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OA/ID Number: 62017
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Folder Title:
Invitations: Speech (2) [3 of 6] [1991]

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"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9124813

ORIGINATOR: 02

SPEECH: YES NO

FROM: FUSFELD, Herbert: RENSSELAER POLYTECHNIC INSTITUTE

DATE OF EVENT: 06/23/92 THRU: 06/25/92
TENTATIVE DATES:

LOCATION OF EVENT: STRESA, LAKE MAGGIORE

TIME OF EVENT:

SUBJECT: AN INVITATION TO ATTEND THE INTERNATIONAL
CONFERENCE, "EFFECTIVE USE OF GLOBAL TECHNICAL
RESOURCES".

RSVP: 12/02/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED? YES ☒ NO

COPIES TO: INDUSTRIAL
Steve Olson

REMARKS: 11/22/91 - Regretted to Vickie in Fusfeld's office

CLOSED

DATE OF LETTER: 11/08/91

DATE RECEIVED: 11/15/91

FILE: P-INVITATION-SPEECH



4813

Rensselaer

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NOV 15 4:10:39

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School of Management
Center for Science and Technology Policy

Herbert I. Fusfeld
Chairman, Advisory Board

OSTP
MAIL ROOM

November 8, 1991

Dr. D. Allan Bromley
Assistant to the President for
Science and Technology
Old Executive Office Building
17th and Pennsylvania, NW
Washington, D.C. 20506

Dear Allan:

During our lunch in Washington on September 25th, I mentioned our Sixth International Conference in Stresa, on Lake Maggiore, 23-25 June 1992. The theme is "Effective Use of Global Technical Resources".

The program is developing very well, as you can see from the enclosures. I know you are interested in the subject, and the participants are a unique blend of industry and government, OECD and non-OECD countries. This will be limited to about 125 invitees.

Question: Is there a realistic chance that you would be able to participate? It is a lovely spot to combine with a vacation, even a long weekend! Several of our American colleagues are doing exactly that, e.g., Alex MacLachlan of DuPont and Alan Chynoweth of Bellcore.

Given your impossible schedule, I would not try to integrate you into the formal structure. A more flexible arrangement would be to plan tentatively for a luncheon talk, preferably Tuesday, June 23rd. It could also be Wednesday, June 24th. A possible alternative would be after the five industry workshops are concluded at about 5:00 P.M. on Wednesday, June 24th.

There are no plans for speakers at any of these times now. If you are at all interested, I will leave it that way. The final program will be printed in April, so we could review your schedule by then.

The point now is that if you place it on your schedule now, there is a 30-40% chance that you will make it. If you do not, there is no chance.

I should mention that the principal financial support is coming from the Commission of the European Communities (\$75,000). UNESCO and UNIDO

have each committed \$10,000. I anticipate that NSF will provide \$20,000. When I am in Tokyo the week of November 11th, I will request \$20,000 from Japan (MITI, STA, or the Ministry of Foreign Affairs). OECD may also provide \$10,000. So the base of support is quite broad.

Your contribution on whatever aspect of the subject you care to address will be valuable for the discussions I believe your participation would be of benefit in your own agenda and responsibilities. I hope your schedule can cooperate. Best regards.

Sincerely,

A handwritten signature in dark ink, appearing to read 'H. I. Fusfeld', written in a cursive style.

Herbert I. Fusfeld

cc: T. Ratchford

Individuals Planning to Participate in Stresa Conference
"Effective Use of Global Technical Resources"
23-25 June 1992

Cezary A. Ambroziak	Deputy Chairman, State Committee for Scientific Research, Poland
Sergio Barabaschi	Deputy General Manager, Ansaldo SpA
Harry L. Beckers	Chairman, Industrial R&D Advisory Committee (IRDAC), Commission of the European Communities
Erich Bloch	former Director, National Science Foundation
Peter Boer	Executive Vice President, WR Grace and Co. (President, Industrial Research Institute)
K. Bulthuis	Senior Managing Director, Philips Research
Alan Chynoweth	Vice President, Applied Research, Bell Communications Research
Umberto Colombo	President, Italian Agency for Nuclear and Alternate Energy; President, European Science Foundation
Jean-Pierre Contzen	Director General, Joint Research Center, Commission of the European Communities
Hans G. Danielmeyer	Board Member for R&D, Siemens A.G.
Guillermo Fernandez de la Garza	Executive Secretary for the Committee on Energy Conservation for the Secretary of Energy, Mines, and Government Owned Industries
Elof Johansson	Head of Science and Technology, Procordia AB and Member of the Executive Committee

Yutaro Kaneko	Associate General Manager, Pharmaceutical Dept., Ajinomoto Co., Inc.
Jean-Claude Lehmann	Vice President of R&D, Compagnie de Saint Gobain
Alexander MacLachlan	Senior Vice President, Technology, E.I. du Pont de Nemours and Company, Inc.
John P. McTague	Vice President for Research, Ford Motor Co. and member of the President's Council of Advisors on Science and Technology (P-CAST)
Yasuo Nakajima	Member of the Board and General Manager, Central Engineering Laboratories, Nissan Motor Co., Ltd.
Sogo Okamura	President, Tokyo Denki University
Erno Pungor	Chairman, National Committee for Technological Development (DMFB), Hungary
Domingo L. Siazon	Director General, United Nations Industrial Development Organization
Erich Spitz	Directeur General Adjoint, Recherche et de la Technologie, Thomson (President, European Industrial Research Management Association)
James R. Street	Group Research Coordinator, Shell Oil Co.
Craig Tedmon	Executive Vice President, ABB ASEA Brown Boveri Ltd.
Michiyuki Uenohara	Executive Advisor to Chairman, Nippon Electric Corporation
Paolo Zannoni	Vice President, International Activities, Chief Executive Representative for Fiat in USSR

Draft of Conference Structure on
"Effective Use of Global Technical Resources"
September 26, 1991

* has accepted

Session I Statement of Issues

Chairman: *Harry L. Beckers, Chairman Industrial R&D Advisory
 Committee (IRDAC), Commission of the European
 Communities

Welcoming Remarks: The Minister of Research, Italy

Technical Needs and Objectives of Developed Industrial Nations
 Filippo Pandolfi, Vice President, Commission of the European
 Communities

Technical Needs and Objectives of Developing Countries
 *Domingo L. Siazon, Jr., Director General, United Nations
 Industrial Development Organization (UNIDO)

Role of Industry in Integrating Global Technical Resources
 *John Armstrong, Senior Vice President for Research, IBM

Session II Mechanisms for Linking Technical Resources

Chairman: *Sogo Okamura, President, Tokyo Denki University

Establishing a Foreign Laboratory
 A.S. Ganguly, Director in Charge of Research and Engineering,
 and Board member, Unilever

Use of Computer Networks to Provide Global Inputs and Linkages
 *Erich Bloch, former Director, National Science Foundation

Integration of Technical Resources in a Multi Domestic, Multinational
Corporation
 *Craig Tedmon, Executive Vice President, ABB Asea Brown
 Boveri, Inc.

Use of R&D Grants and Contracts
 Claude Jablon, Director of Research, Elf Aquitaine

Session III Experiences of non-OECD Countries

Chairman: Dulce Aranau de Uzategui, Minister of Science and Technology, Venezuela

Saleh Abdelrahman Al Athel, Chairman, King Abdulaziz City for Science and Technology, Saudi Arabia

*Cezary A. Ambroziak, Deputy Chairman, State Committee for Scientific Research, Poland

*Guillermo Fernandez de la Garza, Executive Secretary for the Committee on Energy Conservation for the Secretary of Energy, Mines, and Government Owned Industries, Mexico

Blagovest Sendov, President, Bulgarian Academy of Sciences, Bulgaria

Session IV Industry Workshops

Electronics: *Erich Spitz, Directeur General Adjoint, Recherche et de la Technologies, Thomson (President, European Industrial Research Management Association)

*Mitsuyuki Uenohara, Executive Advisor to Chairman, Nippon Electric Corporation

*Alan Chynoweth, Vice President, Applied Research, Bell Communications Research

John Taylor, Director of HP Laboratories (Europe), Hewlett-Packard

*C. Bulthuis, Senior Managing Director, Philips Research

Chemistry: *Jean-Claude Lehmann, Vice President of R&D, Compagnie de Saint Gobain

*Peter Boer, Executive Vice President, W.R. Grace Co. (President, Industrial Research Institute)

*Alexander MacLachlan, Senior Vice President, Technology, E.I. du Pont de Nemours and Company, Inc.

*James R. Street, Group Research Coordinator, Shell

Yoshihiko Nishizawa, Sr. Managing Director, Sumitomo Chemical Co., Ltd.

Pharmaceuticals: F. L'Eplattenier, Member of Executive Committee,
Ciba-Geigy AG

*Yutaro Kaneko, Deputy Director, Ajinomoto Co., Inc.

*Elof Johansson, Head of Corporate R&D, Pharmacia
AB

P.J. Strijkert, Member of the Board, Royal Gist-Brocades,
N.V.

Autos: Lars-Göran Rosengren, Director of Technological
Development, AB Volvo

*John McTague, Vice President for Research, Ford
Motor Co.

J.-J. Payan, Directeur de la Recherche, Regie Nationale
des Usines Renault

*Paolo Zannoni, Vice President, International Activities,
Chief Executive Representative in USSR, Fiat

*Yasuo Nakajima, General Manager, Nissan Motor Co.,
Ltd.

Electromechanical: *Sergio Barabaschi, Deputy General Manager, Ansaldo
SpA

Tomihiko Taniguchi, Director, Electric Power
Technology, Ministry of International Trade and Industry

Masana Minami, Senior Manager, Research Planning,
Toshiba Corporation

Bernhard Schmidt, Chairman of Board, Diehl GmbH

Wayne Burwell, Director of Research, United
Technologies Corporation

Session V Recommended Actions

Chairman: Emilio Muñoz, President, Consejo Superior de Investigaciones Cientificas (CSIC), Spain

Role of Government

*Erno Pungor, Chairman, National Committee for Technological Development (DMFB), Hungary

Objectives and Plans of Industry

*Hans G. Danielmeyer, Board Member for R&D, Siemens

Future Technical Linkages with the Soviet Union

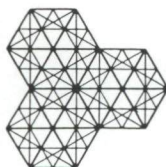
Eugeny Velikhov, Vice President, Academy of Sciences, U.S.S.R.

Role of International Agencies

*Jean Pierre Contzen, Director General, Joint Resarch Centre, Commission of the European Communities

Conclusions and a Look Ahead

*Umberto Colombo, President, Italian Agency for Nuclear and Alternate Energy; President, European Science Foundation



Conference Program

19-22 June 1989

Location:

**Wijk Conference Center
Stockholm, Sweden**

**Sponsored by the
Center for Science and Technology Policy
Rensselaer Polytechnic Institute, School of Management
and
Trygghetsradet SAF-PTK
Swedish Employment Security Council**



AN INTERNATIONAL CONFERENCE ON CHANGING GLOBAL PATTERNS OF INDUSTRIAL RESEARCH AND DEVELOPMENT

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and
Trygghetsradet SAF-PTK
Swedish Employment Security Council**



We are deeply grateful to Trygghetsradet SAF-PTK for providing the major funding for this conference and for their generous cooperation in planning the program and arrangements. We wish to express our appreciation to the Royal Swedish Academy of Engineering Sciences (IVA) and the National Swedish Board for Technical Development (STU) for their support. We are also grateful for further support from the Organization for Economic Cooperation and Development (OECD), European Communities (EC), National Science Foundation (NSF) and the European Institute of Technology. We greatly appreciate the efforts of Dr. Nils Starfelt, former Swedish Science Counsellor in the U.S., for his considerable contribution to the planning and arrangements for this Conference.

CENTER FOR SCIENCE AND TECHNOLOGY POLICY

Director: Herbert I. Fusfeld

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CONFERENCE THEME



Significant forces are affecting the conditions in which industry must operate internationally. The European market changes of 1992, the restructuring of U.S. industry, the growth of strategic alliances, increased efforts by government to strengthen industry, increasing concern about the environment — all affect corporate decisions on plant locations, market strategies, foreign investments, organizational structure, and management.

Any shift in corporate behavior or organization is likely to be reflected by a comparable shift in the industrial R&D activities which support corporate operations and strategies. The priorities, structure and management of industrial research and development will evolve in a pattern that functions most effectively for the changing corporations. Since the process of technical change and its importance for economic growth and national security are influenced strongly by the amount and direction of industrial R&D, these changes are as important to national policies as they are to corporate strategies.

The Conference is designed to establish a basis for strengthening industrial research and development in the face of these changes. It will provide a forum for senior executives from government and industry to review and discuss **(1)** the possible impact of global trends, both geopolitical and industrial, that are shaping the environment for industrial R&D; **(2)** the effect of those trends on specific industrial sectors; and **(3)** possible responses in those sectors by government, industry, and academia. All discussions will consider the human factors involved — the motivation and participation of scientists and engineers.



AGENDA

MONDAY • 19 June 1989

1400-1900 **Registration**

1900

Evening Reception

TUESDAY • 20 June 1989

0900 **Introduction**
Conference Herbert I. Fusfeld, Director,
Chairman: Center for Science and Technology Policy
 Rensselaer Polytechnic Institute (U.S.)
 (Past President, Industrial Research Institute)

SESSION I — Changing Global Environment for Industrial Research and Development

Chairman: Stellan Artin, Senior Vice President, Swedish
 Employers' Confederation (SAF); Member of the
 Board, Trygghetsradet

Welcoming Remarks

Ivar Nordberg, Minister of Industry (Sweden)

The Need for Change in Industrial Policy and Performance

Curt Nicolín, Chairman, ASEA AB and ABB,
ASEA Brown Boveri, Ltd. (Sweden)

New Patterns of World Trade and Production
H. Peter Gray, Professor of International
Economics, Rensselaer Polytechnic Institute (U.S.)

Coffee Break

Changing Role of Government in Strengthening Industrial R&D

Fabio Pistella, Director General, National Agency
for Nuclear and Alternative Energy (ENEA) (Italy)
(current President of Eureka Council)

New Channels for Flow of Science and Technology

John Marcum, Secretary General,
European Institute of Technology (France)

1230

Luncheon — Intermission

1400

SESSION II — Changing Strategic Context for Industrial Research and Development

Chairman: Erich Bloch, Director,
National Science Foundation (U.S.)

The Role of MITI in Industrial Research and Development

Chihiro Watanabe, Professor/Director,
International Program, Graduate School of Policy
Science, Saitama University (formerly Director,
Agency for Industrial Science and Technology,
MITI) (Japan)

Semiconductors

Larry Sumney, President,
Semiconductor Research Corporation (U.S.)

1800

Mechanical/Electrical Engineering

Bengt Kredell, Senior Vice President, Corporate
Research Staff, ASEA Brown Boveri (Sweden)

Coffee Break

Biotechnology

Nowell Stebbing, General Manager,
Pharmaceutical Research, ICI Pharmaceutical (UK)

Human Resources for Industrial Research and Development

Hans Ursing, Managing Director, Swedish
Employment Security Council (Trygghetsradet)
(Sweden)

Boat Excursion

in the beautiful archipelago outside Stockholm

WEDNESDAY • June 21, 1989

INDUSTRY WORKSHOPS

0900

SESSION III — Regional Trends in Industrial Research and Development

Five workshops conducted simultaneously.

Chairman: Electronics
Erich Spitz, Executive Vice President for Research
and Development, Thomson-CSF (France)

U.S. Alan Chynoweth, Vice President, Applied
Research, Bell Communications Research (U.S.)

Europe Nico Hazewindus, Director of Corporate
Product Development Coordination, Philips
International BV (Netherlands)

Japan Masahiro Kosaka, Director, International R&D
Center, Matsushita Electric Industrial
Co., Ltd. (Japan)

Chemical/Pharmaceutical

Chairman: H.J. Heller, Research Director, Ciba-Geigy AG
(retired) (Switzerland) (Past President, European
Industrial Research Management Association)

U.S. Richard Quisenberry, Director of Research,
E.I. duPont de Nemours & Company, Inc. (U.S.)

Europe Maurits W. Geerlings, Executive Vice President
and Board Member, Research and Technology,
Akzo N.V. (Netherlands)

Japan Y. Nishizawa, Managing Director,
Sumitomo Chemical Co., Ltd. (Japan)

Mechanical/Electrical Engineering

Chairman: David A.H. Jacobs, Manager, New Technologies,
Central Electricity Generating Board (CEGB) (UK)

U.S. Lamont Eltinge, Director of Research,
Eaton Corporation (U.S.)

Europe Sergio Barabaschi, Deputy General Manager,
Ansaldo SpA (Italy)

Japan To be announced

Transportation

Chairman: Stig Ericsson, Vice President, Engineering and
Manufacturing, Scania Division, Saab-Scania AB
(Sweden)

U.S. John McTague, Vice President, Research,
Ford Motor Company (U.S.)

Europe Carlo Eugenio Rossi, President,
Fiat Research Center, Fiat (Italy)

Japan Yasuo Nakajima, General Manager, Central
Engineering Laboratories, Nissan Motor Co., Ltd.
(Japan)

Materials

Chairman: Orvar Nyquist, Chairman, Swedish Steel
Producers Association (Jernkontoret) (Sweden)

U.S. Peter Bridenbaugh, Vice President, Research
and Development, Aluminum Company of
America (U.S.)

Europe Yves Farge, Vice President, Research and
Development, Pechiney (France)

Japan To be announced

1400

SESSION IV — Pressures for Change in Research and Development

The afternoon workshops will discuss any relevant factors — multinational laboratories, university relations, consortia, patents, technical alliances, and the role of R&D in today's environment.

Electronics

Chairman: Serge Fournier, Vice President, Networks
Technology, Bell-Northern Research Limited
(Canada)

Chemical/Pharmaceutical

Chairman: Kerstin Sirvell, President, KabiGen (Sweden)

Mechanical/Electrical Engineering

Chairman: Ronald F. Konopacki, Director, Manufacturing
Services, Combustion Engineering Company
(U.S.)

