'S SPEECH AT THE CHEMRAWN V11
CONFERENCE ON 12/03/91. ALSO REQUEST A BIOGRAPHY AND
AN COPY OF DR. BROMLEY'S SPEECH FOR PUBLICATION IF
POSSIBLE. A COPY OF THE AGENDA IS ENCLOSED

DIRECTORATE STAFF
ASSIGNED: DIRECTOR'S OFFICE ASSIGNED:

ACTION STAFF
REQUIRED: DIRECT REPLY ACTION: *Steve Olson*

SENDER'S DUE DATE:
OSTP DUE DATE: 10/25/91 STAFF DUE DATE 10/22/91
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: DR. BROMLEY

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

*Attached letter sent on 10/22 to meet
requests.
— Steve Olson*

OSTP RECEIVED: 10/11/91
FILE: P-INVITATION-SPEECH

DEPT RECEIVED:

CLOSED

*Damar - I put a copy of this letter
in Dr. Bromley's trip folder.
Lisa*

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

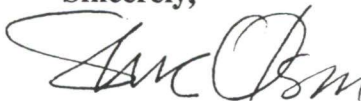
October 22, 1991

Dear Ms. Ruddy:

Regarding your letter of October 8, I trust that you have by now received a biography of Dr. Bromley that Dr. Pariser can use for an introduction.

You also asked in your letter for a copy of Dr. Bromley's presentation. A final copy will not be available before his talk, but he should be able to give you a final copy when he comes to Baltimore the morning of December 2. Also, he will not need any audiovisual equipment for his speech.

Sincerely,

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

Steve Olson
Special Assistant for Communications

Dianne Ruddy
American Chemical Society
Room 205
1155 16th Street, N.W.
Washington, D.C. 20036



4381

CHEMRAWN VII
WORLD CONFERENCE ON
THE CHEMISTRY OF THE ATMOSPHERE:
ITS IMPACT ON GLOBAL CHANGE

RECEIVED

Co-sponsors:
International Union of
Pure and Applied Chemistry

Baltimore, Maryland
December 2-6, 1991

91 OCT 11 AM 19
Please reply to:

American Chemical Society

October 8, 1991

OFFICE OF THE
DIRECTOR

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
The White House
1600 Pennsylvania Avenue
Washington, D.C. 20500

Dear Dr. Bromley:

Referring to earlier correspondence between Dr. Bryant Rossiter, Dr. D. A. Henderson and Mr. Steven Olson, we are writing to you regarding arrangements for your participation in the Chemrawn VII world conference to be held December 2-6, 1991 at the Stouffer Harborplace Hotel in Baltimore, Maryland.

Your presentation is scheduled from 9:15 - 10:00 AM on Monday, December 3, 1991. You may wish to allot some of your time for questions from the audience, however, this is entirely up to your discretion.

Please send us a biographical outline or text which Dr. Pariser, your session chairperson, may use for your introduction.

We understand that your very demanding schedule may require you to leave Baltimore soon after your presentation. Of course, we would like for you to stay as long as possible. Please let us know your schedule in more detail so that we might help plan your time with us.

Should you require any hotel accommodations in Baltimore, please let us know by returning the Hotel Reservation Form in the enclosed Final Circular. Your hotel accommodations will be complimentary.

We are planning to publish the presentations of the first day of the conference as well as the banquet presentation as part of the booklet entitled "Perspectives and Recommendations" for the Chemrawn VII conference, which we anticipate will receive wide circulation. We wish to include your presentation. If you are in agreement, please bring with you or send to us ahead of time a manuscript suitable for this publication.

The meeting room will be set with the following audio-visual equipment: a 2 inch x 2 inch (35 mm) slide projector, overhead projector, screen, lighted podium with remote slide control, lapel microphone and electric pointer. Please advise us immediately if you require any additional audio-visual equipment. An audio-visual office, with slide-viewing facilities will be located at the Stouffer Harborplace Hotel. Carousels will be available for loan if you wish to load your slides prior to your session.

We feel confident that Chemrawn VII will be a highly important and successful conference. On behalf of the Organizing Committee, we thank you for accepting our invitation and we look forward to your participation.

Should you have any questions or require assistance, please do not hesitate to contact me at (202)872-4402 or my Program Assistant, Debbie Harms at (202)872-6286. Our Fax number is (202)872-6128.

Sincerely,

A handwritten signature in dark ink, appearing to read "Dianne B. Ruddy". The signature is fluid and cursive, with the first name "Dianne" being more prominent than the last name "Ruddy".

Dianne B. Ruddy
Coordinator, Meeting Development
American Chemical Society

Enclosure (1)

cc: Dr. D. A. Henderson
Mr. Steven Olson
Dr. Bryant W. Rossiter
Dr. Rudolph Pariser
Dr. Jack Calvert

Final Circular

THE CHEMISTRY OF THE ATMOSPHERE: ITS IMPACT ON GLOBAL CHANGE

CHEMRAWN VII A WORLD CONFERENCE

Registration and Hotel Information
Stouffer Harborplace Hotel
December 2-6, 1991
Baltimore, Maryland, USA

*Sponsored by The International Union of Pure and Applied Chemistry
Co-sponsored by The American Chemical Society
in association with The National Academy of Sciences and
The Third World Academy of Sciences*

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9124383

ORIGINATOR: 02

SPEECH: YES NO

FROM: CHU, C.W.: UNIVERSITY OF HOUSTON

DATE OF EVENT: 02/26/92 THRU:
TENTATIVE DATES:

LOCATION OF EVENT: TEXAS CENTER FOR SUPERCONDUCTIVITY, HOUSTON TEXAS.

TIME OF EVENT:

SUBJECT: AN INVITATION FOR DR. BROMLEY TO SPEAK AT THE
DEDICATION CEREMONY FOR THE HOUSTON SCIENCE CENTER
BUILDING. FOLLOWING THE CEREMONY THERE WILL BE A
WORKSHOP ON HTS: NEW MATERIALS AND BULK
APPLICATIONS.

RSVP: 10/25/91

CONTACT PERSON: C.W. CHU, DIRECTOR

CONTACT NUMBER:

INVITATION ACCEPTED?

YES

NO

COPIES TO: PHYSICAL SCIENCES

REMARKS: ADDITIONAL INFORMATION WILL BE FORWARDED WHEN AVAILABLE.

DATE OF LETTER: 10/07/91

DATE RECEIVED: 10/11/91

FILE: P-INVITATION-SPEECH

CLOSED

THE WHITE HOUSE
WASHINGTON

November 13, 1991

Paul

Dear Professor Chu:

Thank you for your letter of October 7, 1991, inviting me to be the keynote speaker at the dedication of the superconductivity research facility and International Workshop scheduled for February 26, 1992 in Houston. I apologize for the much belated response.

As you can appreciate, the number of invitations I receive that entail traveling out of town is overwhelming, and I am finding that I cannot be away from Washington as much as I might like. Although I would like to join you and your colleagues on this special occasion, the next several months are already heavily committed, so I must regretfully decline.

I appreciate your thinking of me and would like to offer my best wishes for the dedication.

Sincerely yours,

Duan

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

Professor C. W. Chu
Temple Chair of Science and
Director, Texas Center for Superconductivity
University of Houston
Houston, Texas 77204-5932

*I would have liked
to join you but I am
completely overbooked
for the period.
DAB*



**Texas
Center for
Superconductivity**

University of Houston
TCSUH-Office of Public Affairs
Houston Science Center
Houston, Texas 77204-5932
(713) 743-8210
FAX: (713) 743-8201

4383

RECEIVED

October 7, 1991 91 OCT 11 A10:18

Dr. Alan Bromley
Assistant to the President for Science, and
Director, Office of Science and Technology Policy
Old Executive Office Building
17th St. & Pennsylvania Avenue, N.W.
Washington, D. C. 20506

OFFICE OF THE
DIRECTOR

Dear Alan:

I enjoyed seeing you again last week at the dinner hosted by Dr. Aaron Cohen, and wish to extend a standing invitation for you to visit the Texas Center for Superconductivity at the University of Houston anytime convenient to you, particularly on February 26, 1992 for the dedication of the Houston Science Center Building. I would appreciate the opportunity to show you our laboratories and better acquaint you with the research programs in the materials sciences in general, and superconductivity in particular. The Center receives support from the State, the Federal Government, industry and private foundations, setting an example of a partnership for future research and development in the U. S.

The University of Houston plans to formally dedicate our new facility, the Houston Science Center, on February 26, 1992. We would be greatly honored if you could join us as a special guest and keynote speaker for the event, on any topic of your choice. We shall unveil publicly the building on the UH campus that houses one of the premier superconductivity research facilities in the world. Following the dedication ceremonies, TCSUH will host an International Workshop on HTS: New Materials and Bulk Applications, for approximately 120 experts to exchange information and to explore ways to push back the frontier in HTS science and technology. If time permits, a few words from you on the Federal Government's view on HTS research and development will no doubt be the highlight of the workshop. I will send you additional information on the event as soon as it is available.

I have enclosed a few articles about the Center's research endeavors for your reading pleasure, and hope that you will find them to be informative.