Transportation

Chairman: Wayne Burwell, Director, Research,
United Technologies Corporation (U.S.)
President-elect, Industrial Research Institute

Materials

Chairman: G.F. Moore, Technical Director,
BICC Cables Limited (UK)

Part of each workshop will have some discussion of factors relating to the human resources in R&D — training, mobility, participation, and so on. To stimulate the discussion, Dr. Olle Hammerstrom will give a short presentation at each workshop, if time permits. He is head of the Research Department for the Swedish Board of Clerical and Technical Employees in Industry (SIF).

1800

Reception

2000

Conference Banquet with entertainment

THURSDAY • June 22, 1989

0900

SESSION V — Implications for Industrial Research and Development of 1992 Changes in Market Conditions within the European Community

Chairman: Sven Olving, President, Royal Swedish Academy of Engineering Sciences (IVA) and President, Chalmers University of Technology (Sweden)

View of Government

Hubert Curien, Minister for Research and Technology (France)

View of European Industry

Hans G. Danielmeyer, Senior Vice President and Member of Board, Corporate Research and Development, Siemens AG (West Germany)

View of Non-European Industry

Edwin Przybylowicz, Senior Vice President and Director of Research, Eastman Kodak Company (U.S.)

Concluding Presentation: A Look Ahead

A.E. Pannenburg, Member of Board of Management (retired), N.V. Philips Gloeilampenfabrieken (Netherlands)

1200

Adjournment



PROGRAM PARTICIPANTS

Stellan Artin

Stellan Artin is the Senior Vice President and member of the Executive Policy Group of the Swedish Employee's Confederation (SAF). He has been a Director of SAF since 1975. Mr. Artin has served as the social attache at the Swedish Delegation to the European Communities and the Swedish Embassies in Belgium, France and the Netherlands. He had been General Secretary of the Swedish National Union of Students (1961-64). Mr. Artin has a B.A. and LL.B. from the University of Lund.

Sergio Barabaschi

Sergio Barabaschi is currently the Deputy General Manager of the Ansaldo Group, Genova, Italy. He has held multiple positions at NUCLITAL, including Head of Corporate Research, Head of the Power Electronics Division, and President. Professor Barabaschi serves on the boards of Milan Polytechnic and of Genova Ricerche, and is President of C.R.I.S., a Research Consortium of the Ansaldo Group. He is a member of the Scientific & Technical Committee of the European Economic Community; the High Technology Council of the United Nations; and, the Scientific and Technical Council of Lingurian County. Professor Barabaschi holds senior member status in the A.S.M.E., I.E.E.E., A.E.I., and A.N.S. (a former A.N.S. Executive Committee member).

Erich Bloch

Erich Bloch has been Director of the National Science Foundation, since 1984. Before joining NSF, Mr. Bloch's career with IBM Corporation encompassed numerous management and

professional positions including Vice President for Technical Personnel Development, Vice President of the Data Systems Division, and General Manager of the East Fishkill facility (home of the development and manufacture of semiconductor components used in most of IBM's product line). Awarded the National Medal of Technology by President Reagan in 1985 for his part in pioneering developments related to the IBM/360 computer that "revolutionized the computer industry," Mr. Bloch holds numerous honorary degrees. He is a Fellow of both A.A.A.S. and I.E.E.E. in addition to being a member of I.E.E.E.'s Computer Society and the N.A.E. He received an education in electric engineering at the Federal Polytechnic Institute of Zurich, Switzerland and holds a B.S. in electrical engineering from the University of Buffalo.

Peter R. Bridenbaugh

Peter Bridenbaugh is Vice President for Research & Development of the Aluminum Company of America (Alcoa). Joining Alcoa in 1968, he has held various managerial positions at the Alcoa Technical Center and at plant locations. Dr. Bridenbaugh serves on advisory boards at Drexel University, Carnegie-Mellon University, University of Pittsburgh, Pennsylvania State University, Stanford University, Massachusetts Institute of Technology, and the University of Virginia. In addition, he also serves on the board of the Industrial Research Institute, the Council on Superconductivity for American Competitiveness, and the National Strategic Materials and Minerals Advisory Committee. A Fellow of ASM International, Dr. Bridenbaugh is a member of Sigma Xi, the American Institute of Mining and Metallurgical Engineers, the American Society for Engineering Education, and the Directors of Research Institute.

Wayne G. Burwell

Wayne Burwell is the Director of Research at United Technologies Corporation. During his 27-year research career with UTC, he has held various research and supervisory positions in propulsion, kinetics and heat transfer, thermal sciences, gas lasers, and energy research, including Deputy Director of Research. Dr. Burwell actively serves on multiple boards, councils, and committees: He is President-elect of the Industrial Research Institute; a Vice President of the American Management Association and Chairman of its Research and Development Council; a board member of the Software Productivity Consortium; a member of the University of Hartford's Engineering Executive Council and the advisory council for the National Center for Supercomputing Applications at the University of Illinois. The author of over 25 scientific papers and three U.S. Patents, Dr. Burwell received his B.S., M.S., and Ph.D. in mechanical engineering from Yale University.

Alan G. Chynoweth

Alan Chynoweth is Vice President of Applied Research for Bell Communications Research (Bellcore). In his long tenure with Bell Laboratories, Dr. Chynoweth has worked in Physics Research, as head of the Crystal Electronics Department, as Director of the Materials Research Laboratory, and as Executive Director of the Electronic and Photonic Devices Division. He has been actively involved in committee studies of the National Academy of Sciences, has served on the National Materials Advisory Board, and has served as consultant to the NATO Panel on Advanced Study Institutes and Research Workshops. The author of over 60 papers, co-editor of the book, **Optical Fiber Telecommunications**, and holder of 11 patents, Dr. Chynoweth received his B.S. and Ph.D. degrees in physics from the University of London. He was a Postdoctoral Fellow at the National Research Council of Canada.

Hubert Curien

Hubert Curien is the French government's Minister of Science and Technology. Dr. Curien also teaches physics at Paris University. He has served as Director General of the Centre National de la Recherche Scientifique, President of the Centre National d'Etudes Spatiales, and Council Chairman of both the European Space Agency and of the European Science Foundation. He has served as President of the Scientific Council of the Ministry of Defense, and of numerous university and national councils. His honors include Commander of the Legion d'honneur. Dr. Curien received the doctor of science from the Ecole Normale Supérieure. He is the author of books and articles on physics, crystallography, and mineralogy.

Hans G. Danielmeyer

Professor Danielmeyer is a member of the Board of Management, Senior Vice President and Head of Corporate Research and Development for Siemens AG, Munich, FRG. Professor Danielmeyer left his dual position as President of both the Technical University of Hamburg-Harburg and the Hamburg Institute of Technology to join Siemens as Vice President for Central Research and Development, 1986. He has served as a member of the technical staff at Bell Laboratories' Coherent Wave Physics Department, as Group Leader at Stuttgart's Max Planck Institute for Solid State Physics, and as Chair in Solid State Physics at the University of Hamburg. He is a member of the Senate of the Fraunhofergesellschaft, Munich; the Planning Committee of the Max Planck Gesellschaft, Munich; the Board of the Gesellschaft für Mathematik und Datenverarbeitung, Birlinghoven; and, is Vice President of the Japanese-German Center in Berlin. He holds degrees in physics from the University of Stuttgart and an M.B.A. from Rutgers University.

Lamont Eltinge

Lamont Eltinge is Director of Research for the Eaton Corporation. He has worked in manufacturing for the General Motors Company; in aviation and motor/diesel fuel research and development for Standard Oil of Indiana; in Automotive Research for the Ethyl Corporation; and, as Vice President of Research and Technology for Cummins Engine. Dr. Eltinge is a member of the industrial advisory boards for the Colleges of Engineering at Bradley University, Oakland University, and Wayne State University. He is an active participant in the Society of Automotive Engineers and the Industrial Research Institute. Dr. Eltinge pursued his undergraduate studies at the University of Oklahoma and at Purdue University. He received his M.S. and Ph.D. in mechanical and aerospace engineering from the Illinois Institute of Technology.

Stig Ericsson

Stig Ericsson is Vice President of Engineering and Manufacturing for the Scania Division, Saab-Scania. Over the past 37 years, his career has included gas turbine development at STAL and chassis and transmission design engineering at Scania-Vabis. The former Head of Design for the Nuclear Power Division of the ASEA Group was appointed, first, Chief Engineer for the Traction Department, and subsequently Head of the Engineering Coordinating Department at ASEA. Mr. Ericsson also served as General Manager of the ESAB Welding Machine Division. He returned to Scania upon appointment as Director of the Chassis Department and later was appointed Director of the Engine and Transmission Departments. Mr. Ericsson is a member of the Royal Swedish Academy of Engineering Sciences. He earned a M.Sc. Eng. degree at the Royal Institute of Technology.

Yves Farge

Yves Farge is Vice President for Research and Development for Pechiney. Dr. Farge is the founder and the former head of the French Synchrotron Radiation Laboratory at Orsay. For the last eight years, he has been Chairman of the European Science Foundation's Synchrotron Radiation Committee; this committee has prepared the proposal for the European Synchrotron Radiation Facility now under construction in Grenoble. Dr. Farge is head of the Mission Scientifique et Technique at the Ministry of Research and Technology. He is a member of IRDAC (Industrial Research and Development Advisory Committee of the European Commission) and Chairman of the research and development panel of the Commissariat du Plan. Dr. Farge received his Ph.D. in solid state physics at the University at Orsay.

Serge Fournier

Serge Fournier is Vice President of the Networks Technology Division for Bell Northern Research (BNR) Ltd., Ottawa, Canada. Prior to this position, Mr. Fournier was Assistant Vice President of Network Services, responsible for BNR's Montreal laboratory. He joined Bell Northern Research as a member of the scientific staff working on CAD/CAM development, and subsequently held a number of management positions in the design of software architecture, in the development of switching systems and in exploratory research for integrated voice-data systems. Active in Canada's scientific community, Dr. Fournier is a member of the Science Technology Council of Quebec and the Advisory Board of the McGill School of Computer Science. He is President of the Advisory Board in ONRS Telecommunications. Dr. Fournier holds a B.Sc. in Mathematics from Laval University, Quebec City and a Ph.D. in computer and information sciences from Ohio State University, Columbus, Ohio.

Herbert I. Fusfeld

Herbert Fusfeld is Director of the Center for Science and Technology Policy at the School of Management, Rensselaer Polytechnic Institute. Before founding the Center in 1978, Dr. Fusfeld was Director of Research at Kennecott Cooper Corporation. He has also been Director of Research for the American Machine and Foundry Company and Head of the Physics and Mathematics Division, Frankford Arsenal. Dr. Fusfeld's professional and government activities have included serving on the US-USSR Joint Commission for Scientific and Technical Cooperation; the Advisory Group on Technology and Economic Growth at OECD; and, the Advisory Council of the National Science Foundation. He has also served on the Governing Board of the American Institute of Physics and the National Materials Advisory Board. He is a past president of the Industrial Research Institute (IRI). Dr. Fusfeld is the co-editor of the book series **Technology Policy and Economic Growth** (Pergamon) and author of **The Technical Enterprise** (Ballinger). He received a B.A. in physics from Brooklyn College and the M.A. and Ph.D. in physics from the University of Pennsylvania.

Maurits W. Geerlings

Maurits Geerlings is a member of the Board of Management, and Executive Vice President of Research and Technology for Akzo N.V. Within Akzo, Dr. Geerlings has served as Department Head in the engineering organization, Staff Officer for pharmaceutical technology for the Pharma division. He is currently a member of the Committee for the Development of European Science and Technology (CODEST) and has worked for the European Nuclear Energy Community (Euratom) in Belgium, France, and Germany. Dr. Geerlings earned a Ph.D. in chemical engineering from the Technical University in Delft.

H. Peter Gray

H. Peter Gray is Professor of International Economics and Management and Chairman of the Department of Managerial Policy and

Organization (MP&O) at Rensselaer Polytechnic Institute's School of Management. A prominent expert on international economics and business, Dr. Gray's research interests cover a wide range of topics including the impact of technology on international trade. The author of seven books and approximately 90 articles and papers, he serves as a consultant for the World Bank, the International Labour Organization, and the International Monetary Fund, as well as several private corporations. Dr. Gray received his B.A. and M.A. from Cambridge University and a Ph.D. in economics from the University of California at Berkeley.

Olle Hammarström

Olle Hammarström is Head of the Research Department for SIF (Swedish Union of Clerical and Technical Employees in Industry). He also serves as an executive member of TCO (Central Organization of Salaried Employees in Sweden). Prior to joining SIF, Mr. Hammarström was the Research Director at the Swedish Work Life Center. A published author in the fields of industrial relations, industrial democracy, and work organization, Mr. Hammarström holds an MBA from Gothenburg School of Economics and Business Administration.

Nico Hazewindus

Nico Hazewindus is the Director of Corporate Product Development Coordination for Philips International B.V. During his career at Philips, Dr. Hazewindus has been located at the Philips Research Laboratories, working on cyclotrons, ion optics and equipment for home-based learning; at Philips Research International Coordination department. He has been a Visiting Research Fellow at the Center for Science and Technology Policy in New York. Dr. Hazewindus has co-authored approximately 30 publications in scientific journals and one book, **The U.S. Microelectronics Industry**. Nico Hazewindus holds a M.Sc. and a Ph.D. in physics from the Technical University in Delft, the Netherlands.

H.J. Heller

H.J. Heller served as a member of the Executive Committee of CIBA-GEIGY, Basle, Switzerland until his recent retirement in 1988. In that function, he represented world-wide research and development, and was directly responsible for the Central Research Function, Central Product Safety, and the Indian Subcontinent. For many years, Dr. Heller served as a member of the Governing Board of the European Chemical Industry Ecology and Toxicology Centre (ECETOC), chairing it from 1983 to 1987. He is immediate past President of EIRMA and a member of the Swiss Science Council.

David A.H. Jacobs

David Jacobs is New Technologies Manager for the National Power, Division of CEGB (Central Electricity Generating Board). He began his career with the CEGB at the Central Electricity Research Laboratories at Leatherhead in the Mathematics Section, pursuing a wide range of applied mathematics, with contributions in computational modelling and numerical analysis associated with electrical generators. Mr. Jacobs has held a number of management posts in the Research Division of CEGB, most recently as Branch Manager of the Power Plant Performance Services responsible for much of the Laboratories research into engineering, control, physics, chemistry, mathematics, and computing. He studied mathematics at King's College, London, followed by applied mathematics research at Imperial College, London.

Ronald F. Konopacki

Ronald Konopacki is Director of Manufacturing Services for Fossil Systems Business at Combustion Engineering, Inc. He has held multiple positions within Combustion Engineering, including Director of Manufacturing Research and Development, and positions in Production, Quality Assurance, and Construction.

Mr. Konopacki is a member of the Board of Directors of P.T. Energy Systems Indonesia, an international joint venture company headquartered in Jakarta. He is a member of the American Society of Mechanical Engineers, the Society of Manufacturing Engineers, and a sustaining member of the American Welding Society. A Certified Manufacturing Engineer in the field of manufacturing systems, Mr. Konopacki is also a member of the State Task Force for Manufacturing Education in Connecticut.

Masahiro Kosaka

Masahiro Kosaka is President of Panasonic Technologies Inc., and Director of International R&D Center of Corporate Engineering Division of Matsushita Electric Industrial Co., Ltd. since 1988. His current assignments include management of the overseas research laboratories and the enforcement of internationalization of R&D activities. He has been engaged in the research and development of audio equipment. He received a B.E. degree in 1962 from Kanazawa University and joined Matsushita Electric Industrial Co., Ltd.

Bengt J. Kredell

Bengt Kredell is Senior Vice President, Corporate Research Staff of ABB ASEA Brown Boveri Ltd. He began his career with ASEA, AB, 30 years ago in the Central Laboratories. Within ASEA, Dr. Kredell has served as Chief Engineer and General Manager, Central Research and Development Department; Vice President and General Manager, Relay Division; Vice President and General Manager, HV Switchgear and HVDC Converter Division and Executive Vice President. Vice Chairman (1989-1991) of the Royal Swedish Academy of Engineering Sciences, he holds both an M.Sc. and Dr.Eng. in electrical engineering from the Royal Institute of Technology, Stockholm.

John Marcum

John Marcum is the Secretary General of the European Institute of Technology (EIT). He has served as Director of the Directorate for Science, Technology, and Industry of the OECD (Organization for Economic Cooperation and Development). Mr. Marcum has carried out a number of senior responsibilities within the U.S. government: he has headed the Office of Strategic Affairs at the Department of State; served as a member of U.S. delegations concerned with strategic arms limitation and nuclear nonproliferation; and held the position of Deputy Director for Program Analysis at the National Security Council. Before joining OECD in 1984, Mr. Marcum was Deputy Director of the Office of Science and Technology Policy (OSTP), Executive Officer of the President, and the U.S. representative to the Economic Summit Commission on Technology, Growth, and Employment.

John P. McTague

John McTague is Vice President for Research at Ford Motor Company. Prior to joining Ford, Dr. McTague was Acting Science Adviser to President Reagan. A physical chemist, he began his research career at the North American Rockwell Science Center, and was subsequently appointed Professor of Chemistry at the University of California, Los Angeles. He became Chairman of the National Synchrotron Light Source Department at Brookhaven National Laboratory prior to joining the Office of Science and Technology Policy (OSTP). He is a member of the Board of Directors of Ford Aerospace Corporation, the Board of Trustees for Argonne National Laboratory, and the Visiting Committee of the U.S. National Institute for Standards and Technology. Dr. McTague received his Ph.D. in physical chemistry from Brown University.

George F. Moore

George Moore is Director of Technology for BICC Cables Limited. Mr. Moore joined BICC ten years ago to take charge of the corporate research laboratories. He is a Director of Cranfield

Information Technology Institute and of Optical Fibres Limited. Mr. Moore is a member of both the National Electronics Council and the National Council for Superconductivity. He has been a Fellow of the Institute of Physics and the Institution of Electrical Engineers for many years.

Yasuo Nakajima

Dr. Nakajima is the General Manager of the Central Engineering Laboratories of Nissan Motor Company, Ltd., Yokosuka, Japan. His professional career with Nissan has included serving as Principal Research Engineer of Engine & Powertrain Research Laboratory; General Manager of the Research Planning Department, Central Engineering Laboratories; and General Manager of the Technological Strategy Planning Office. Dr. Nakajima is a member of the Executive Board of the Japanese Society of Mechanical Engineers, of the Japanese Society for Science Policy and Research Management, and of the Japanese Society of Automotive Engineers. He graduated from the Faculty of Science and was awarded a Doctorate of Engineering from Tokyo Institute of Technology.