Sincerely,

C. W. Chu
Temple Chair of Science and
Director, Texas Center for Superconductivity
at the University of Houston

A National Program for the Superconducting Electric Power System of the Future

April 1991

Prepared by the *ad hoc* Industry Working Group
on Power Applications of High-Temperature Superconductors

***ad hoc* Industry Working Group on Power Applications of High-Temperature Superconductors**

The *ad hoc* Industry Working Group on Power Applications of High-Temperature Superconductors is an informal confederation working to encourage development of power applications of high-temperature superconductors.

The *ad hoc* Industry Working Group was initiated in early 1990 and met several times during the year to enhance committee communications about problem solutions, group collaborations, and potential funding opportunities, and to act as an information resource for government and funding agencies.

As a result of a December 20, 1990, meeting organized by Dr. Robert M. White, Under Secretary of Commerce for Technology, the *ad hoc* Industry Working Group undertook development of this report to address how an industry-led consortium could accelerate the efforts in the United States for developing magnet and power applications of the new superconductors. Working meetings were held on January 16, January 29, and March 22 of 1991 to outline, develop, and then review the concept documented in this report.

Participants and their organizations are listed on the opposite page.

Participants

Allied-Signal Aerospace Company	Hans Friedericy
American Superconductor Corporation	Anil Trivedi
Argonne National Laboratory	Joseph A. Barresi
AT&T	Alexis P. Malozemoff
Corning, Incorporated	Gregory J. Yurek
CPS Superconductor	Elton N. Kaufmann
Council on Superconductivity for American Competitiveness	Sungho Jin
David Sarnoff Research Center	Tom Dwyer
DuPont Company	John Halloran
Electric Power Research Institute	Robert W. Kiernan
Emerson Electric	Kevin D. Ott
General Atomics	Jay T. Brandinger
General Dynamics	Ed Mead (retired)
General Electric Company	Thomas R. Schneider (Coordinator)
Illinois Superconductor	Donald W. Von Dollen
Intermagetics General Corporation	Allen Crapo
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Massachusetts Institute of Technology	Robert A. Olstad
Oak Ridge National Laboratory	Bob Johnson
Reliance Electric	Lee R. Patterson
SUNY-Buffalo	Jim Bray (Working Group Chairman)
SYCOM	Jim Hodge
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University of Maryland/Bellcore	John Stekly
University of Pennsylvania	Rod K. Quinn
University of Wisconsin	Gene Stark
Westinghouse Electric Corporation	Leslie Bromberg
Wright Patterson Air Force Base	Tony Schaffhauser
	Howard Jordan
	Peter Tsivitse
	David T. Shaw
	S. Lynn Sutcliffe
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	T. Venkatesan
	Bruce Merrifield
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	Garth A. Clarke
	Samuel Harkness
	Carl Heyne
	Charles Oberly

Table of Contents

Executive Summary	1
Background	2
Electric Power Equipment Market	2
The Industrial Market	3
The Defense Market	3
Recent Technical Progress	3
U.S. HTSC Research Effort	5
A National Banner Program	7
The Focus on Electric Power Systems	8
The Appropriate Development Level for Prototypes	8
Program Management	9
Summary Findings	10
Summary Recommendations	10
Conclusion	11

Executive Summary

The United States is in a global economic competition of mammoth proportions with formidable rivals such as Japan and the now-forming European Community. At stake in the struggle are the nation's jobs, standard of living, balance of payments, economic power, leadership in new commercial and defense technology, and, ultimately, U.S. political influence in the next century.

Energy applications of high-temperature superconductor (HTSC) technology present an important and visible battleground where the United States can take the initiative and establish a leadership position. But other nations may overtake the United States in HTSC technology unless the country acts quickly to create a national HTSC-development strategy.

HTSC technology is so promising because superconductors—unlike conventional conductors that lose energy through heat-producing electrical resistance—are able to conduct electricity with *little or no loss of energy or power* when cooled below a specific minimum temperature (the "transition temperature").

This highly efficient method to conduct and utilize electricity holds great promise for the nation. To capitalize on this untapped potential, this report recommends that the United States

(1) Starting in 1992, form a \$250 million, five-year national program to develop HTSC prototypes of electric energy systems—providing focus for the development of HTSC wires and associated cryogenics—including superconducting motors, generators, transmission lines, transformers, and energy storage

(2) Coordinate federal agency funding to promote significant private-sector participation and investment in HTSC

(3) Establish vertically-integrated, industry-led teams¹ with representation from manufacturers, universities, national laboratories, and HTSC users (such as electric utilities) to address the superconductor applications mentioned above at a precompetitive level but with a long-term, market-driven focus

By developing HTSC applications for use in electric power systems, large motors, and other large-scale energy applications, this industry/government partnership can make the nation a leader in developing HTSC technology.

The report does not address HTSC applications in electronics, computers, or sensors. Rather, this proposed program builds on recommendations from the Report of the National Commission on Superconductivity, which calls for a major U.S. "prototype, high-temperature, superconducting wire and magnet project" to focus the country on developing superconductor technology. The National Commission recommended federal funding for the program to compensate for "a disadvantageous business environment in the United States, rooted in high interest rates, unfavorable tax policy, antiquated anti-trust laws, and other factors [that] discourage U.S. industry from investing in high-risk technologies such as superconductivity."²

Unless both U.S. industry and government mobilize for a concerted effort in power applications of the new HTSCs, the country's prospect of a lead position in this field may be irretrievably lost, and another potentially major industrial sector—along with its associated jobs, national income, and a position of technology leadership—will be left for foreign competitors. The industry/government partnership described here can prevent such a loss, but only with determined involvement from both parties.

1. The word team is used to denote any reasonable approach to achieving the necessary close coordination. It can be a prime contractor with several subcontractors, an R&D partnership, consortium, joint venture, or other arrangements that ensure a route to commercialization and an incentive for success.

2. Report of the National Commission on Superconductivity, August 7, 1990.

Background

In August of 1990, the National Commission on Superconductivity recommended that a five-year program be established to build a magnet rated at 1 tesla (10,000 gauss) from the newly discovered ceramic HTSCs. Yet in January of 1991, Sumitomo of Japan announced that they already had built a 1-tesla coil from these same materials.³ Although this magnetic field was produced at 4.2 K (-459°F), the five-year objective of the National Commission on Superconductivity may be accomplished at 20 K (-423°F) and perhaps even at 77 K (-320°F) within the next year. Even though these temperatures are still low, they have significant technical impact by making it possible to use mechanical cryocoolers and inexpensive liquid nitrogen and by avoiding the costly and cumbersome liquid helium cooling required for work at 4.2 K.

In addition to having rekindled interest in superconducting electrical equipment, these new results make development of higher temperature superconducting wire and cable a realistic prospect. Developing specific tests of prototype components of a superconducting power system will provide commercial focus and speed the development of the enabling wire and cable technology.

Both the Japanese and the Europeans are working to develop superconducting power systems using traditional low-temperature superconductors (LTSC) such as niobium-titanium and niobium-tin, which require liquid helium cooling at 4.2 K. The well-financed Japanese Super GM project will demonstrate the use of these LTSCs in power applications.

With an aggressive program, the United States could leapfrog its competition by demonstrating the components of a high-temperature system

within the next five years. For superconducting products to become a reality there must be a strong impetus for the development of this technology—an impetus that will come only when customers see the advantages of such products. This report proposes the development of market-oriented—but precompetitive—prototypes for such products.

Electric Power Equipment Market

The potential U.S. and world markets for electric power systems are large, including the electric utilities (equipment and systems required to generate and deliver electric power), as well as industrial, transportation and defense applications.^{4,5}

Environmental issues and concerns about the security of the nation's petroleum supply will require the United States to develop new electric energy technologies. For example, densely populated areas will likely demand increased use of electric transportation to reduce locally severe environmental effects of the automobile. To meet growing demands, the electric power system of the future must generate and deliver significantly more power while being subject to increasingly severe siting and environmental constraints. Meeting these needs will require the technology to support compact, efficient electrical equipment. HTSC is at the forefront of new technologies that can improve electrical equipment and meet the country's growing power requirements.

Incorporating high-temperature superconductors into electrical equipment significantly improves electrical efficiency and can result in

3. Bi-System Magnet generating 1-tesla at 4.2 K (Sumitomo Electric Industries) pp.1-3, Nikkei Superconductors, February 4, 1991 [translated from Japanese].
4. Energy Applications of High Temperature Superconductors, EPRI ER-6682, 1990, Vol. 1, 2.
5. Report of the Defense Science Board Task Force on Military System Applications of Superconductors, October 1988.

substantial cost savings. For example, the delivery of electricity, while efficient, loses about 7% of generated power between source and customer. This translates into approximately \$12 billion annually. Using HTSCs in generators, transmission lines, and transformers would reduce these losses. In addition, it would also reduce fuel consumption and air pollutant emissions, and could increase power generation and delivery capabilities within existing rights-of-way.

The Industrial Market

The industrial sector also should benefit greatly from HTSC technology as power and magnet applications offer industrial users significant opportunities to realize energy savings. In fact, these savings may have a far greater impact than savings due to HTSC use by electric utilities themselves. The numerous potential applications include motors, MAGLEV transportation, magnetic bearings, magnetic refrigeration, magnetic processing of materials, energy storage, and supercomputers.

Because motors consume so much of the country's energy—about 65% of all electrical energy used nationwide—the development of HTSC motors could yield substantial energy savings. Most of these savings would be achieved by replacing large motors (>125 hp) which consume about half of all energy used by motors. Also, high-efficiency superconducting motors would command a significant market position because they have reduced life-cycle costs and a compact size.