Curt Nicolin

Curt Nicolin is Chairman of the Board of Directors of ASEA, AB, and Co-Chairman of the Board of Directors of ABB ASEA Brown Boveri Ltd. He is also Swedish Chairman of the Scandinavian Airlines System, Chairman of the Board of Swedish Match, ESAB, Flakt, and Swedish Intercontinental Airlines. Dr. Nicolin is a member of the boards of the Knut and Alice Wallenberg Foundation; Skandinaviska Enskilda Banken; Incentive; Investor; Providentia Stora; and, other companies, institutions and organizations, including the Federation of Swedish Industries and the Royal Swedish Academy of Science. He is Chairman of the ICC Swedish National Committee and a member of the American Society of Mechanical Engineers. The author of **Private Industry in a Public World**, Dr. Nicolin holds a Techn. Dr. h.c. from the Royal Institute of Technology in Stockholm.

Yoshihiko Nishizawa

Yoshihiko Nishizawa is Senior Managing Director of Sumitomo Chemical Co., Ltd., Tokyo, Japan, directing the company's research and development activities. Dr. Nishizawa has served as General Manager of the Takarazuka Research Center where research is conducted on agricultural chemicals, biotechnology and toxicology. He has also been an Assistant Professor in the Department of Agriculture at the University of California at Berkeley. In 1965, Dr. Nishizawa received a Commendation from the Japanese Minister of State of Science and Technology, and in 1968 the Japanese government awarded him the Medal with Purple Ribbon (given to those who have made an outstanding contribution to the advancement of art and science).

Ivar Nordberg

Ivar Nordberg is Sweden's Cabinet Minister and Minister for Industry. Mr. Nordberg began his political career in 1958 when he became District Representative of the Norrbotten branch of the Social Democratic Party. Since then, he has served with the Union of Building Trade Workers as Youth Secretary, Study Organizer, and Organizing Secretary; as a member of Parliament for Stockholm county; and, first as Vice-Chairman, then as Chairman, of the parliamentary group of the Social Democratic party.

Orvar Nyquist

Orvar Nyquist is President of Jernkontoret (the Swedish Steel Producers' Association). Prior to joining Jernkontoret, Dr. Nyquist was Executive Vice President of SSAB (Svenskt Stål AB). His career in the steel and iron industry has included work as a research metallurgist with Jernkontoret and with Surahammars Bruks AB; Manager of iron and steel production for Fagersta Bruks AB; Divisional Manager and Vice President of Fagersta AB; President of Seco Tools AB; Manager Domnarfvets Jernverk and Executive Vice President of Stora Kopparberg AB. Dr. Nyquist received a Master of Engineering and Lic. Eng. from the Royal Institute of Technology in Stockholm. He also studied at Massachusetts Institute of Technology and received an Honorary Dr. Eng. in 1987.

Sven Olving

Sven Olving is President of Chalmers University of Technology, Gothenburg, Sweden and Chairman of the Royal Swedish Academy of Engineering Sciences (IVA). A professor of Applied Physical Electronics, Dr. Olving serves as a member of the board of the Swedish Council for Technical Development. He is also on the board of several major industrial corporations in Sweden, including Electrolux, Ericsson, Trelleborg, and Celsius.

A.E. Pannenberg

A.E. Pannenberg has spent his working career at N.V. Philips Gloeilampenfabrieken, Eindhoven, the Netherlands. Dr. Pannenberg began his career as a research scientist in the Corporate Research Laboratory; from 1973 until his retirement he was responsible for Research and Development of Philips worldwide. He was the founding Director of the Philips Research Laboratory in Aachen, Germany; Director of Research for the Philips Research Laboratory, Eindhoven; and, a member of the Board of Management from 1969 (becoming Vice-Chairman in 1977) until he retired from operating duties in 1984. Dr. Pannenberg Chairs the Board of the Netherlands Study Center for Technology Trends (STT); the Board of Directors of the Nederlandse Philips Bedrijven BV; and, the Advisory Council of the Technology Management Unit of the International Management Institute (IMI). He is currently part-time Professor of Research and Development Management at the Technical University in Delft where he received his Ph.D. in technical physics. He currently chairs the Mid-Term Review Board for ESPRIT.

Fabio Pistella

Fabio Pistella is Director General of ENEA (Italian Commission for Nuclear and Alternative Energy Sources). Dr. Pistella has devoted his entire working career to ENEA, working in various divisions in the areas of applied nuclear physics, information technologies, and energy research and development. His interests also include the linkage between energy and industrial research. Dr. Pistella serves as the Italian government's High Level Representative in the Eureka initiative and is the current President of the Eureka Council. He is the author of over 100 scientific papers and is an Associate Professor of Nuclear Engineering at the University of Rome.

Edwin P. Przybylowicz

Edwin Przybylowicz is Senior Vice President and Director of Research for the Eastman Kodak Company. Dr. Przybylowicz began his career at Kodak as a research chemist in the Chemistry Division of the Research Laboratories. Since then he has held numerous positions, including: Manager, Copy Products, Photographic Division; and, Assistant Director, Kodak Research Laboratories. Dr. Przybylowicz is a member of the Industrial Research Institute and the Directors of Industrial Research, the American Chemical Society and the American Association for the Advancement of Science. He holds a BS in chemistry from the University of Michigan and a Ph.D. in analytical chemistry from Massachusetts Institute of Technology.

Richard K. Quisenberry

Richard Quisenberry is the Director of the Research Division of the Central Research & Development Department of the DuPont Company. This organization is responsible for DuPont's long-range basic research in chemistry, physics, and biology. He has held a variety of professional and management positions in research, manufacturing and marketing at DuPont. A member of a number of scientific, professional, and social organizations, Dr. Quisenberry also serves on advisory groups at several universities.

Carlo Eugenio Rossi

Carlo Rossi is President, Chairman, and Managing Director of the Fiat Research Center S.p.A. He is also a member of the Board of Directors of FIAT AVIAZIONE S.p.A.; of FIAT AUTO S.p.A.; and of IVECO FIAT S.p.A. Outside of the Fiat Group, Dr. Rossi is Chairman of ATA (Associazione Technica dell'Automobile) and Chairman of the Study Committee on Transportation (Confindustria). He is a member of the Italian Science and Technology Committee, CNR's (Comitato Nazionale Ricerche) Engineering and Architecture Science Committee, and the Italian Committee of Lloyd's Register of Shipping. Dr. Rossi attended specialized courses at Brown Boveri; AEG; and, Argonne National Laboratory, after receiving his electro-technical industrial engineering degree from the Polytechnic of Turin.

Kerstin M. Sirvell

Kerstin Sirvell is the President of KabiGen AB, a genetic engineering research and development company, in Stockholm. Dr. Sirvell was formerly KabiGen's Executive Vice President. She is a member of the board of the Swedish National Board for Technical Development (STU); Defense Research Establishment; and of the University of Stockholm. Swedish Dr. Sirvell holds the degrees of M.Sc. in biochemistry and M.D.h.c. (Umeå).

Erich Spitz

Erich Spitz is Senior Vice President for Research and Development of the Thomson Group. Prior to his current position, Dr. Spitz was the Director of the Thomson-CSF Central Research Laboratory. He has worked in a variety of research and development positions in the fields of antennas, microwaves, and optoelectronics. Dr. Spitz is Director of Seditas, Sodeteg-Tai, Thomson-Ventures, Valeo and Chairman of Thomson Recherche. He is a corresponding member of the French Academy of Science and a former member of both the National Committee for Scientific Research in France and the Research and Technology Advisory Board to the French Government. Dr. Spitz is a Fellow of the Institute of Electrical and Electronics Engineers and a former President of the French Electronic Chapter of the Societ des Electriciens et Electroniciens.

Nowell Stebbing

Nowell Stebbing is General Manager, Research I for ICI Pharmaceuticals, with overall responsibilities for the company's research in cancer, arthritis, and infection. After seven years in California, initially with Genentech, and then as Senior Vice President for Research and Development with Amgen, Dr. Stebbing returned to the United Kingdom. Since joining ICI, he has developed a new initiative in biotechnology that now serves the basic drug-hunting activities in ICI Pharmaceuticals as well as developing therapeutic protein agents.

Larry W. Sumney

Larry Sumney is President of the Semiconductor Research Corporation. He has held the positions of Managing Director of SEMATECH, Director of the Very High Speed Integrated Circuits (VHSIC) Program for the U.S. Department of Defense, and Research Director of the Naval Electronic Systems Command. Mr. Sumney is Chairman of the Board of Directors of the SRC Competitiveness Foundation. He has served as Chairman of the National Research Council Steering Group on the Semiconductor Industry and Department of Energy National Laboratories as well as a member of the Defense Science Board Task Force on Semiconductor Dependency. Mr. Sumney serves on advisory boards of the University of California at Berkeley, North Carolina State University, Clemson University, the University of Illinois, and the National Security Agency. He is a Fellow of the Institute of Electric and Electronics Engineers.

Hans Ursing

Hans Ursing is Managing Director of the Swedish Employment Security Council (Trygghetsradet). He has served in the capacity of Director at the Swedish Employers' Confederation, Managing Director of Stockholm's Royal Opera House, and as Expert at the Swedish Employers' Confederation. Mr. Ursing is a member of several boards: the Composition Center, Jobs and Society, and the Fingerprint Security System. He received his Bc. of Law.

Chihiro Watanabe

Professor Watanabe has been with Japan's Ministry of International Trade and Industry (MITI) since 1968. He had served as Director of the R&D Program for Future Industries and as Director of Technology Research and Information. His responsibilities have emphasized policy planning, energy, and industrial technology. He has been second secretary at the Japanese Embassy in Indonesia, and served in Australia as Managing Director for the New Energy Development Organization (NEDO). Professor Watanabe has recently (October, 1988) joined Saitama University where he is Director of the International Program, Graduate School of Policy Science. He holds a degree in engineering from the University of Tokyo.

Note: We are greatly indebted to our good friend and colleague, M. Pierre Aigrain, former Secretary of State for Research in France, who graciously agreed to speak in the place of M. Hubert Curien.

Pierre R. Aigrain

Pierre Aigrain is Scientific Advisor to the President of the Thomson Group, Paris, France. He has also served at Thomson as General Technical Manager and as Consultant, C.S.F. Over the years, Dr. Aigrain's numerous posts have included: President of the French Physical Society; Secretary of State for Research; General Delegate for Science and Technology of the French Government; Professor at the University of Paris, and Henry Luce Professor, MIT. A member of E.A.B. (Esprit Advisory Board), the Esprit Steering Committee, CODEST (Committee for the Development of European Science and Technology), the Academy of Science, Paris and its Committee for Appliances, and numerous other organizations, he has authored over 100 scientific papers and 100 patents. Dr. Aigrain holds both the M.S. and D.Sc. in electrical engineering from Carnegie-Mellon University and a Doctor of Science in physics from the University of Paris.

Note: Professor Escaig will be presenting a paper in place of Yves Farge (in the workshop in Materials Industry).

Bertrand Escaig

Bertrand Escaig is Professor of Materials Sciences at the University of Lille. After earning his Ph.D. in Solid State Physics at Paris-Orsay, he founded a Materials Science Lab at Lille, and headed it for ten years. As a specialist in metals and polymers, Dr. Escaig was a visiting professor at Case Western Reserve University in Cleveland during 1981. Returning to France, he became active as a member of various national committees on university and industrial research, and headed the National Program on New Materials at the Ministry of Research and Technology in Paris from 1985 to 1987. Dr. Escaig has also served as a scientific advisor to the French Office National de Recherche Aeronautique. In addition to his full-time faculty position at Lille, Dr. Escaig is also a part-time faculty member at Pechiney, where his research area involves problems in packaging.

Note: Dr. White, Associate Director for Engineering, National Science Foundation, will chair Session II, June 20th, in place of Erich Bloch.

John White

Dr. John White is Assistant Director for Engineering, National Science Foundation, and is responsible for the conduct of the Foundation's programs which support research in all fields of engineering. Since 1975, Dr. White has been a member of the Georgia Institute of Technology faculty. Prior to joining Georgia Tech, he was a member of the Virginia Institute of Technology faculty. He received his doctorate from Ohio State University. Dr. White is a member of the National Academy of Engineering and is past chairman of the American Association of Engineering Societies and past president of the Institute of Industrial Engineers. He has coauthored five textbooks and is a consultant to numerous firms, including AT&T, Briggs and Stratton, Coca Cola, and others.

Note: Dr. Kaizaburo Saito will be a discussant in the Materials Workshop on Wednesday, June 21st.

Kaizaburo Saito

Kaizaburo Saito is the General Manager of the Research Laboratory for Kobe Steel Europe, Ltd., United Kingdom, a subsidiary of Kobe Steel, Ltd. Dr. Saito began his career with Kobe Steel, Ltd., Japan as a senior researcher at the Chemical Industry Research Center, Technical Development Group. He subsequently has held managerial positions at the Chemical Industry Research Center and the Research and Development Planning Department, both within the Technical Development Group. Dr. Saito was a Postdoctoral Research Associate at the University of North Dakota's Chemistry Department and a Postdoctoral Research Fellow at the University of Delaware's Center for Catalytic Science. His current research activities include the catalytic reaction of organic materials, the characterization of metal supported oxide catalyst, and research and development on coal liquefaction technology. Dr. Saito received his Ph.D. in chemistry from Hekkaido University.

BACKGROUND PAPERS



Overview of Industrial Research and Development

Patterns of U.S. Industrial R&D

Joseph G. Morone, Assistant Professor and Senior Policy Research Analyst, Center for Science and Technology Policy, School of Management, Rensselaer Polytechnic Institute (U.S.)

The Changing Scene for Industrial R&D in Europe

Jon Sigurdson, Director, Research Policy Institute, University of Lund (Sweden)

Technological Diversification of Japanese Industry

Fumio Kodama, Director, National Institute of Science and Technology Policy, Science and Technology Agency (Japan)

New Mechanisms of Industrial Research and Development

Emerging Private Sector Alliances: Technical Interactions Between Japanese and European Firms

Lois S. Peters, Assistant Professor and Senior Research Scientist, Center for Science and Technology Policy, School of Management, Rensselaer Polytechnic Institute (U.S.)

Technical Alliances in the Semiconductor Industry: Effects on Corporate Strategy and R&D

Carmela S. Haklisch, Senior Policy Research Analyst, Center for Science and Technology Policy, School of Management, Rensselaer Polytechnic Institute (U.S.)

Global Competition and Multi-site R&D Facilities

Breffni Tomlin, Director — Europe, Technology Management Group, Pugh/Roberts Associates (U.S.)

Factors Affecting Industrial Research and Development

Economic Interdependence Among Developed Market Economies and Multinational Enterprises

Nicholas Vonortas, Economics Research Analyst, Center for Science and Technology Policy, Rensselaer Polytechnic Institute (U.S.)

The Changing Global Environment — A Factor of Increasing Importance for Future Industrial Research and Development

Sven-Olof Ryding, Federation of Swedish Industry, and G. Hansson, IVA (Sweden)

Human Aspects of Jobs and Workplaces in the Year 2000

Bengt Kjellen, Consultant, Employers Consultant, Ltd. (Sweden)

About the Center

The Center for Science and Technology Policy is a research and educational organization within the School of Management at Rensselaer Polytechnic Institute. Through its research programs and conferences, it provides mechanisms to explore critical current issues with representatives of government, industry and academia. An important goal is to develop an understanding of the factors that affect the generation and use of technical change and apply that understanding to guide effective public policies and corporate strategies. Recent and current research projects include factors in national R&D productivity, growth of technical alliances, the impact of export controls on industrial research, and the changing university industry research system.

About Rensselaer Polytechnic Institute

Rensselaer Polytechnic Institute is the oldest technical institution in the U.S., founded in 1824. It is known particularly for the quality of its engineering graduates; the strong industry support of major research centers in electronics, materials and manufacturing processes; and the conduct of a research park and incubator facility to encourage start-up businesses. The School of Management offers a concentration in the management of technology within the MBA program.