The Defense Market

Defense is another industry that could benefit from HTSC applications. Power systems for defense applications require ever-increasing power levels. Increases in size and weight associated with conventional technology result in substantial cost and efficiency penalties. On the other hand, the compact nature of superconducting motors/generators offer valuable weight and size advantages for space, aerospace, shipboard,

and mobile applications. For example, compact, lightweight, and efficient aircraft generators could produce considerably more power for a given size and weight than presently available machines for various Air Force systems (such as AWACS or complicated, electrically-powered weapon systems).

Superconducting generators would offer a completely new option for defense power systems of the future. They would enhance performance not only for small compact systems used in aircraft, but also for large power systems required for Naval shipboard electric drive propulsion. It should now be possible to develop highly reliable cryogenics required for HTSC cooling, making electric propulsion for ships a practical possibility for the first time.

Recent Technical Progress

While the prospects for rapid improvements in high-current applications were unclear at best at the beginning of 1989, today's outlook offers far more promise. Major advances in the performance of "bulk," high-current superconductors occurred in 1990.

The best measure of performance for today's high-temperature superconductors is the current-carrying ability of these wires, expressed as critical current per HTSC cross section, in amperes per square centimeter (J_c). The graph in Figure 1 illustrates the recent impressive progress achieved in increasing the current-carrying properties of advanced superconductor wires.

As identified in Figure 2, performance of short-length prototype wires now falls well within the range of targets for practical high-current, electric-power applications. However, the highest performance achieved as yet is at low temperatures (4.2 K) only.

Coupled with this January's announcement by Sumitomo Electric Corporation of a 1-tesla HTSC coil operating at 4.2 K, these data indicate that serious development of HTSC applications should begin now.

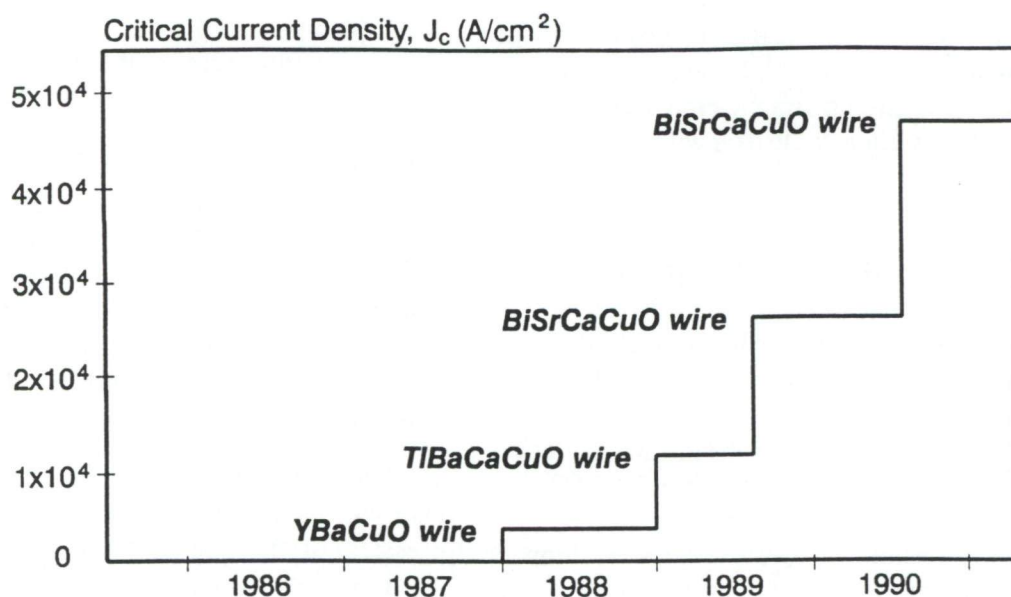


Figure 1: Recent advances in critical current density performance boost the viability of power applications.