About Trygghetsradet SAF-PTK

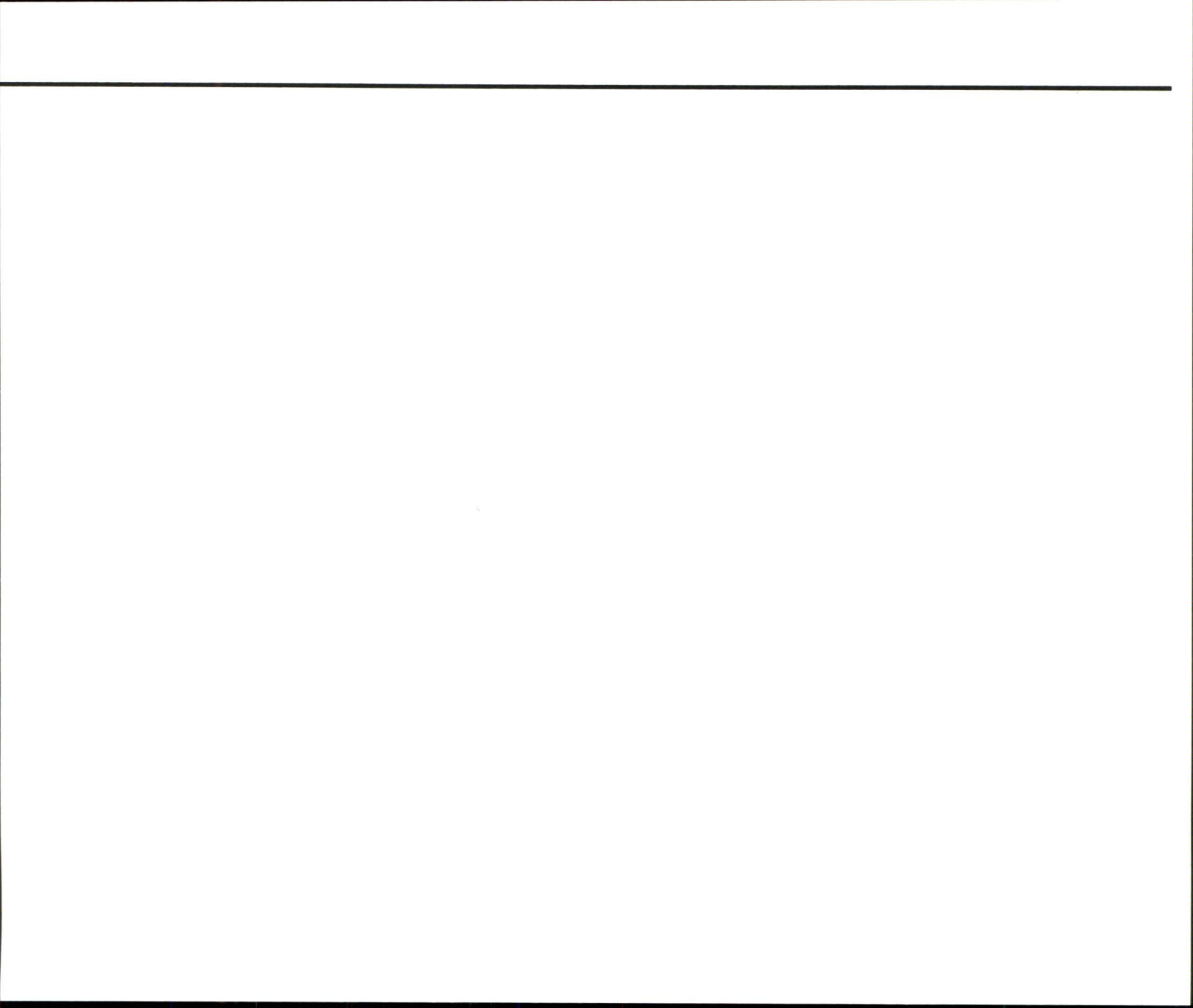
Trygghetsradet, or the Swedish Employment Security Council, is composed of the Swedish Employers' Confederation, SAF, and the Federation of Salaried Employees in Industry and Services, PTK. These two groups, from private industry and commerce, have agreed on a special contract on security in employment as a means of assistance to white collar workers experiencing rapid structural changes in Swedish industry and commerce that affect jobs, skills, location of work, etc.

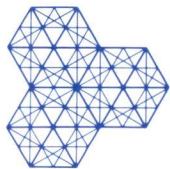
The contract between SAF and PTK covers 500,000 white collar workers. A council of about 70 people has been established to assist individuals in need of help. Activities are financed through an annual fee paid by every employer. The fee amounts to 0.5 percent on all salaries paid to white collar workers in private industry and commerce. The total income per year is \$50 million and the fund by now has about \$120 million in assets. The work carried out by the council — thus jointly set up by employers and employees — lies primarily in the following fields:

Efforts to develop Swedish industry and commerce, including counseling and financial aid to start up new firms and creation of an inventors' academy.

Retraining projects within firms.

Insurance provisions for unemployed workers.





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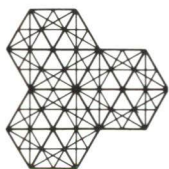
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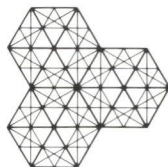


CENTER FOR SCIENCE AND TECHNOLOGY POLICY
School of Management, Rensselaer Polytechnic Institute



Facing page: Panel session at the Center's Conference in Lucca, Italy, on "Technical Cooperation and International Competitiveness" (April 1986). Pictured from left are Volker Knoerich, Head of Division, Min. Rat., German Ministry for Research and Technology; Maxwell Gordon, Senior Vice President (retired), Bristol Myers Company; Henry Durand, Assistant Secretary General for Scientific and Environmental Affairs, NATO; Karl Heinz Beckurts, Executive Vice President and Board Member, Siemens AG (1930-1986); John Marcum, Director of Science, Technology and Industry, OECD (now Secretary General, European Institute of Technology); and Palle F. Smidt, Senior Vice President, Programs and Plans, MCC.

The Center for Science and Technology Policy was established in 1978 to contribute to the discussion, analysis, and formulation of major science and technology policy issues. Its program includes research, education and conferences, both national and international. Through these activities, the Center has become a leading source of expertise on the technical system, contributing to government policy and corporate strategy, here and abroad. This report profiles our progress in the first ten years and presents our future plans.



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DIRECTOR'S MESSAGE

The reasons for which we established the Center for Science and Technology Policy in 1978 are today both more critical and more readily accepted. This Annual Report marks the 10th anniversary of the Center's founding, an opportunity to review our progress as we plan for our future.

This is a critical transition period with regard to science and technology. For 100 years, the process of technical change has been accelerated and broadened by the growth of industrial research. This has become the principal driving force for the process. Any major shift in the amount, the functions, or the dynamism of industrial research will impact the entire technical system. The conditions in which industrial research has grown and strengthened are under pressures which are almost certain to change some of the characteristics of industrial research. These pressures include:

- Restructuring of industry; particularly in the U.S.
- Reduction of trade barriers within the European community in 1992
- Continuing growth of strategic technical alliances both domestically and across national boundaries
- Increasing emphasis on manufacturing processes as the basis for competitive advantage in international trade
- Steady pressure of environmental regulations with particular impact on the chemical, pharmaceutical and energy sectors

All of these can affect the amount and direction of industrial research. Since this is a key force in the overall technical system, those changes will be reflected shortly in university research and in government programs.

Other parts of the technical system are under pressure with equally uncertain consequences. Mission-oriented research centers at universities challenge the academic world to accept research

management as an expanded function while maintaining the values and structure of individual research initiatives. The magnitude of defense R&D (an estimated \$42 billion in 1988) draws from and supports university and industry R&D. Its conduct alone influences the productivity of all R&D, and its potential for planned impact is considerable.

The need for the Center's efforts seem clear in the period ahead. But what role can the Center play that can be a positive influence for the health and growth of the technical system? What is our focus in this poorly defined area of "science and technology policy"?

Our principal concern is to understand those factors involved in the generation of technical change and its conversion to economic use. We therefore consider any pressure that affects some part of the structure or the operations of the international technical system — the "technical enterprise" — in terms of the resulting effectiveness of industrial research. This in turn can guide an evaluation of changes in academic research and government policies through their interactions with industry.

The technical system is complex, there are networks linking all generators and users of research, and it is truly internationalized. Our research, international conferences, and widespread interactions with government and industry give the Center a unique opportunity. We can conduct objective academic research on important questions that we identify at an early stage, then disseminate the results to other scholarly groups as a base for further research, and to government and industry to guide future actions.

This capacity has proven its value in our first ten years. It should be of even greater value in this current transition period as we enter the 1990s and, just beyond, the 21st century. We take pride in past contributions, and look forward to continuing to have an active part in the growth of the technical enterprise.



Dr. Herbert I. Fusfeld
Director
Center for Science and
Technology Policy

A handwritten signature in dark ink that reads "Herbert I. Fusfeld". The signature is written in a cursive, flowing style.

THE CENTER'S PURPOSE

It is well accepted that a process (such as the engineering design of a chemical plant or the development of an advanced memory chip) can proceed more quickly, cheaply, and safely if it is guided by an understanding of the basic chemistry and physics that control those processes. In the same way, the process of technical change must also be understood if our government and corporate policymakers are to conduct it wisely and effectively.

Thus, the primary objective of the Center for Science and Technology Policy is to conduct basic research into the process of technical change. The word "policy" describes only part of the focus; also involved are strategy, conditions, and environment — the interactions within and among the activities and organizations that produce technical change.

Our ability to generate and use technological change is at the very core of social and economic growth. Some of the factors influencing these processes today include:

- Objectives and mechanisms of government funding for R&D;
- Interactions of industrial research with other corporate functions: principally marketing, manufacturing, and finance;
- Organizational structure and funding of academic research;
- Government policies on taxes, regulations, intellectual property, and international trade;
- Effective management of R&D organizations;
- Interactions between defense research and civilian research;
- Technical advances in the dissemination and absorption of new knowledge; and
- Organizational relations within and among sectors, such as increased university-industry interactions and cooperative industrial research mechanisms.

No individual, group or center can address all of the questions that arise from the effects of these forces on the overall technical system. What a center can do is conduct sufficiently broad studies so that the interactions of several dominant influences can be analyzed simultaneously, and develop a framework by which relevant work in several fields can be linked within a single, coherent pattern.

The programs of the Center for Science and Technology Policy help to build a framework for developing such a pattern. The actions to strengthen the overall technical system by government and industry must be accompanied by a parallel effort in science and technology policy to guide present initiatives and serve as a basis for future action. The Center is committed to providing that effort.



Lunch discussion at Center in 1981. From left are Joshua Lederberg, President, Rockefeller University, Nobel Laureate in Biomedicine; Pierre Aigrain, Minister of Research, France; Herbert I. Fusfeld, Director of the Center; and Ivan Bennett, Vice President for Medical Affairs, NYU.

RESEARCH DIRECTIONS

Emphasis on core subjects — coupled with a framework for linking them to other topics and disciplines — give an organization's research efforts impact and coherence. This is seen in the mix of the Center's identified research areas highlighted below.

The University-Industry Research System

The process of technical change rests heavily on the nature of the research process within the university and industry sectors. The influence of these two sectors on one another must be considered in the initial research plans for practically every issue concerning technical change. This theme underlies a substantial portion of the Center's planned activity. Much of this builds upon the early efforts of Dr. Lois Peters, who conducted a broad study of university-industry research interactions constituting the major portion of the 14th Report to the President of the National Science Board (NSB82-2). This is today an important reference work for the entire field.

A Center study completed in early 1988 explored the values and judgments of university researchers. Directed jointly by Dr. Peters and Dr. Henry Etzkowitz, the study focused on the motivations, external influences, and the effects on individual researchers of large, mission-oriented research centers at the same university.

An important program begun during the past year will study the growth of a scientific discipline, using computer sciences as a case study. The diffusion of advances, mobility of graduates and researchers, and interactions of technical advances will be examined. A special focus of the study will be on the conditions under which a new discipline is formed. Dr. Peters and Dr. Etzkowitz are the co-directors of this program.

Patterns and Functions of Technical Alliances

Since the early 1980s, a new pattern of corporate cooperation in research and technology has begun to emerge.

Cooperative research through trade associations was well-established from the early 1900s. These organizations shared costs and performed functions in areas that were not directly critical to the competitive positions of the individual companies involved.

Around 1980, however, associations began to emerge that fit a different pattern. Corporations formed consortia, organizations, and private groups with budgets 10 to 100 times larger than older trade associations, emphasizing programs that had the potential to affect the competitive edge of the individual participants. In addition, the corporations could not easily have conducted this work independently.

The Center has initiated several studies of novel patterns emerging in this area of cooperative research. Under the direction of Mrs. Carmela S. Haklisch, a major program was initiated to study this worldwide growth of activity. The first report, "Trends in Collective Industrial Research," issued in 1984, is a principal reference in this field. It was summarized in an article for the Harvard Business Review as "Cooperative R&D for Competitors" the following year.

Much of this corporate cooperation was seen in the area of microelectronics. An intensive study by Mrs. Haklisch correlated cooperative mechanisms with technical functions and mapped networks of technical flow, nationally and internationally, "Technical Alliances in the Semiconductor Industry," (1986). Using this as a context, a study to examine selected alliances and their impact on internal R&D is now underway.



Academic participants at 1986 Conference on "Technical Cooperation and International Competitiveness" in Lucca, Italy. From left in front row are Richard R. Nelson, Henry Luce Professor of International Political Economy, Columbia University; Nathan Rosenberg, Chairman, Department of Economics, Stanford University; and Helmar Krupp, Director, Institute for Systems Analysis and Innovative Research, Karlsruhe.

The analytical base established by Mrs. Haklisch was broadened further by three studies of great importance to understanding technology flow and the formulation of constructive national policy. For example, in 1987, Dr. Lois Peters examined in detail the technical relations that evolved between companies in the U.S. and Japan, with particular emphasis on microelectronics, pharmaceuticals, steel, and chemicals. The report, "Technical Network Between U.S. and Japanese Industry," underlies the growing technical interdependencies that accompany competition for world markets.

Another subject, the impact of export controls on U.S. industrial research, has been studied by the Center, drawing upon the analytical base of international technology and trade flows. These reports, "Export Controls: U.S. Machine Tool Industry" by Carmela Haklisch (1987), and "Export Controls: U.S. Semiconductor Industry" (1988), will be followed by similar reports on agricultural chemicals and pharmaceuticals.

The work done to date in this research area has established the Center as a reference and focus of inquiries from across the U.S. as well as from Europe and Japan. Analyses have since been commissioned by the Organization for Economic Cooperation and Development (OECD) and the European Communities to guide science policy planning in Europe.

Technical Change and the Service/Manufacturing Ratio

The past decade has seen major employment declines in manufacturing industries such as automobiles and metals. The term "service economy" implies a diminished importance of manufacturing. Since industrial research is associated most closely with manufacturing, and its funding depends on the long-term health of manufacturing, it is essential to understand the interactions that exist among services, manufacturing, and the process of technical change.

In the past year, an exploratory program was initiated under the leadership of Dr. Daniel Berg, former President of Rensselaer. The program will focus on the impact of technology on services, the interdependence of services and manufacturing, and the role of technology as a bridge between services and manufacturing.

Technology-Based Regional Economic Development

The cities, states, and regions of the U.S. have been at the forefront in stimulating the process of converting technology to economic use. This has occurred through support of existing private enterprise and the formation of new businesses. Such initiatives play an important role in the process of technical change. They often center on university-industry relations, explore combinations of public and private venture capital, test specific steps in the process, and relate technical change to the political process.

The early work of the Center in university-industry interactions led to more specific involvement in regional economic development.

A study of the feasibility of stimulating the commercialization of biotechnology in the metropolitan New York region was initiated in 1981 by the Port Authority of New York and New Jersey. Additionally, this work was supported by state and city agencies and industry. Directed by Dr. Lois Peters, the study required the analysis of the different stages in the economic conversion of a major new technical advance, the educational and research support necessary for each, and the role of financial mechanisms.

A 1988 monograph focuses on an analytical overview of regional development throughout the U.S. and selected countries. Issues addressed include what has been tried, what conditions have proven effective, and what economic impact has resulted.

RESEARCH DIRECTIONS (cont'd)

Changing Technical Strategies of the Microelectronics Industry

The microelectronics industry is characterized by rapid technical change. It is an industry critical to both economic growth and national security, and it is the highest priority concern of national science and technology policy in almost every industrialized country. Moreover, it has been the most active industry in developing technical alliances. Thus, this industry — and the insight it provided into the area of technical change — made it a growing emphasis for the Center's research activity since the early 1980s.

An exploratory review conducted in 1981 by Dr. Nico Hazewindus, then a Visiting Research Fellow from the N.V. Philips Co. of the Netherlands, examined the relationships among changing technologies, markets, degree of vertical integration, and the interplay of defense and civilian requirements. This review was published as the book, *The U.S. Microelectronics Industry* (Pergamon Press, 1982).

Shortly after, the Center initiated a major program on the microelectronics industry which focused on the importance of pressures for internationalization, and the impact of technology management on business strategies, government policies, and technical change. Among the reports from this study were: "Technical Alliances in the Semiconductor Industry," by Carmela Haklisch (1986), "Business Strategies and Competition in the Semiconductor Industry: A Comparative Study Across U.S., Japanese, and European Firms," by William Egelhoff (1987), and "Microelectronics: An Industry in Transition," by Richard N. Langlois (1987).

The Center is extending its studies of this issue in two directions. One is a more detailed examination of how technical alliances are integrated into corporate strategies, how critical they are to future growth, and how they impact corporate internal R&D. This program is in progress.

Another research direction is to consider the role of technical alliances in the semiconductor industry with respect to its ultimate significance for the major user industries, specifically telecommunications and computers.

Interdependence of Defense and Civilian R&D

The two-way nature of interactions between civilian and defense research programs have many important characteristics.

Though the ultimate objectives of defense and civilian R&D are different, they both draw from the same reservoir of science and technology. Equally important, the output from both types of activity fill the same reservoir. Since specific projects, technical emphasis, and personnel are usually different for these two broad interests, a number of issues arise with regard to the process of technical change. Among these are the diffusion of knowledge, transfer of technology, selection of R&D directions, mobility of personnel, and many others.

An early major program of the Center in 1980-81 examined the effectiveness of government in supporting civilian R&D. One part of this program, directed by Richard R. Nelson, analyzed the source of technical change in a range of industries. The work appeared as the book, *Government and Technical Progress* (Pergamon Press, 1982).

Extensions of Center research will derive from the issues raised by substantial defense research. The Center will explore the effects this will have on the direction of research both at universities and in industry, the activities from which all sectors can benefit, the networks that emerge for knowledge transfer, and the impact on training of technical graduates.



Erich Bloch, Vice President, Technical Personnel Development, IBM, (now Director, National Science Foundation), advising on the Center's research on microelectronics industry in 1981.

Changing Patterns of Industrial Research

The growth and momentum of industrial research in the past century, particularly since World War II, has made it perhaps the principal driving force behind the process of technical change today. It is a vital factor in economic growth, it stimulates and supports university research, and it is an important basis for national security.

The many research issues in this area arise from pressures on industrial research related to economics and globalization. These include restructuring of corporations, fall of European trade barriers in 1992, international strategic alliances, and the intensity of support by governments of domestic industry. All of these affect the patterns which shape the future of industrial research.

Exploratory analysis in the area of technical activity by Dr. Herbert I. Fushfeld appeared in the article "Corporate Restructuring — What Impact on U.S. Industrial Research" (Research Management, July/August 1987). A conceptual base for this area is being pursued by Dr. Joseph G. Morone.

Technical Change and Manufacturing Productivity

There is much concern today with U.S. manufacturing capabilities. Non-technical factors, such as currency exchange rates, non-tariff barriers, and labor rates may well be the most important in determining competitive status. Nevertheless, the ability to generate and adapt new manufacturing process technologies can be critical to new product developments in certain industries, and can therefore provide options for corporate strategies.

A critical factor in conducting research in this area is the ability to measure the effect of a change in input. A senior member of the Center, Dr. J.R. Norsworthy, has carried out pioneering work in the use of time series plant output data. Dr. Norsworthy has demonstrated the value of using this database as a measure of change introduced at the plant level. This work has led to the establishment of a Laboratory for Productivity and Technology within the Center, directed by Dr. Norsworthy.

The Center plans to study the effect of changing production technologies in semiconductors on the productivity of that industry in the U.S. This program would be followed by studies of experiences in Europe, where there is a comparable database.

Quality and Mobility of Scientists and Engineers

The availability of trained scientists and engineers to effect technical change is a common component of many of the Center's research efforts. An issue of particular concern involves the various patterns of mobility these professionals have in industry, particularly in R&D. The flexibility to move with new technical advances, mobility within the industrial structure, and career paths in different fields continue to be the bases for research.

One study in this field will be on the characteristics of scientific and engineering personnel in industry. It will analyze such factors as career trajectories, adaptability to different organizational structures and corporate functions, the role of educational programs within corporations, and the differences among industries. These factors will be related to the innovation process and to productivity.

A second planned study will explore the nature of the barriers and incentives that influence women and minorities to pursue careers in science and engineering. This is an important issue in economic and social policy and affects a critical resource for producing technical change. The Center will focus on career paths in industry and will examine the representation of minorities in particular areas.



Curt Nicolin, Chairman of the Board, ASEA, speaking at 1983 Conference on "University-Industry Research Interactions" in Stockholm.



THE CENTER'S UNIVERSITY BASE



The Center owes its international status and recognition to the academic institutions with which it has been associated.

In spring 1978, Herbert I. Fushfeld, then Director of Research for Kennecott Copper Corporation, proposed to John Sawhill, then President of New York University, the concept for a research center that could provide an objective foundation for understanding the process of technical change.

Dr. Fushfeld had long been involved with government-industry and university-industry interactions, serving on numerous national and international commissions and professional committees. He believed that the discussions of current issues lacked adequate theory concerning the cause-and-effect relationships between government policies and corporate strategies with respect to technology. Further, the theories and models that did exist lacked the reality of actual experience.

These considerations provided the impetus for establishing the Center for Science and Technology Policy at NYU in September 1978. Originally part of the Graduate School of Public Administration, the Center was moved in 1981 to the Graduate School of Business Administration.

A combination of funds from NYU and industry allowed the Center to pursue exploratory programs to accumulate a database on aspects of the technical system, establish the feasibility of gaining access to senior personnel in government and industry, and determine the main areas of its inquiry.

During the NYU period, staff consisted of a core group of three to five researchers and five graduate students. Carmela S. Haklisch joined in October 1978 and Lois S. Peters in July 1979.

Research associates who participated in Center programs were drawn from eminent colleagues at NYU and other institutions. Richard R. Nelson, formerly of Yale University and currently Henry Luce Professor of International Political Economy at Columbia University, has pursued a number of projects at the Center. Another colleague has been Lawrence White of NYU, currently serving as a board member of the Federal Home Loan Bank Board in Washington. Both are well-known economists concerned with the process of technical change.

Initial research conducted at the Center created the framework for a coherent research agenda. Exploratory reports and white papers became the bases for proposals that led to more substantial grants for major research programs. As the Center evolved, it became necessary to consider ways in which it could achieve long-term stability and continuity.

Recognizing this need, NYU and the Center mutually agreed that a new affiliation would best serve the growth of the Center. The Center then entered into specific negotiations with Rensselaer Polytechnic Institute and became affiliated in September 1986.

The oldest technical institution in the country (1824), Rensselaer has an intense and long-term concern with the successful integration of technical change in society. From its base in Rensselaer's School of Management, the Center's efforts complement Rensselaer's primary activities of educating graduates who will work with technical change and of generating new technology in its research. Due to the Rensselaer curriculum, there are faculty members whose research interests relate directly to the Center's emphasis. New faculty appointments can be made to bring in others who may join the Center's programs.

The Center as a Bridge

In both the conduct of research and the dissemination of results, the Center is a bridge between the research community and the user community, those who will apply the research. Most graduates in engineering and management will become part of the user community and many will become decision-makers themselves. Through research and courses in the Center's areas of emphasis, students develop a broader exposure to the interactions between research and education. In time, the flow of graduates will strengthen the bridge between the Center and the users and will establish, through application, the value of the Center's research contribution.

As part of the School of Management, the Center fulfills its educational role through two programs at Rensselaer. One is the Department of Science and Technology Studies, a major department within the School of Humanities and Social Sciences. The other is the Management of Technology, a program within the School of Management.

The academic base for the first program lies principally in the humanities and social sciences. The Department of Science and Technology Studies offers an undergraduate minor and major, an M.S., and a Ph.D. program. The program is an outgrowth of the increasing attention of many disciplines to the impact of scientific and technological activities on social and economic developments. The Center's research and staff interact with students and faculty of the Department.

The second program addresses a national need — that of converting technical advances to use. The Management of Technology graduate program trains students to manage those factors that affect the adaptation, conversion, and exploitation of technical advances by industry.

Such links to education are valued at the Center because a research center benefits immeasurably from developing strong links with teaching and with graduate research assistants, as well as through the transfer of knowledge.

Rensselaer's Facilities Supporting the Center

For the Center to operate effectively, it requires access to reference material and relevant databases, and a means of generating, analyzing, and presenting data.

Two facilities critical for conducting research are the library and computer systems. In both areas, Rensselaer offers outstanding services.

The modern and extensive resources of the Folsom Library include the library collections, information retrieval systems, photocopy services, and rooms for conferences and seminars. The more than 500,000 items in the library are supplemented by automated retrieval systems linked with over 5,600 other libraries and 200 databases. From anywhere on the Rensselaer campus, researchers can conveniently access the library's book and journal catalogs through the campus computer system.

One of the leading universities in computing, computer systems, and computer services, Rensselaer operates a large-scale 3081D main-frame computer, a major computing center, a Center for Interactive Computer Graphics, a network of terminals throughout the campus, and incorporates minicomputers and microcomputers. Additionally, the campus network of computers and terminals uses the same cable system as the campus telephones. This feature enables researchers to access, from the terminals or microcomputers in their offices, not only host computers at Rensselaer, but a variety of computers, data services, and networks off campus.

“At Rensselaer, the School of Management's orientation towards the management of technology is supported by the Center's research involvements.

In serving as a major linkage with the global industrial community, other research centers and governmental agencies, the Center provides an important source of networks for our faculty and students. It is this orientation, as well as its research on international technology matters, that allows the Center to be an important component of Rensselaer's drive to internationalize its programs, faculty and student body. ”



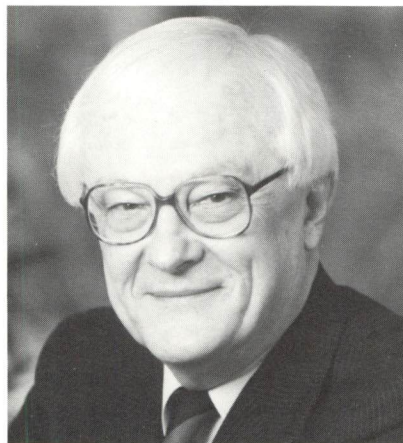
Robert G. Hawkins
Dean, School of Management
Rensselaer Polytechnic Institute

THE CENTER'S LINKS

“The Center brings to Rensselaer an internationally recognized research activity which can guide the process for generating and using technological change.

This is a valuable complement to the traditional role of Rensselaer, introducing technological advances and educating graduates who can employ them in society.

The Center's activities strengthen the intellectual base and provide Rensselaer with increased links to government and industry. ”



Roland W. Schmitt
President
Rensselaer Polytechnic Institute

Over the years, the Center has developed strong links with industry, government, and foundations which serve both as working partners in research and as funding sources. These contacts provide excellent feedback on the state of knowledge and the state of uncertainty about the process of technical change. This network of users and researchers also provides the early warning signals of change within the technical system.

Links to Industry

The Center has enjoyed continuing relationships with industry, usually through the personal involvement of senior technical and planning officers. These individuals have helped to identify research issues, assist with research programs, evaluate results, and provide funding.

Early on, to ensure an adequate pool of funds for its general-purpose and exploratory efforts, the Center instituted the Center Membership program for industrial associates. Each participating corporation has access to the Center's data and research, and can recommend issues for new research programs. This program has remained a fundamental part of the Center, allowing it to pursue new research directions, develop educational programs, carry out professional activities, and perform public outreach functions.

Corporations which have been part of the Center's activities include:

- | | |
|-----------------|-------------------------|
| ■ Alcoa | ■ Gulf & Western |
| ■ AT&T | ■ IBM |
| ■ Bellcore | ■ ITT |
| ■ Borg Warner | ■ Pfizer |
| ■ Eastman Kodak | ■ Procter & Gamble |
| ■ ELF Aquitaine | ■ Shell Development Co. |
| ■ Exxon | ■ Xerox |
| ■ GE | |

Usually as part of a multiple sponsorship, corporations are also involved in specific research programs. Thus, in addition to funds from Center Members, support for individual projects has come from:

- Bristol-Myers
- Monsanto
- North American Philips
- RCA
- Siemens
- United Technologies Corporation

Links to Government

Government policymakers have long drawn upon Center research to formulate and shape science and technology policy. This has been the basis for cooperative relations with many officials responsible for planning or allocating technical resources.

The process of government involvement usually begins with informal discussions. Based on its assessment of public needs related to the Center's competence and interests, the Center either submits research proposals to the appropriate government agencies or negotiates a contract to conduct a particular analysis or service. Those U.S. government organizations that have supported Center programs include:

- Departments of Commerce
- Department of Defense
- Department of Interior
- Department of State
- Office of Technology Assessment
- NASA
- National Science Foundation

We anticipate that future support from government will evolve for specific programs. The growing concern with the health of the national technical base has been an issue of recent discussion with the Department of Defense. Similarly, the interest of the Commerce and State Departments in the Center's research concerning patterns of international technology flow is likely to result in future support.

The Center's work has also been funded by leading international agencies. These include:

- Agency for Nuclear and Alternate Energy (ENEA) — Italy
- European Communities (EC)
- National Research Council (NRC) — Italy
- North Atlantic Treaty Organization (NATO)
- Organization for Economic Cooperation and Development (OECD)
- Swedish Employment Security Council (Trygghetsradet)

Regional groups have also supported Center research in the area of regional economic development. These groups include:

- State of New Jersey
- New York State
- New York City
- Worcester (Massachusetts) Development Corp.
- Port Authority of New York and New Jersey

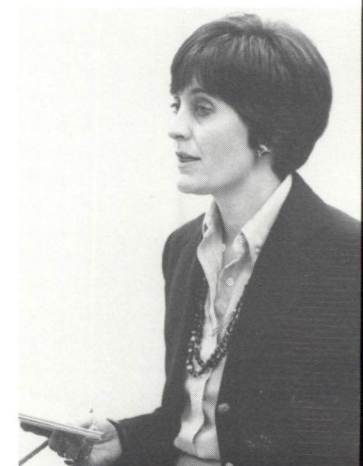
The Center has entered into discussions with the New York State Foundation for Science and Technology, which is interested in drawing upon the Center as a nucleus for expanding mutual research efforts throughout the State, focusing particularly on regional development.

Links to Foundations

Private foundations provide an important source of support for exploratory studies, for research in areas of generic interest, and for programs which span policy issues of concern to both the public and private sectors. To date, the Center has been supported by the Sloan Foundation, the Charles Stewart Mott Foundation, and the Japan Society. We anticipate expanding the base of foundation support in areas of new program development.



Thomas R. Pickering, Assistant Secretary of State for Oceans, Environmental and Scientific Affairs (currently U.S. Ambassador to Israel); and Nat C. Robertson, Vice President for R&D, Air Products Corp., at informal discussion at Center on programs of State Department, 1979.



Roberta Miller, Director, Social Sciences Division, National Science Foundation, speaker at Center seminars, 1982.

Courtesy NYU/Philip Gallo photo

SEMINARS AND CONFERENCES

In order to achieve its objectives, conduct its research effectively and fulfill its obligations to its sponsors and society, the Center has used a variety of mechanisms for strengthening its ties to outside communities.

Seminars and Scholarly Activities

Seminars provide a way for the Center to bring groups together to explore subjects informally, provide a base for regional cooperation, and exchange research progress with experts in shared fields of interest. Past seminar series have been conducted on such topics as:

- Current Issues in Science and Technology Policy
- Understanding R&D Productivity
- Pressures on the Semiconductor Industry
- Technical Strategies of Corporations with Multinational Laboratories

Publications and talks at professional societies are the principal means of communicating with the relevant research community. The Center has shared the results of its research with a broad range of professional groups in science and technology. Among them are the AAAS, Eastern Economics Association, Industrial Research Institute, American Chemical Society, National Conference of University Research Administrators (NCURA), Semiconductor Research Corporation (SRC), the Society for the Social Studies of Science (4S), and the National Conference on the Advancement of Research (NCAR).

Members of the Center's research staff have been called on for advice and consultation by the OECD, NATO, and Congressional staffs. Formal testimony has been given at hearings of the House Science and Technology Committee, and the Senate Committee of Commerce, Science and Transportation.

International Participation

In light of the growing trend toward internationalization of industrial economies, the Center has increasingly sought contacts abroad in order to promote knowledge transfer and to gain a broader perspective of research issues.

The Center has always recognized the importance of hosting visiting researchers in developing long-term relationships and initiating cooperative programs. Through its Visiting Research Fellows program, a number of such researchers have been at the Center since its early years, supported by their own institutions or separate grants.

Similarly, the Center has formed strong international ties by initiating conferences hosted both here and abroad. These conferences have given the Center wide international credibility, valuable contacts in industry and government, and a working base with related research centers in Europe and Japan. These conferences include:

- 1979 New York "Issues in Science and Technology Policy"
- 1980 Paris "Industrial Productivity and International Technical Cooperation"
- 1980 New York "Telecommunications and Productivity"
- 1983 Stockholm "University-Industry Research Interactions"
- 1986 Lucca "Technical Cooperation and International Competitiveness"

Support for the Center's international conferences has come from four major governmental organizations:

- National Science Foundation
- European Communities (EC)
- Organization for Economic Cooperation and Development (OECD), and
- North Atlantic Treaty Organization (NATO)



Participants at Conference on "University-Industry Research Interaction" in Stockholm in 1983. From left are Martin Fehrm, first Director-General of Swedish National Board for Technical Development (STU); Gunnar Hambræus, Chairman, Royal Swedish Academy of Engineering Sciences (IVA); Ingvar Carlsson, Prime Minister, Sweden; Ingvar Seregard, President, Federation of Salaried Employees in Industry and Services (PTK); Herbert I Fushfeld, Director, Center for Science and Technology Policy; and Hans Ursing, Managing Director, Swedish Employment Security Council (Trygghetsradet).

RESEARCH STAFF

Support also came from Sweden's Trygghetsradet, an organization of industry and labor dedicated to stimulating economic development. In Italy, support was received from the National Research Council and the Agency for Nuclear and Alternate Energy.

Herbert I. Fusfeld is Director of the Center for Science and Technology Policy and Professor of Management at RPI's School of Management.

He received a bachelor's degree in physics and mathematics from Brooklyn College, followed by an M.A. and Ph.D. in physics from the University of Pennsylvania.

Dr. Fusfeld was Director of Research at Kennecott Copper Corporation from 1963-78. Before that, he served as Director of Research at American Machine and Foundry Company.

Dr. Fusfeld has been particularly active in the field of research management. He has served the Industrial Research Institute as President in 1973-74. He was Vice President of the Research and Development Council, American Management Association, and a member of AMA Board of Trustees.

Dr. Fusfeld has been a member of the U.S.-USSR Joint Commission for Scientific and Technological Cooperation from 1974-79. He served on the State Department Advisory Committee on International Investment, Technology and Development from 1975-80. He has been a member of the Board of Science and Technology for International Development, National Academy of Sciences from 1977-79. He served on the Expert Group for Technology and Economic Growth, OECD, 1976-79.

Dr. Fusfeld was a member of the Advisory Council of the National Science Foundation from 1977-80 and the Governing Board of the American Institute of Physics. He has been a member of the National Materials Advisory Board from 1975-79. He has been active on the Advisory Board for the School of Materials Science, University of Pennsylvania from 1968-79. He is a Fellow of the AAAS.

Dr. Fusfeld has written numerous articles in physics of metals, research management, and science policy. He is the author of *The Technical Enterprise* (Ballinger, 1986).

Daniel Berg is currently Institute Professor of Science and Technology at Rensselaer Polytechnic Institute. He was appointed to the Presidency of RPI in March 1985 after having served as Acting President from May of 1984. A 1950 graduate of City College of New York, Dr. Berg received his master's and doctoral degrees at Yale University, where he majored in physical chemistry. After graduating from Yale in 1953, he joined Westinghouse Electric Corporation. There he enjoyed a research career which culminated in his being named Technical Director. In 1977 he embarked on a career in academia when he was appointed Professor of Science and Technology and Dean of the Mellon College of Science at Carnegie-Mellon University. He was later named provost at Carnegie-Mellon, a position he occupied until 1983 when he accepted the position of Vice President for Academic Affairs and Provost at Rensselaer Polytechnic Institute.

Dr. Berg is a member of the National Academy of Engineering. He is Fellow of AAAS, AIC and IEEE. He also was a panelist on the Impact of National Security Control on International Technology Transfer. Author of more than 75 technical management articles and books.

William G. Egelhoff is currently a visiting research professor at the Center for Science and Technology Policy, School of Management, Rensselaer Polytechnic Institute.

He was previously on the faculty of the Graduate School of Business Administration, New York University. Dr. Egelhoff has a Ph.D. (1979) and M.B.A. (1965) from Columbia University in management and a B.A. (1963) from the University of Texas at Austin. He has worked in the domestic and international operations of the Exxon Corporation and for the National Distillers and Chemical Corporation.

Dr. Egelhoff has published a number of articles on organizational design in multinational corporations, and a recent book entitled "Organizing the Multinational Enterprise: An Information-Processing Perspective." His current research deals with organizational design and strategy implementation in the global semiconductor industry, where he is completing an exploratory study in U.S., Japanese, and European firms.



Dr. Lois S. Peters, Senior Research Scientist at the Center, visiting Hiroshi Inose, Director General, National Center for Science Information Systems, Japan, in 1988.