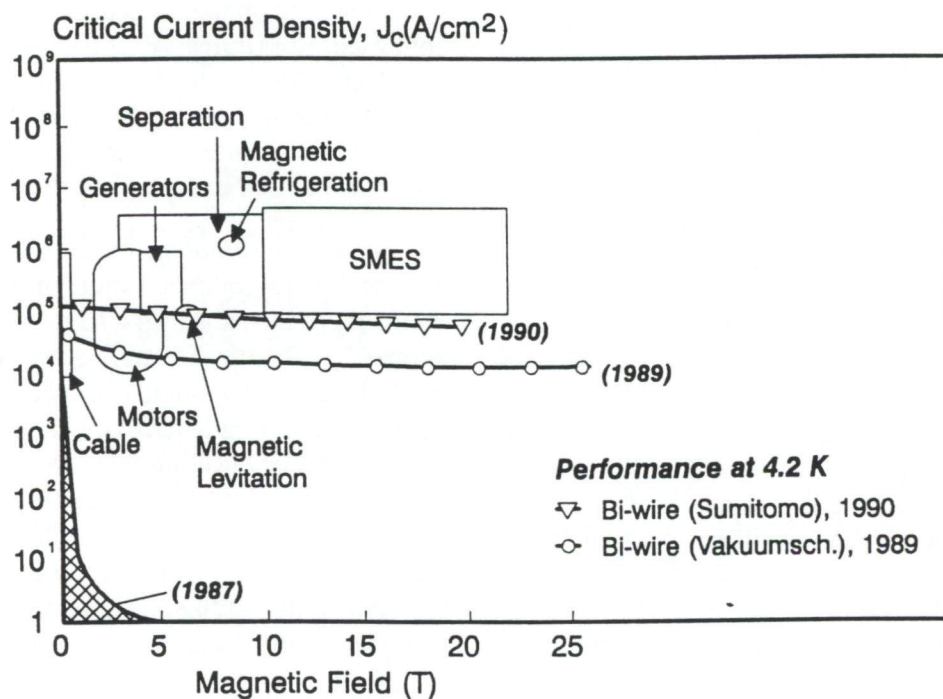


Figure 2: The new HTSC prototype wires meet the performance requirements for several power applications.

Important challenges remain, however, for materials development, including improving performance at higher temperatures and at all magnetic field orientations. Other challenges include the development of practical wire and tape processing for long lengths and designs for low ac loss, quench protection, mechanical properties, and other device-performance requirements. An aggressive program could deal with these technical hurdles effectively.

U.S. HTSC Research Effort

Given these recent technological advances and the substantial market for electric power equipment, one might think the United States would be anxious to charge ahead with the development and commercialization of HTSC for power applications. However, this is not happening. Unfortunately, the United States' position in the development of high-current HTSCs—the key to technology for power applications—lags increasingly behind the major efforts of its global competitors: As seen in Figure 3, the U.S. manpower devoted to HTSC development is surprisingly low, approximately equal to that of China and less than that of Japan, Europe, and the USSR.⁶ If current trends continue and HTSCs fulfill their potential, the United States could find itself relying primarily on foreign manufacturers for efficient electrical equipment in the next century.

Several factors contribute to the nation's lagging position:

The U.S. business environment tends to inhibit private sector investment in the long-term energy and power applications of HTSC, a prime example of a technology that requires long-term, "patient-capital" development. Issues such as the high cost of capital, the risky nature of the investment, and the lengthy development time discourage investors. The usual discounted-rate-of-return calculations—so fundamental to U.S. business practice—result in industry's neglect of

projects that don't pay off quickly. In other countries, especially Japan, lower capital costs and government support allow industry to maintain development efforts much longer before showing a profit.

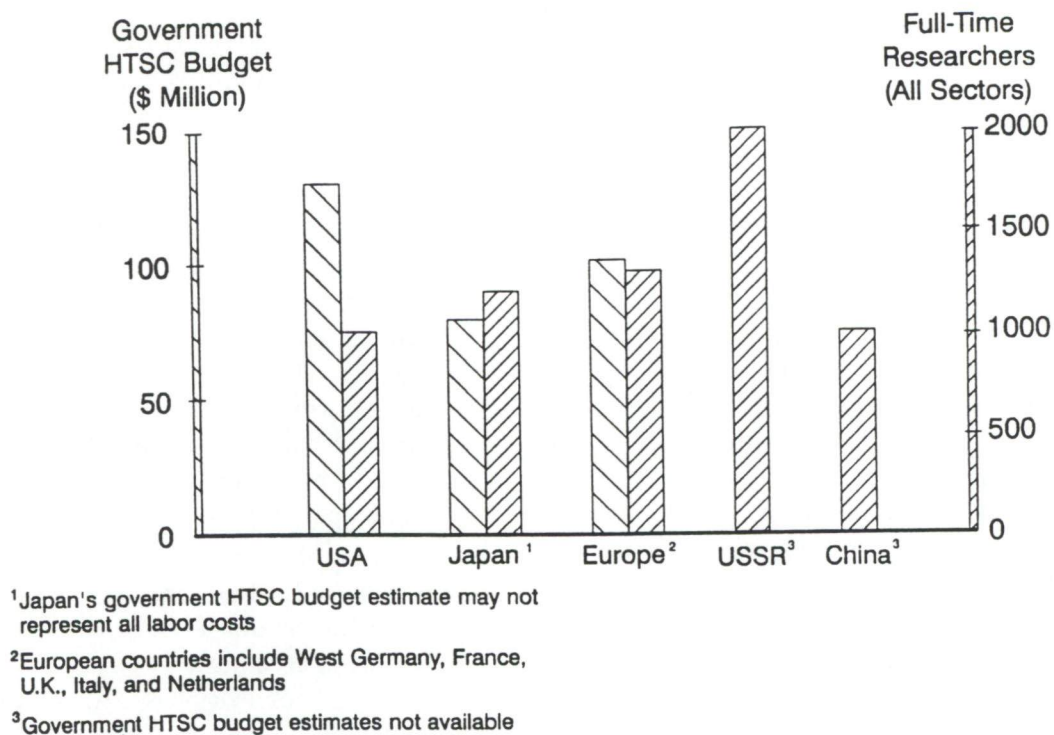
Market forces are another factor that contribute to the nation's position. International competition for electrical equipment is intense, and the U.S. industry often has focused on satisfying only the domestic market. As a result, when the market for electrical equipment declined in the 1970s, the domestic-market pull on new electric technology slowed. This loss of domestic markets was further exacerbated by the fact that U.S. companies were not positioned to focus on the export market.