RESEARCH STAFF (cont'd)

Henry Etzkowitz is Associate Professor of Sociology at the State University of New York at Purchase and Visiting Research Professor at the Center for Science and Technology Policy. He received an M.A. and Ph.D. (1969) in sociology from the new School for Social Research, and holds a B.A. in history from the University of Chicago. His research specialties are the sociology and history of science and technology, organizational analysis and the sociology of knowledge.

As part of a research program on university-industry relations, Dr. Etzkowitz is currently studying the role that universities and regional organizations played during the depression and World War II era in preparing the conditions for the post-war growth of the Route 128 high technology complex. He is also conducting research on the organization of scientific research groups, the recruitment to science and engineering and the formation of scientific disciplines. He is currently co-directing a study of the emergence of computer science as an independent discipline from its interdisciplinary origins (with Dr. Peters).

Dr. Etzkowitz is the first Chairperson of the Section on Science, Knowledge and Technology in the American Sociological Association and has been a Visiting Scholar in the History of Science Department at Harvard University and the Science, Technology and Society Program at MIT.

Carmela S. Haklisch is Senior Policy Research Analyst at the Center for Science and Technology Policy, School of Management, Rensselaer Polytechnic Institute (1978 to present). She holds a master's degree in Education from the University of Virginia. She served as Assistant to the Director of the Center for Technology Assessment and Resource Policy, Department of Engineering-Economic Systems, Stanford University (1975-78). She was also a research assistant for the U.S. Senate Committee on Commerce, Science and Transportation.

Her principal area of current research is industrial technical cooperation. Her studies on this subject include a survey of collective research activity in the U.S., an extensive database and analysis of technical alliances (national and international) in the semiconductor industry, and an examination of international industrial investment and technical cooperation in the machine tool industry.

Mrs. Haklisch has acted as project manager for a series of workshops and papers to evaluate current issues in science and technology policy for the National Science Foundation. These included professional technical training and collective industrial research. She has headed a program to assist NATO in technical exchanges between university and industry across NATO country boundaries. She has also coordinated the planning and conduct of three major international conferences held in New York, Paris and Stockholm.

Show-Ling Jang is a Research Analyst at the Center for Science and Technology Policy. Before coming to RPI, she worked as the Senior Researcher in the Construction and Planning Administration of the Ministry of the Interior, R.O.C. Her dissertation, "Productivity Growth and Technical Change in the U.S. Semiconductor, Computer and Telecommunications Equipment Industries," examined the technological change and structure of production in those industries through description and use of various econometric models.

Building on this expertise, Dr. Jang's current research activities include econometric research and analysis of technological change and productivity growth.

Show-Ling earned both a B.A. in Economics and an M.S. in Civil Engineering at National Taiwan University, R.O.C. She has published and presented articles on urban and regional planning and productivity and change in the U.S. semiconductor and computer industries.

Joseph G. Morone is a member of the research staff at the Center, and an Assistant Professor in the Department of Managerial Policy and Organization at the RPI School of Management. His primary research interest is in the management of technology, particularly in organizational and strategic questions associated with the use of technology as a source of competitive advantage. Dr. Morone also has research interests in science and technology policy, where he has co-authored two books, *Averting Catastrophe: Strategies for Regulating Risky Technologies*, and *The Demise of Nuclear Power: Lessons for Democratic Control of Technology* (forthcoming).

Dr. Morone has a Ph.D. from Yale University in Political Science, with a specialization in organizational theory and decision making. Prior to joining the School of Management, he was a senior associate for a Washington-based consulting firm that specialized in technology management and science policy issues. He also spent seven years at the General Electric Company's Corporate R&D lab, working primarily in strategic planning functions; and one year at the White House Office of Science and Technology Policy, as a fellow of the Industrial Research Institute.

John R. Norsworthy is Professor of Management and Economics at Rensselaer Polytechnic Institute. He is director of the graduate program in Managerial Economics, a doctoral program jointly offered by the Department of Economics and the School of Management, and of the Laboratory for Productivity and Technology in the Center for Science and Technology Policy.

Dr. Norsworthy received a B.A. with distinction and Ph.D. (1966) in economics from the University of Virginia and was a post-doctoral fellow at the University of Chicago in 1965-66. He received Distinguished Achievement Award for Research from the U.S. Labor Department in 1980 and is a member of Phi Beta Kappa. In 1988, he received the Lawrence R. Gordon award for excellence in graduate teaching and research in economics. He has published articles in domestic and international professional journals on productivity measurement and analysis in U.S. and Japan, technological

change, measurement and analysis of capital and capacity utilization, energy effects on technology input-output analysis, and a wide range of other statistical and economic issues.

His current research activities include measurement and analysis of technological change and productivity growth; the relationship between technology and worker attitudes, and between worker attitudes and productivity and product quality; the economics of flexible manufacturing; the role of productivity and technological information in information systems design; measurement and analysis of productivity and technological change in service industries; and measurement of capital input and capacity utilization.

Lois S. Peters is an Assistant Professor in the School of Management, Rensselaer Polytechnic Institute, and Senior Research Scientist in the Center for Science and Technology Policy. She received her Ph.D. in Biology and Environmental Medicine from New York University in 1979. She conducts research on the technical system and industrial growth to identify factors and conditions critical for developing policies and management practices for more effective use of the industrial research system. Dr. Peters teaches courses on energy and environment, management and business policy and technical change.

Under Dr. Peter's supervision, the Center's study of university/industry relations resulted in the major 1983 publication, *Current U.S. University/Industry Research Connections* for the National Science Board. Subsequently, the publication became the basis for the Board's 1982 annual report to the President and Congress. Her recent work has included studies of technical change in agrichemicals and the pharmaceutical industry. She also completed a major report on "Technical Network Between U.S. and Japanese Industry" (1988).

Dr. Peters has participated in numerous national and international workshops on cross sector research cooperation and economic expansion.

RESEARCH STAFF (cont'd)

Susan Walsh Sanderson is a visiting associate professor at the School of Management of Rensselaer Polytechnic Institute. She works jointly with the Center for Science and Technology Policy and the Center for Manufacturing Productivity on issues related to technology, trade, and international competitiveness. Prior to this appointment, she was a senior research associate at the Conference Board, and a faculty member of the School of Urban and Public Affairs at Carnegie-Mellon University.

Dr. Sanderson completed a Ph.D. in Sociology at the University of Pittsburgh in 1980. She has carried out research on social and economic policy at the Colegio de Mexico in Mexico City and in Europe and Asia. She has been a consultant to industry and government.

Her published work covers a wide variety of topics related to social policy, trade, and technology. Her current research concerns developing models for evaluating the costs of new product design, systems design, implementation, and operations of manufacturing systems, as well as organizational innovations to speed new product and process design and commercialization.

Nicholas S. Vonortas joined the Center in 1985 as a Research Associate. He has co-authored (with C.S. Haklisch) two reports in the series, "Export Controls and the International Technical System," those dealing with the machine tool and semiconductor industries. He is currently working on a project concerning the transfer of technology through multinational corporations. During his stay in New York, he has completed work on a study of the activities of Third World multinationals for the United Nations Centre on Transnational Corporations. He has also been an Instructor of Economics at New York University.

Dr. Vonortas holds a B.A. in Economics (1981) from the University of Athens, Greece, an M.A. in Economic Development (1982, with distinction) from the University of Leicester, England, and an M.Phil. and a Ph.D. in Economics (1987 and 1988, respectively) from New York University. His research focuses on industrial organization and international trade with special emphasis on the economics of industrial R&D and the international transfer of technology.

Patricia A. Wheeler is a member of the Center's research staff, and a doctoral candidate at Rensselaer Polytechnic Institute's School of Management. She is also a Junior Fellow at the State University of New York's Nelson A. Rockefeller Institute of Government.

She has co-authored *Technology-based Regional Economic Development: An Overview* with L.S. Peters (1988). Her current research activities involve the interaction between technology-based state/regional incentives and initiatives and small firm location strategies. Her dissertation research focuses on the regional economic impact of university-related research parks.

Ms. Wheeler holds an A.B. in psychology from Mount Holyoke College, an M.S.I.A. from Union College, and an M.S. in operations research and statistics from RPI.

Research Associates

P. Thomas Carroll is a cultural historian of American science and technology, with special interest in chemistry and chemical engineering. He took a bachelor's degree in history at Caltech in 1972 and a doctorate in the history and sociology of science at the University of Pennsylvania in 1982, studying under Daniel J. Kevles and Arnold Thackray, respectively. Since that time, he has been Assistant Professor of History in the Department of Science and Technology Studies, Rensselaer Polytechnic Institute, where he has worked to integrate the history of American science with the history of American technology. Typical of his perspective is a most recent publication, "American Science Transformed" (*American Scientist*, 74 [1986] 466-485), commissioned to commemorate the centennial of Sigma Xi, the Scientific Research Society.

Richard N. Langlois is Associate Professor of Economics at the University of Connecticut (Storrs). He was previously a research assistant professor at the Center for Science and Technology Policy. Dr. Langlois received a B.A. from Williams College (1974), an M.S. in astrophysics from Yale University (1975), and an M.S. (1976) and Ph.D. (1981) in Engineering-Economics Systems from Stanford University.



Informal discussion at Center offices, 1982. In photo are Herbert I. Fusfeld, Director of the Center; and Bruce Merrifield, Assistant Secretary of Commerce for Productivity, Technology and Innovation.

He has worked for the Commerce Department on Energy Facility Siting, and the Office of Coastal Zone Management. He has participated in the Alaskan North Slope Gas Study at the Center for Technology Assessment and Resource Policy at Stanford University. Dr. Langlois also served as a research associate at the Energy Policy Analysis Group of the Brookhaven National Laboratory. Since 1981 he has held the position of adjunct assistant professor in the Department of Economics and associate research scientist at the C.V. Starr Center for Applied Economics at New York University. His research interests include knowledge and information in economic theory, innovation and technical change, industrial organization and the theory of the firm, evolutionary models, and law and economics.

Richard R. Nelson has been the Henry Luce Professor of International Political Economy at Columbia University's School of International Affairs since 1986. Formerly, he was professor of Economics at Yale University and Director of the Institute for Social Policy Studies. He has participated in research programs of the Center since its inception in 1978.

A graduate of Oberlin College and Yale University, Dr. Nelson served as Senior Staff Member of the Council for Economic Advisers (1961-63) and a research economist at the Rand Corporation (1963-68) before returning to teach at Yale. He has also served as consultant and panelist to other government agencies including the National Science Foundation, National Academy of Sciences, the President's Science Policy Advisory Committee, and the OECD.

Dr. Nelson has published extensively on subjects related to long-run economic change, with particular emphasis on technological advance and on the evolution of economic institutions. Among his publications are *Government and Technical Progress* (as editor) and *Technology, Economic Growth and Public Policy* (with M.J. Peck and E.D. Kalachek).

Daniel L. Orne is currently an assistant professor in the School of Management at RPI. He previously was Manager of Business Development and Venture Activities for a division of the Norton Company and, still earlier, an officer in the Army. Dr. Orne holds three degrees from RPI in areas related to engineering, management and operations research.

His research, educational and consulting activities have, during the last decade, been primarily in the area of manufacturing strategy and master planning for computer-integrated manufacturing.

In recent years, he has served as a consultant for Digital (DEC), Garden Way, General Electric, General Tire, AT&T, and the Peoples Republic of China. In each organization, the work was related to manufacturing strategy and/or educational programs for executives.

Dr. Orne is a member of the Strategic Management Society; American Production and Inventory Control Society (APICS); Society of Manufacturing Engineers (CASA); Institute of Management Sciences; and the Academy of Management.

Richard Worthington is Associate Professor of Political Science in the Department of Science and Technology Studies at Rensselaer Polytechnic Institute.

He studied political science at the University of California (Berkeley) and the University of Oregon before coming to Rensselaer in 1977.

Dr. Worthington's areas of scholarly interest include political economy, technology and politics, and international relations. His publications of policy issues related to science and technology have appeared in numerous edited volumes, as well as *Policy Studies Journal*, *Humanity and Society*, *Research in Philosophy and Technology*, *Social Policy*, and *New Political Science*, among other journals. He is presently writing a book on the politics of global production.



Informal discussion at Center offices, 1982. In photo are Robert Chabbal, Assistant Secretary General for Scientific and Environmental Affairs, NATO; and Carmela S. Haklisch, Senior Policy Research Analyst at Center.

Courtesy NYU/Philip Gallo photo

Related Faculty Specialists

Pier Abetti
Professor,
Entrepreneurship

Susan Cozzens
Assistant Professor,
Sociology of Science

David H. Goldenberg
Associate Professor, Finance

Edward Hackett
Assistant Professor,
Sociology of Science

Robert G. Hawkins
Dean and Professor,
International Economics

Richard Leifer
Associate Professor,
Organizational Behavior

Albert S. Paulson
Assistant Professor,
Risk Management

William A. Wallace
Professor, Management
Information System

Edward Woodhouse
Associate Professor, Science
and Technology Policy

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THE PROCTER & GAMBLE COMPANY

EDWIN L. ARTZT
CHAIRMAN OF THE BOARD AND
CHIEF EXECUTIVE

1 PROCTER & GAMBLE PLAZA
CINCINNATI, OHIO 45202-3315

July 15, 1991

Dr. David Allan Bromley
President's Advisor on
Science & Technology
Office of Science and Technology
Executive Office of the President
White House
1600 Pennsylvania Avenue
Washington D.C. 20500

Dear Dr. Bromley:

Procter & Gamble and my counterparts at Xerox, Motorola, IBM, Ford, and American Express are sponsoring a conference on August 6-8 in Cincinnati, Ohio. Most of the participants will be university presidents, deans of business schools, deans of engineering schools, and some industry and government leaders. I am writing to invite you to speak at this conference.

As a bit of background, David Kearns, then Chairman and CEO of Xerox, initiated the first Quality Forum in 1989 and Xerox sponsored it again in 1990. Both were highly successful. At Mr. Kearns' suggestion, Procter & Gamble accepted leadership for the Forum this year. We are working with the five companies I have noted above, all leaders in Total Quality, in order to ensure another outstanding conference.

As I am sure you agree, Total Quality is a compelling business strategy. It is now acknowledged as a highly effective means to achieve greater customer satisfaction, business leadership, and consequently, global competitive advantage. President Bush has done much to encourage the application of Total Quality in industry and government. However, we urgently need the support of our nation's colleges and universities if we are to reap the benefits of this important business strategy. All of us believe very deeply that America's higher education system is one of our greatest assets. Therefore, we have a wonderful opportunity to leverage this competitive advantage by encouraging the teaching and research of Total Quality concepts in our leading universities.

Participants from the past two conferences identified the need for a research and scholarship agenda in Total Quality. While some universities are already conducting such research, others are struggling with a number of different issues that have made research difficult. Some believe that there are few publishing outlets for scholarly research on Total Quality and they cite the lack of funding opportunities as a barrier. Finally, there are still some who do not yet see Total Quality as a "serious," researchable subject.

As a result, we are at a standstill against this opportunity. As you certainly know, research often drives curricula development among our universities. When Total Quality is not viewed as a researchable subject, there is limited interest in teaching it. Consequently, our graduates are currently not schooled in Total Quality principles and, in many cases, are educated on subjects that are inconsistent with the concept. Finally, industry is left to do much of their own research and development on a subject that is applicable to virtually every company. This is obviously not very efficient and does not facilitate the type of public access that is important if we are to reach the hundreds of thousands of companies that can benefit.

We believe this issue of research in Total Quality is so important that we are dedicating all of the third day of the conference to this subject. I am writing to you to ask you to speak at the conference for about thirty minutes on the morning of August 8 on the subject of Total Quality scholarship and research. I hope you will personally accept this invitation to speak. You command a great deal of respect with the conference participants and they would find your perspectives very useful. However, if your schedule does not permit you to attend the conference, perhaps Dr. William Phillips could speak on behalf of the office of Science and Technology.

We have an exciting agenda planned. A number of industry leaders will speak, including Jim Robinson of American Express, Alex Trotman of Ford, Walt Burdick of IBM, and Bob Galvin of Motorola. From the academic sector, Dean Thomas Murrin of Duquesne University, Dean Joseph White of University of Michigan, Dean Meyer Feldberg of Columbia University, Dean John Bollinger of University of Wisconsin, Robert Kaplan of Harvard, and others will share their perspectives. David Kearns, Deputy Secretary of Education will join us as well.

Please let me know if you can provide the keynote on August 8. If you can, we'll get back to you quickly with more details on the agenda. You are, of course, most welcome to attend the entire conference.

Sincerely,



Edwin L. Artzt

cc. Dr. William Phillips

THE WHITE HOUSE
WASHINGTON

August 1, 1991

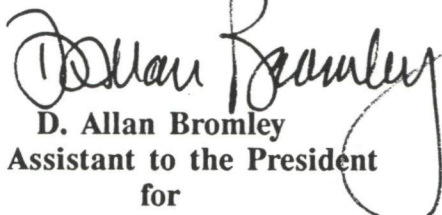
Dear Mr. Artzt:

Thank you for your letter of July 15, 1991, inviting me to address the conference scheduled for August 6-8, 1991, in Cincinnati, Ohio. I apologize for the belated response.

As much as I would like to join you, I must regretfully decline because I will be out of town during that period. I had hoped that Dr. William Phillips, my Associate Director for Industrial Technology, might be available to attend the conference, but he too will be out of town.

I appreciate your thinking of me and offer my best wishes for a successful conference.

Sincerely yours,


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

Mr. Edwin L. Artzt
The Proctor & Gamble Company
1 Proctor & Gamble Plaza
Cincinnati, Ohio 45202

IBM

FAX TRANSMISSION

IBM Thomas J. Watson Research Center
P.O. Box 218, Route 134
Yorktown Heights, NY 10598 USA
FAX: (914) 945-3715
TELEX: (9102400632)

ATTENTION:

Name:	Dr. Allan Bromley
Department:	White House Science Advisor
Fax #:	202 - 395 - 3261

SENT BY:

James J. Wynne
Chair, APS Committee on Education
Phone: 914 - 945 - 1575

We are transmitting 3 pages (including cover page).