The U.S. electric manufacturing industry also was damaged severely by the market depression of the late 1970s and 1980s. Efforts are needed to rebuild the industrial base to meet the reemerging international and domestic market for more efficient, environmentally acceptable energy systems.

Market forces in particular disrupted U.S. development of superconducting generators in 1983 when the domestic electric industry market collapsed. The United States had been an aggressive leader in this field, but as a result of the market collapse, further national efforts in superconductivity were then discontinued while major efforts continued in Japan and West Germany.

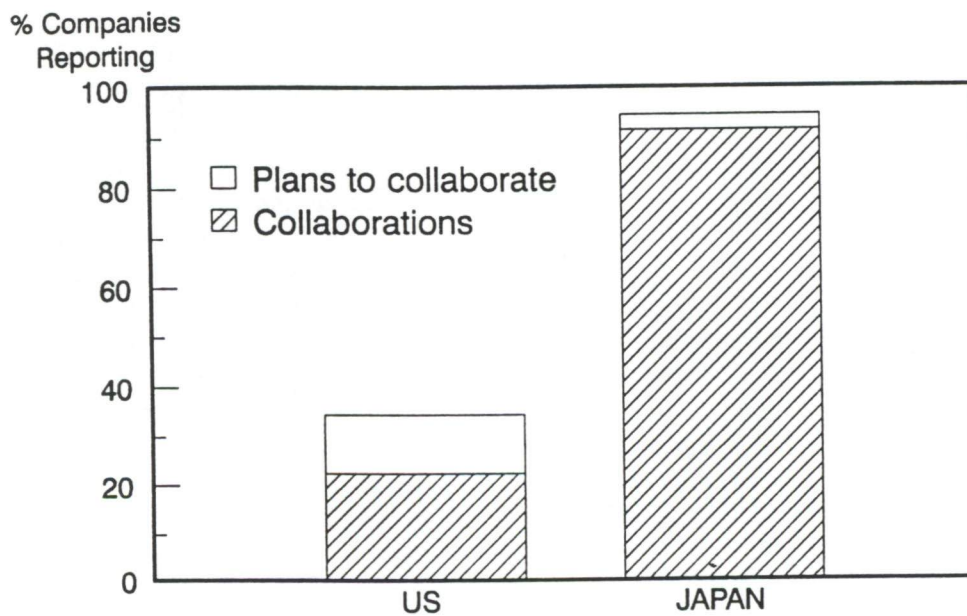
Lack of coordination within the United States also is a factor. Compared with Japan and Europe, the United States suffers from a fragmented approach with little effective coordination within the industrial development sector and between the federal government and the industrial sector. Japan's "Super GM" project—which addresses most aspects of a superconducting power system—is exactly the type of competition that this report proposes to counteract. Figure 4 compares the cooperative industrial research programs of the United States and Japan.

6. High-Temperature Superconductivity in Perspective, U.S. Congress, Office of Technology Assessment, April 1990.



Source: Office of Technology Assessment, 1990

Figure 3: The United States faces tough international competition in HTSC research and development.



Source: Office of Technology Assessment, 1990

Figure 4: Our competition is organized for success.

A National Banner Program

This report proposes a National Banner Program to focus and enhance national efforts to develop a power system using HTSC technology. Because of the lengthy precompetitive development period—which involves substantial investment risk—federal support is required for HTSC development.⁷ Federal coordination is needed to avoid a piecemeal approach and to ensure that industry research efforts do not overlap. With the government providing initial financial leadership, industry can follow with manufacturing development efforts ultimately leading to a national HTSC power system.

Many recent studies, commissions, and reports already have pointed in a similar direction, but the aggressive, coherent program recommended here integrates and expands on many aspects of those earlier efforts. This program is consistent with earlier recommendations, but also takes into account the remarkable technical progress made last year.