COMMENT:

July 29, 1991

Dr. Allan D. Bromley
White House Science Advisor
FAX: (202) 395-3261

Dear Dr. Bromley,

I am FAXing you this letter to seek your advice as to the appropriateness and wording of a request to have President Bush address a meeting of the American Physical Society in Indianapolis in March, 1992.

At our April meeting in Washington, DC, the Committee on Education of the APS assigned Warren Buck (Committee member) and me (Committee chair) the task of coming up with an education session for the next March meeting. We decided to pursue a program featuring President Bush and several high school physics teachers who have won Presidential Awards. We now have the OK from Prof. Nicolaas Bloembergen, APS President, to go ahead with our plan. I want to send the "correct" letter to President Bush, and I am seeking your advice. The following draft letter is for your attention. Please advise me how to proceed. Should the letter be signed by Prof. Bloembergen? me? both of us? I await your reply. Thank you for your attention to this matter.

Sincerely,
James J. Wynne, Ph. D.
Chair, Committee on Education, American Physical Society

Danner

*I am sure that I would be highly improbable
that the Pres. could join them. Normally his participation
in society meetings is limited to those held
in Washington and even then he can respond
to only a very small fraction of the invitations.*

I will sign the letter

DRAFT LETTER

July 29, 1991

Dear President Bush,

We invite you to present an address on education to the membership of the American Physical Society during its meeting from March 16-20, 1992, in Indianapolis, IN. For this meeting, our Committee on Education is putting together a special session on education, tentatively entitled "Outstanding High School Teachers: The Presidential Awardee Session," and it seems especially appropriate to couple you with outstanding teachers, since one of the focal areas of your education agenda, "America 2000," is recognition and professional development of teachers, especially in science and mathematics. We offer you this opportunity to address the nation's professional research physicists on your education agenda, and to share the stage with several of our most outstanding educators, high school teachers who have received Presidential Awards. The message to the audience of physicists will be that all of us must support our teachers, the first line of offense in raising our educational standards, and that we especially honor and recognize the efforts of our outstanding teachers.

In the way of background, the American Physical Society, with a membership in excess of 42,000, has as its goal the advancement and diffusion of the knowledge of physics. To achieve this goal, the APS holds meetings, publishes journals, considers public issues such as nuclear materials proliferation, global warming, and biomedical hazards from low frequency electromagnetic fields, deals with human rights and minority issues in physics, and has an active program concerned with physics education. The March meeting is our largest meeting and is the leading internationally recognized meeting in condensed matter physics, with a regular attendance in excess of 5,000. If you are able to address us, you can be assured of a large and influential audience.

For our planning purposes, we need to know by November 11, 1991, whether you are able to accept our invitation. Should you accept but are unable to attend because of unplanned demands on your time, we suggest that your science advisor, Allan Bromley, a physicist and a Fellow of our society, would be the best person to appear in your behalf. We look forward to your early response.

THE WHITE HOUSE
WASHINGTON

August 2, 1991

Dear Dr. Wynne:

Thank you for your fax of July 29 seeking my advice about inviting the President to address the American Physical Society meeting scheduled for March 1992 in Indianapolis.

Your letter looks fine as it is, and I would encourage you to send it. But I might issue a bit of a warning. It is highly unlikely that the President can join you because normally his participation in society meetings is limited to those held in Washington, and even then he can accept only a very small fraction of the invitations.

Nevertheless, I wish you the best of luck with the invitation and with the other preparations for the meeting.

Sincerely yours,

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

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

Dr. James J. Wynne
Chair
Committee on Education
American Physical Society
IBM Thomas J. Watson Research Center
P.O. Box 218, Route 134
Yorktown Heights, New York 10598

File

THE WHITE HOUSE

WASHINGTON

☐ APPOINTMENT

☒ SCHEDULE

RESPONSE DUE DATE:

August 12, 1991

REQUEST FOR SCHEDULING RECOMMENDATION

MEMORANDUM FOR:

____ GOVERNOR SUNUNU
____ ANDREW CARD, JR
____ ROGER PORTER
____ SIG ROGICH
____ SUSAN PORTER ROSE
☒ EDE HOLIDAY
____ CHASE UNTERMAYER
____ GREGG PETERSMEYER
____ DORRANCE SMITH

____ PHILLIP BRADY
☒ DAVID DEMAREST
____ MARLIN FITZWATER
____ FREDERICK MCCLURE
____ J. BONNIE NEWMAN
____ BRENT SCOWCROFT
____ C. BOYDEN GRAY
____ ED ROGERS
☒ *Dr. Bomley* ✓

FROM:

KATHY L. SUPER
PRESIDENTIAL APPOINTMENTS AND SCHEDULING

Please provide your recommendation the following scheduling request:

EVENT:

Address the Opening Session of the 9th International
Conference on Coal Research

DATE:

October 14, 1991

LOCATION:

Washington, D.C.

Additional information concerning this event is attached.

YOUR RECOMMENDATION:

Accept _____

Regret _____

*per Gene Wong
ASSO. Dir 1051P*

Surrogate _____

Priority _____

Routine _____

Message _____

Video _____

Satellite _____

Teleconference _____

Written _____

If your commendation is to accept, please cite reasons below

PLEASE RETURN TO WINDY WHITE, ROOM 182. OEOB, BY THE RESPONSE DUE DATE ABOVE SO THAT
YOUR COMMENTS MAY BE CONSIDERED AS WE PROCEED WITH IS REQUEST.
THANK YOU

Scheduling 10-14-91 247.
INTERNATIONAL COMMITTEE FOR COAL RESEARCH

RICHARD L. LAWSON
Chairman
Head, United States Delegation

The Secretariat
Avenue de Tervueren 168, Boite 11
B-1150 BRUSSELS

June 17, 1991

President George H. W. Bush
The White House
1600 Pennsylvania Ave., N.W.
Washington, D.C. 20500

Dear Mr. President:

On behalf of the international coal community I would like to extend an invitation to address the opening session of the 9th International Conference on Coal Research, the morning of October 14, 1991, at the Shoreham Hotel, Washington, D.C.

Over past decades, coal has provided the basic energy source fueling the industrial revolution and making economic growth possible in the developed world. Coal is now being called upon to provide the energy foundation for newly developing countries as well. The multi-national membership of the International Committee for Coal Research (ICCR), the sponsor of this conference, has provided a forum to exchange information about technological advances that have made greater coal use possible worldwide. As we enter a new era of global environmental awareness, the ICCR will continue to play a preeminent role in promoting the use of environmentally sound technologies that will allow an even greater role for coal in meeting the growing energy needs of the industrial world, and, just as importantly, to support rapidly growing needs of the populations and economies of the developing world.

The 9th Conference, which will bring coal and energy industry leaders from around the world to Washington, will be the first in this most important environment, energy and coal decade. We can think of no more appropriate beginning than an address by you, leader of the nation that is foremost in the development of the new coal technologies which will make the environmental, energy and economic synergism possible.

We deeply appreciate your consideration of the invitation.

Respectfully,



Richard L. Lawson
Chairman, International Committee
for Coal Research
President, National Coal Association

1130 17th Street, N.W.
Washington, D.C. 20036-4677
(202) 463-2647

9/4

Per DAB's instructions
regretted to Brian Green.

MN



1501 Lee Highway, Arlington, Virginia 22209-1198 (703) 247-5800
An Independent Non Profit Aerospace Organization

August 27, 1991

Dr. Allan Bromley
Assistant to the President
for Science and Technology
Old Executive Office Building
17th St. and Pennsylvania Ave. NW
Washington, DC 20506

Dear Dr. Bromley:

I am pleased to extend to you an invitation to address the Air Force Association's Science and Technology Advisory Group at its forthcoming meeting on Saturday, September 14.

AFA's S&T Advisory Group is devoted to supporting strong national and Air Force science and technology programs. To that end, we try to stay abreast of important organizational, policy, and technical issues that affect the health and vitality of the US S&T establishment. If you can join us, our members would be most interested in hearing your views about the key challenges we face in the effort to maintain our technical leadership.

The Advisory Group meeting will be held in conjunction with AFA's national convention in the Marshall Room of the Sheraton Washington Hotel, from 9:00 AM to noon. We generally ask our speaker to plan on about an hour so for a presentation and a question and answer session. Audio-visual support is available. All remarks to the Advisory Group are for background only and are as far off the record as our speakers want them to be. In addition to our Group members, a small number of AFA leaders are expected to attend the session, including AFA President Ollie Crawford and Chairman of the Board Jack Price.

If you have any questions at all, please don't hesitate to have your staff call. Brian Green (at 703-247-5845) is the AFA staff liaison for the Group. I certainly hope your schedule will permit you to be with us, and I look forward to hearing from you soon.

Sincerely,

Robert T. Marsh, Chairman
Science and Technology Advisory Group

BRG/BRG

AFA Science and Technology Advisory Group Roster

General Robert T. Marsh, USAF (Ret.), Chairman
consultant
Former Chairman of the Board, Thiokol Corp.
Former Commander, AFSC

Dr. Thomas Cooper
General Electric Corp.
Former Assistant Secretary of the Air Force/Research and
Development

Mr. Charles Durazo
Triad Associates
Retired USAF Col.

Gen. Charles Gabriel, USAF (Ret.)
Hicks and Associates
Former Chief of Staff

Mr. H. B. Henderson
General Dynamics

Lt. Gen. Thomas McMullen, USAF (Ret.)
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Dr. Wayne Schroeder
RDA Logicon
Former Professional Staffer, Senate Appropriations Committee,
Defense Subcommittee

Mr. Henry Smyth
Bell Hellicopter
Retired Maj. Gen. Air National Guard

Brig. Gen. Charles Stebbins USAF (Ret.)
RDA Logicon
Former DCS for Science and Technology, AFSC

Dr. James Tegnella
Martin Marietta
Former DARPA Director

Dr. Richard Thomas
Director, Center for Strategic Technology, Texas A&M

Col. George Weinbrenner, USAF (Ret.)

Recent Guest Speakers before the AFA SET Advisory Group

Maj. Gen. Joseph Ralston, Director, Tactical Programs, SAF/AQP
Mr. William Smith, Professional Staff, Senate Armed Services Committee
Dr. Vic Reis, Director, DARPA

Air Force Association

1501 Lee Highway
Arlington, Virginia 22209-1198

National Defense Issues Department

DATE: August 28, 1991

OF PAGES: 3 (including this one)

TO

NAME: Dr. Allan Bromley/Marion

COMPANY: OSTP

FAX #: 202-395-3261

MESSAGE: see attached

FROM

Brian R. Green
Chief, Legislative Research and Analysis

Phone: 703-247-5845
Fax: 703-247-5853

Business Week Magazine
1221 Avenue of the Americas
New York, New York 10020
212 512-2064

Please put in the
system & close out.
DAB declined their
invitation.

Marian

BusinessWeek

John W. Patten
Publisher

October 22, 1991

Dr. Allan Bromley
Assistant to the President
for Science and Technology
Old Executive Office Building
17th Street and Pennsylvania Ave., NW
Washington, D.C. 20506

Dear Dr. Bromley:

This coming January 16-17 *Business Week* magazine will host **The 1992 Business Week Presidents' Forum** in Palm Springs, California. Entitled **The New Corporate Order**, this private gathering of America's business leaders promises to be one of the most important and dynamic arenas for the discussion of issues critical to our nation's prosperity. *Business Week* would be greatly honored if you could join us as a prominently featured speaker at this event.

The theme of the upcoming Presidents' Forum will center on the revolutionary shift sweeping across corporate America — a trend toward partnering and cooperation in all endeavors. Just as the walls between national political and economic boundaries are tumbling down, so too are the walls of the business world as we know it today. Faced with mounting pressure for cutting-edge innovation, global scale, superior service and quality, cash flow perfection, and other imperatives, business leaders find they run short on the resources needed to compete and grow. No longer able to go it alone, American firms are building unprecedented intra- and extra-corporate linkages to bolster their position — often with previously taboo partners (preliminary agenda enclosed).

Specifically, we hope you can participate in a panel discussion scheduled for the morning of January 17, 1992 entitled "*Industrial Policy: Can Everyone Benefit?*" As other nations actively support their key industries to ensure a competitive edge, the question of whether the United States should adopt an industrial policy to benefit American competitiveness abroad has taken center stage in the national economic debate. Joining you on the panel will be Ms. Susan Schwab, Assistant Secretary of Commerce and Director General of the U.S. and Foreign Commercial Service, and U.S. Senator Joseph Lieberman of Connecticut. *Business Week* recognizes the instrumental role you have played, as advisor to President Bush and as Director of the Critical Technologies Institute, in designing a viable "technology policy" which aims at forging partnerships between government and business. Your insight on this issue would add a significant contribution to the value and interest of our program.

Although still in the earliest stages of development, our program's key features are outlined below:

- It will be attended by a select audience of over 100 presidents of the nation's largest and most lucrative corporations (revenues over \$250 million). Attendance is by invitation only (no substitution allowed), and delegates come as guests of *Business Week*.
- A future issue of *Business Week* will contain a special 4-page report devoted to the gathering, presenting its conclusions to the magazine's worldwide contingent of over 7 million readers.

Page 2

• Already confirmed as a keynote speaker is **T. Boone Pickens, Jr.**, founder and chief executive of Mesa Petroleum. Other confirmed speakers include **Roger Sant**, CEO of AES, Inc., and three of the world's leading business thinkers: **Dr. Warren Bennis**, author of *On Becoming a Leader*; **Gary Hamel** of the London Business School, creator of the "core competencies" concept; and **Dr. Jordan Lewis**, former Wharton professor and author of the highly acclaimed *Partnerships for Profit*. Except for a few other government leaders, the majority of our other speakers will be the senior-most executives of companies at the forefront of "The New Corporate Order."

We hope you will take this opportunity to address the corporate vanguard of America. Your participation would certainly ensure a riveting exchange of ideas among this distinguished gathering of minds. You may have your office forward your response to this invitation, along with any inquiries concerning your prospective role, by calling Ms. Heidi Lorenzen, the editorial director of The 1992 *Business Week* Presidents' Forum, at 212-512-6251 (or fax 212-512-6909).

With respect for your consideration, I am eager to learn that you will be joining us in Palm Springs.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "J. W. Pickens", with a long horizontal flourish extending to the right.

The 1992 BusinessWeek Presidents' Forum

January 16-19, 1992
Hyatt Grand Champions
Palm Springs, California

...at the Bob Hope Chrysler Classic

THE NEW CORPORATE ORDER

*A private symposium of corporate presidents
presented by Business Week
in association with
Gemini Consulting
MCI Communications Corporation*

Program Agenda
as of October 22, 1991

The 1992 Business Week Presidents' Forum
page 1

Thursday, January 16

7:00am Registration and Continental Breakfast

8:00am Welcome

John W. Patten, Publisher, *Business Week*

8:05am **THE NEW CORPORATE ORDER**

A revolutionary shift is sweeping across Corporate America. Faced with mounting pressure for global scale, cutting-edge innovation, rapid response, cash flow perfection, excellence in all endeavors, and other extreme imperatives, business leaders find they *run short on the resources needed to compete and grow*. No longer able to go it alone, even the largest firms are building unprecedented intra- and extra-corporate linkages to bolster their position—turning to other firms, competitors, customers, suppliers, employees, academia, government, shareholders, and other previously taboo business partners. Just as the walls between national economic and political boundaries are tumbling down, so too are the walls that have shaped the business world as we know it today. What are the long-term implications of this new corporate order? What should you be doing now?

Jordan D. Lewis, Ph.D., Prof. Emeritus, Wharton School of Business; author, Partnerships for Profit

8:35am **TEAMING UP FOR CORPORATE TRANSFORMATION**

If change is the only constant, transformation within corporate bounds must become a constant as well. But, as the pace of change hastens, it grows increasingly difficult for large firms to calibrate their monolithic organizational and operational structures effectively. The participants on this panel have found that partnerships of all types provide the resources needed to make ongoing improvements, reclaim competitiveness, and lay the foundation for higher levels of profitability and shareholder value. To whom have they turned? With what results, in the long-term and the short-term?

Moderator:

Warren Bennis, Ph.D., Distinguished Professor of Business Administration, University of Southern California; Author, *On Becoming a Leader*

Art E. Hitsman, President, Boeing Computer Services

Lee M. Gammill, Executive Vice President, Agency, Disability Income, and Individual Life, New York Life Insurance Company

Daniel J. Valentino, Managing Director, North America, Gemini Consulting

10:15am Refreshment Break

10:45am **CREATING *ESPRIT DE CORPS* WITHIN CORPORATE BOUNDS:
A COMPETITIVE IMPERATIVE**

Realizing that employees are their greatest and often most costly asset, more and more corporations are taking steps to ensure that employees are their best partners and that cross-function relationships are amicable and productive. The result: improved productivity, innovative thinking, "total quality," enhanced adaptability, and lower costs. How have corporate leaders taken "empowerment," "team-building," and "development" beyond buzzwords to an integrated essential of corporate planning? What is the most effective approach toward powerful labor unions? How are business partnerships between functions being fostered at the highest level? What will your organizational structure look like by the end of this century?

Claude Rameau, Dean, INSEAD

Roger Sant, CEO, AES, Inc.

12:15pm Break

12:30pm Luncheon and Special Address

The 1992 Business Week Presidents' Forum

page 2

**CORPORATE IMAGINATION:
CREATING COMPETITIVE SPACE**

A company can increase its successes not only by raising its hit rate, but also by increasing the number of market opportunities, niches, and product permutations it explores.

Most companies emphasize clear delineation between executive ownership of business units. Few give equal attention to finding new competitive territory across units. Most companies today listen to customers. Market leaders get out in front of customers and guide them where they want to go—before they know it themselves. Most companies realize the importance of speed and flexibility. Few can quickly fine tune a product or service to make it a winner once it has been launched.

How can corporate leaders be as effective at opportunity management as they are at operations management? How can they inspire the organization's imagination "with a view of distant shores and then help the intrepid explorers set sail?"

Gary Hamel, Associate Professor of Strategy and International Management, London Business School'

2:00pm Break

2:15pm **TIED TO YOUR STAKEHOLDERS:
COOPERATION WITH CUSTOMERS AND SUPPLIERS**

Customer service can no longer be lip service. Relationships with suppliers can no longer be antagonistic. To gain a competitive edge, companies are pursuing a new kind of integration by reaching out to customers and suppliers—to define their every need, and to meet those needs, while denying the urge to merge. Why is the traditional customer-supplier hierarchy no longer an effective model? How have improvements in these relationships been measured? What tangible benefits have been accrued?