Key elements of the recommended National Program are highlighted below:

- *Develop prototypes* of superconducting motors, generators, transmission lines, transformers, and superconducting magnetic energy storage (SMES) to demonstrate the key components of a superconducting electric power system.
- Build these prototypes with *high-temperature superconductors* specifically designed to meet the unique demands of each application. As part of the program, refrigeration systems (cryocoolers or cryogens such as liquid nitrogen) should be developed. The conductors should operate at temperatures between 20 K and 77 K (-423 °F and -320 °F) or higher if future material developments permit.
- Develop these prototypes to be *credible demonstrations of HTSC technology*, but at a precompetitive level. The prototypes should be commensurate to a significant degree with ultimate applications in both the defense and commercial sectors. The testing of these prototypes would be done by electric utilities and industrial, commercial, and defense users to establish the prototypes' value in actual operating systems.
- Carry out this Program *over five years commencing in 1992 at a total funding level of \$250 million* (approximately \$50 million per year). To put this in context, Table 1 shows estimated federal government plans to spend nearly \$250 million on a full range of superconducting applications in 1991. However, little of this is going to the high power HTSC applications addressed in the Banner Program.
- *Ensure a collaborative effort with significant private-sector participation* including overall technical leadership, as well as participation by national laboratories and universities where appropriate.
- *Manage the program* through several vertically integrated, multi-disciplinary teams that would address each of the main project areas listed above. Teams should include organizations ranging from material suppliers and electrical equipment manufacturers to ultimate end-users such as utilities and defense agencies. The program management should have a clear mandate to develop and pursue the overall program.

7. High-Temperature Superconductivity: Perseverance and Cooperation on the Road to Commercialization, The Committee to Advise the President, The White House Science Council, 1988.

Summary Findings

- Significant advances in the development of more practical HTSC performance occurred last year, enhancing the prospect for ultimate commercial applications. However, further developments are still required for commercial success.
- While federal participation is necessary, the success of a national program to develop high-current superconductors for magnet and power applications will depend upon increased industry participation in superconductivity R&D.
- Ongoing government-directed programs in high-current superconductor research have been only partially successful in attracting major private sector participation. Consequently, the United States is falling behind its competition—especially Japan—in HTSC development for magnet and power applications.
- Experience shows that federal co-funding is necessary for a competitive effort to develop in today's business environment. Although U.S. private industry acknowledges the enormous potential market value of superconductors, it is reluctant to invest in superconductor development because of high investment costs, uncertain profits, and the long-term commitments needed for investment return for a technology that will take many years to bring to market.
- The required efforts in research and manufacturing-technology development are beyond the scope and capabilities of individual universities, national laboratories, and most companies.

Summary Recommendations

- The nation urgently needs an industry-led program to develop HTSCs for power-system prototypes including motors, generators, transmission lines, transformers, and energy storage systems. Successful developments can lead to substantial energy savings, reduced fuel consumption, and reduced air pollutant emissions. Developing the technology in the United States can positively affect the nation's jobs and high-technology leadership position.
- As a "banner" to provide the Program with impetus and focus, all the major components of a superconducting power system should be developed, including motors, generators, transmission lines, transformers, and energy storage, each with specific HTSC conductor characteristics and refrigeration systems.
- A coordinated multi-agency funding by agencies such as DOC, DOD, DOE, and NSF is required to encourage private-sector investment, deliver both defense and civilian applications, and foster development of an industrial base for future commercialization.
- Because the potential applications span a wide range of performance and market requirements, the Program must seek several alternative technical routes for the different "prototypes." Industry-led, vertically integrated, multidisciplinary teams—including personnel from industry, universities, and national laboratories—should pursue the solutions. Private-sector investment is expected to increase as the technology moves from demonstration to commercialization, although it may be modest at first.
- The cost of this precompetitive Banner Program is estimated at approximately \$50 million per year for a five-year period. For final commercialization, the private sector's subsequent development of the manufacturing capability will take at least another five years and is expected to cost over \$1 billion.

Conclusion

The United States has the talent and facilities necessary to develop HTSC for power applications, but without prompt action, our opportunity to be a world leader in HTSC technology will be missed. Although the nation's resources are ample, they are scattered among many different organizations (in industry, universities, and national laboratories), few having the required critical mass of technical or financial resources. Formation of nationally coordinated teams with clear goals and adequate long-term support would provide the United States' best opportunity to

achieve international leadership. Industry alone cannot provide the necessary funding for a program of this scale. Much of the long-term R&D funding must be provided by the public sector.

By rallying around the Banner Program, U.S. industry and government can mobilize for an aggressive strategy to create successful power applications. The industry/government partnership described here can be the path to success. What is needed now is courage and commitment to move forward.