Kevin Sharer, President of Business Markets, MCI Communications Corporation

3:45pm Refreshment Break

4:05pm **FROM RIVALS TO ALLIES:
TACKLING NEW ISSUES OF LEADERSHIP
PLENARY AND WORKING GROUP SESSIONS**

The grand irony of modern business is that global competition has produced global cooperation. Capitalizing on the success of their competitors, rivals have become allies in order to facilitate their corporate renewal process—engendering innovative research, new products, and untapped markets. In the process, risks and costs are lowered. But the success of these alliances is contingent upon the leadership of the parties. It is critical that the corporate officers not only shake hands in the beginning but also quarterback the entire effort. What leadership challenges have some of the most successful alliances created? How are they overcome?

Peter Pekar, Jr., Ph.D., former President, BT-USA, Inc.; now Associate Professor, California Polytechnic University

5:30pm Day's sessions conclude

The 1992 Business Week Presidents' Forum
page 3

6:30pm Cocktail Reception

7:30pm DINNER AND KEYNOTE ADDRESS

T. Boone Pickens, Founder, Mesa Petroleum

His corporate raiding exploits made him a symbol of the aggressive, often antagonistic strategies of the '80s. Now, "The New Corporate Order" demands that Boone Pickens re-calibrate his trademark tactics, and take a hard look at the requirements for ensuring continued success in the more cooperative '90s. How is one of the country's most dynamic and influential entrepreneurs responding to the changing environment? Mr. Pickens will address the implications of this potent and far-reaching transformation.

Friday, January 17

8:30am Continental Breakfast

9:00am Opening Remarks

9:05am INDUSTRIAL POLICY: CAN EVERYONE BENEFIT?

Should the US government take its hands out of the nation's business, leaving American competitiveness to the invisible hand of the free market? Or, with other nations identifying and supporting their key industries, would that spell demise? There are still plenty of defenders of both sides of the argument, but there are increasing examples of a truce in the debate as partnerships form between government and business. How can federal policy foster economic growth and competitiveness? What steps are being taken toward that end? What can business leaders do to ensure that competent government and effective enterprise are complements not adversaries?

Susan Schwab, Assistant Secretary of Commerce; Director General, U.S. & Foreign Commercial Service
Joseph I. Lieberman, US Senator (CT)

10:15am Refreshment Break

10:45am CORPORATE GOVERNANCE:
HEALING THE RIFT BETWEEN OWNERS AND MANAGERS

Hostile takeovers and LBOs ignited the debate between senior executives and influential shareholders. Yet today, with cooperation, alliances, and partnerships emerging as the favored approaches to achieving corporate success, the tensions over corporate governance still run high. What is being proposed to ensure that owners and managers work in tandem?

11:30am Forum sessions conclude.
Delegates are invited to participate in golf and tennis tournaments.

*Any suggestions, comments, or questions about this program may be directed to
the editorial director of The 1992 Business Week Presidents' Forum:*

*Ms. Heidi Lorenzen
Business Week Executive Programs
telephone: (212) 512-6251
facsimile: (212) 512-6909*

BusinessWeek

Executive Programs

SPEAKERS AT RECENT BUSINESS WEEK EVENTS

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Hon. Lamar Alexander, US Secretary of Education
Chuck Ames, Chairman and Chief Executive Officer, Uniroyal Goodrich Tire Co.
Bruce P. Bickner, Chairman and Chief Executive Officer, DEKALB
James Brady, former White House Press Secretary
Dr. Zbigniew Brzezinski, former National Security Advisor
Frank C. Carlucci, former U.S. Secretary of Defense
William E. Colby, former director, U.S. Central Intelligence Agency
Richard L. Crandall, President and Chief Executive Officer, Comshare, Inc.
Admiral William J. Crowe, Jr., Eleventh Chairman of the Joint Chiefs of Staff, U.S. Dept. of Defense
Carlo De Benedetti, Chairman and CEO, The Olivetti Group
Robert L. Dilenschneider, President and Chief Executive Officer, Hill and Knowlton
Elizabeth Dole, Twentieth U.S. Secretary of Labor
Robert Dole, U.S. Senator (R-Kansas)
Pierre S. (Pete) du Pont, former Governor of Delaware
George M.C. Fisher, President and Chief Executive Officer, Motorola Inc.
Gerald Ford, 38th President of the United States
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BusinessWeek

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Fax Cover Sheet

BW Fax# 212/512-6909

To: DR. ALLAN BROMLEY, Assistant to the
President for Science and Technology

Fax #: 202-395-3261

From: JOHN W. PATTEN, Publisher
Business Week

Date: October 22, 1991

of pages including cover page: 8. Please call 212/512-2713 if all pages are not received.

Memo:

Regarding The 1992 Business Week Presidents' Forum

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FROM: CHENEY, David W.: COUNCIL ON COMPETITIVENESS

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 11/04/91

SUBJECT: A THANK YOU LETTER FOR DR. BROMLEY'S ACCEPTANCE OF
HIS INVITATION TO BE A SPEAKER IN THE
"COMPETITIVENESS AND AMERICA'S FUTURE" SERIES.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

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

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Council on Competitiveness

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November 4, 1991

NOV 6 A 9:05

The Honorable D. Allan Bromley
Assistant to the President for
Science and Technology
The Old Executive Office Building
17th and Pennsylvania Avenue, N.W.
Washington, D.C. 20506

Dear Dr. Bromley:

Thank you for your letter of October 21, 1991 accepting our invitation to be a speaker at the March 2, 1992 lecture in the series we are sponsoring with the Smithsonian Institution on "Competitiveness and America's Future." I am delighted that you will be able to participate (subject, of course, to Presidential scheduling).

Although we did not make the initial deadline for the Smithsonian's course catalog, we will include you in subsequent announcements. We will send you further information on the location and audience for the lecture in coming weeks. I look forward very much to seeing you on March 2nd.

Sincerely,

David W. Cheney
David W. Cheney
Senior Associate

DC/kdg

November 11, 1991

COLORADO SCHOOL OF MINES

GOLDEN, COLORADO 80401

303/273-3604

FAX 303/273-3278

The Honorable D. Allen Bromley
Assistant to the President for
Science and Technology
17th and Pennsylvania Avenue Northwest
Washington, D.C. 20506

Dear Dr. Bromley:

As Chairman of the Materials Industry Committee of the Colorado GEM Network, I would like to invite you to be our dinner speaker at a major event for professionals in the Colorado materials industry. This event, our First Regional Materials Network Meeting, is planned for April 9, 1992, 6:30 P.M. at the new Colorado Convention Center, Denver, Colorado.

The Colorado GEM Network is an organization which was initiated to position Colorado as the center for earth-resources and materials activities in business, education and research. While designed in part to encourage new businesses to relocate to Colorado, GEM also serves to increase the effectiveness of its members by creating networks for education, information exchange, technology transfer, business promotion and industry development.

Representatives of Colorado chapters of over fifteen engineering and professional societies are cooperating in organizing this event, which will bring together for the first time ever the members of those organizations in a combined meeting for the consideration of common issues. These people are the working engineers and scientists who are concerned about the health of Colorado and the materials industry.

The afternoon will begin with presentations by several leading experts in Colorado-based companies in various segments of the materials industries. Also included will be round table discussions focusing on future opportunities in the materials industries represented by the aerospace, electronics, metals, and service sectors. The goal is to highlight the active role Colorado industry plays in these areas, to showcase Colorado, and to explore future trends.

The dinner segment will also draw those who are unable to participate in the afternoon activities. Attendance is expected to be several hundred. The audience will consist primarily of engineers and scientists from both industry and academia, but also will likely include people from the business community. We will be inviting Governor Romer, a strong supporter of the Colorado GEM Network, to participate in this evening program, as well.

EXECUTIVE PERSONNEL

George S. Ansell, Chairman
David L. Olson, Interim Director
Claudia Gordon, Interim Coordinator

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The focus of this conference is on major trends in materials science and technology in America and, specifically, Colorado. We are aware of government's efforts to chart a direction with regard to strategic technologies important to this country, with materials and manufacturing technology being a key area of focus. We believe that Colorado has been a contributor to this technology and its future role can be even greater, through both academia and the industrial sectors.

As the dinner speaker, your views on the subject of critical technology focus and government's role in same would be of major interest. We know this is a controversial issue but would love to hear your views.

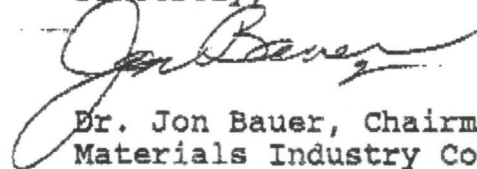
We are excited about this event and what it will mean to the people of Colorado. Your participation would mean a great deal to those who are working hard to create and maintain standards of excellence in the Colorado materials community.

If possible, we would hope to have your response to this request by November 30, 1991.

Any questions can be directed to me at the phone number given below or to Claudia Gordon, Interim Director of the Colorado GEM Network, (303)273-3787 (letterhead address).

Thank you very much for your consideration.

Sincerely,



Dr. Jon Bauer, Chairman
Materials Industry Committee
Colorado GEM Network
(303)978-5019



COLORADO SCHOOL OF MINES
Golden, CO 80401

Colorado GSM

*****Facsimile Cover Sheet*****
Fax: (303)273-3278

DATE: 11/18/91

ATTENTION: Marian

FAX #: 202-395-3261

Total pages including cover sheet: 3

From: Claudia Gordon Phone 303-273-3787
Acct # 6-32063-4560

Message:

In case of difficulty in receiving portions of this transmission,
please call (303)273-3000.

TYPE: INVITATION-SPEECH

DOCUMENT NUMBER: 9123464

SPEECH: YES NO

FROM: LUJAN, Manuel: The Secretary of the Interior

DATE OF EVENT: 11/14/91

LOCATION OF EVENT:

TIME OF EVENT: 11:45

SUBJECT: INVITATION TO LUNCH AND TO GIVE YOUR VIEWS ON HOW
EXISTING AND NEW SCIENCE & TECHNOLOGY POLICIES CAN
IMPROVE WORLD COMPETITIVENESS OF BASIC INDUSTRIES
SUCH AS MINERALS AT THE FIRST NATIONAL MINERALS
POLICY FORUM.

RSVP: 08/28/91

CONTACT PERSON: GEORGE WHITE

CONTACT NUMBER: 202/634-1174

INVITATION ACCEPTED? YES NO

COPIES TO: Steve Olson
NCMC
INDUSTRIAL

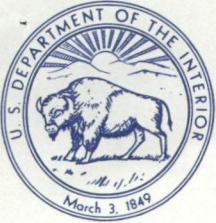
REMARKS:



DATE OF LETTER: 08/13/91

DATE RECEIVED: 08/14/91

FILE: P-CABINET MEMBER*INVITE-SPEECH



THE SECRETARY OF THE INTERIOR

WASHINGTON

August 13, 1991

Honorable D. Allan Bromley
Assistant to the President for Science and Technology
Office of Science and Technology Policy
Old Executive Office Building
17th Street and Pennsylvania Avenue, NW.
Washington, D.C. 20500

Dear Dr. Bromley:

To promote a better understanding of the minerals industry, the Department of the Interior is convening the first National Minerals Policy Forum to bring together the leaders of industry and Government to discuss various issues and trends. We intend to use the results of this Forum to better shape Interior Department minerals programs and to help develop an overall administration minerals policy.

We are currently developing the agenda and inviting speakers for the Forum to be held in Washington, D.C., on November 4, 1991. I would like to invite you to join us for lunch and to give us your views on how existing and new science and technology policies can improve world competitiveness of basic industries such as the minerals.

I hope your schedule permits you to accept this invitation, and I look forward to your presentation. The Bureau of Mines is coordinating the Forum for the Interior Department. A draft agenda is enclosed, and a final agenda and other relevant items will be mailed to you closer to the Forum date. George White at the Bureau (202-634-1174) is available to work with your staff to prepare for the Forum and to answer any questions.

Sincerely,

Manuel Lujan Jr.

Enclosure

NATIONAL MINERALS POLICY FORUM
-Advancing the Industry-

Tentative Agenda

As of August 12, 1991

November 4, 1991

- 8:30 am Welcoming Remarks and Introductions
- *TS Ary, Director, Bureau of Mines*
CONFIRMED
- 8:45 am Keynote Address
- *Manuel Lujan, Jr., Secretary of the Interior*
CONFIRMED
- 9:30 am Barriers to Cooperation Between Industry and Government
- *Richard Osborne, Chief Executive Officer, ASARCO Inc.*
CONFIRMED
- 10:15 am U.S. Industrial Competitiveness
- *Allan B. Hubbard, Director, Council on Competitiveness, Office of the Vice President*
INVITED
- 11:00 am The Effect of International Events on Minerals Policies
- *Sir Ian MacGregor, Partner, McFarland Dewey & Company*
CONFIRMED
- 11:45 am - 1:00 pm Lunch
Luncheon Speaker - *D. Allan Bromley, Assistant to the President for Science and Technology*
INVITED
- 1:00 pm Differences in Management and Policy Perspectives--Industry and Government
- *Frank A. Bracken, Deputy Secretary of the Interior*
CONFIRMED
- 1:30 pm New Environmental Legislation - Regulatory and Enforcement Policies
- *Don R. Clay, Assistant Administrator for Solid Waste and Emergency Response, Environmental Protection Agency*
INVITED
- 2:15 pm The Mining Law - Point and Counterpoint
- *James McClure, Former United States Senator, Idaho*
CONFIRMED
- *Stewart Udall, Former Secretary of the Interior*
INVITED
- 3:15 pm Opportunities for Basic Industries in the World Economy
- *Robert Mosbacher, Secretary of Commerce*
INVITED
- 4:00 pm Science and Engineering Policies to Improve Competitiveness in Mining and Minerals
- *Arthur Brown, Chairman of the Board, Hecla Mining Company*
CONFIRMED
- 4:45 pm Closing Remarks
- *TS Ary, Director, Bureau of Mines*
CONFIRMED
- 5:15 pm Reception in the lobby of the new Bureau of Mines headquarters

DRAFT

DRAFT

"INVITATION FOR DR. BROMLEY"

TYPE: INVITATION

DOCUMENT NUMBER: 9124685

ORIGINATOR: 02

SPEECH: YES NO

FROM: PRESCOTT, John E: SOCIETY OF COMPETITIVE
INTELLIGENCE PROFESSIONALS

DATE OF EVENT: 03/26/92 THRU: 03/27/92
TENTATIVE DATES:

LOCATION OF EVENT: WASHINGTON D.C.

TIME OF EVENT:

SUBJECT: AN INVITATION TO SPEAK AT THEIR ANNUAL CONFERENCE
REGARDING TECHNOLOGY'S ROLE IN COMPETITIVENESS.

RSVP: 11/20/91

CONTACT PERSON:

CONTACT NUMBER:

INVITATION ACCEPTED?

YES

NO

COPIES TO: INDUSTRIAL

REMARKS:

CLOSED

DATE OF LETTER: 11/01/91

DATE RECEIVED: 11/06/91

FILE: P-INVITATION-SPEECH



4685

Society of Competitive Intelligence Professionals

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Leila Kight
David G. Conley
Roberta Brody
Bob Margulies

November 1, 1991

OFFICE OF T
DIRECTOR

Dr. Allan Bromley
Assistant to the President for Technology Policy
Office of Science and Technology Policy
c/o William Wyman
Old Executive Office Building, Room 358
Washington, DC 20506

Dear Dr. Bromley:

On behalf of the Society of Competitive Intelligence Professionals (SCIP), it is my pleasure and honor to invite you to be a keynote speaker at our annual conference. The theme of the conference is global dimensions of competitive intelligence. The conference will be held in Washington, DC during March 26-27, 1992.

SCIP is the leading international professional association devoted to the professionalism of competitive intelligence. Your leadership role in the area of technology is consistent with our goals. I strongly feel that our members and their firms need to be more aware of the issues related to technology and its role in competitiveness. You can be a key catalyst in the process. For these reasons, I know of few people who would be a more appropriate keynote speaker at our conference.

I have enclosed several brochures on SCIP including our recent fall conference brochure which centered on technology. I am available to answer any questions you might have. I will be looking forward to your positive reply.

Sincerely,

John E. Prescott
President

JEP:lda

Enclosures

**Society of Competitive
Intelligence Professionals**
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University of Pittsburgh

John E. Prescott, Ph.D.

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Society of Competitive Intelligence Professionals

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Society of Competitive Intelligence Professionals

Society of Competitive Intelligence Professionals

Membership Survey

Who We Are, What We Do

March 1991

SCIP: Who We Are, What We Do

John Prescott and Craig Fleisher
University of Pittsburgh

(Presented at the SCIP Annual Meeting, San Francisco, CA, April, 1990)

The SCIP questionnaire was developed through multiple means:

- A review of the CI literature highlighted many issues.
- Several practitioners provided valuable insights and suggestions for the questions and the format.
- Mary Brock, Bob Margulies and John Prescott made several questionnaire drafts.
- The entire board of SCIP provided feedback on the questions and format.

The questionnaires were completed and returned indicating a 43% response rate. Three hundred and forty seven questionnaires were from practitioners. This sample of practitioners is presented in this questionnaire summary.

SCIP's Board recognizes that the statistics are of the most basic form. For most members, this provides an overview which can allow comparisons to their own practices and insights into general trends.

Part A: Background information

■ The type of business or organization represented:

Information	
Consumer products	14%
Industrial products	38%
Transportation	1%
Public utilities	5%
Finance/banking/real estate	3%
Information	4%
Service	5%
Education	1%
Hospital/health care	3%
Consulting	4%
Communications	9%
Insurance	4%
Other	9%

■ Organizational size (parent or division) in total annual sales:

Millions of dollars	
Under 25	6%
25 - 50	3%
51 - 100	2%
101 - 250	9%
250 - 500	9%
501 - 750	4%
751 - 1,000	9%
Over 1,000	52%
Not applicable/private	5%
(Average = 501 - 750)	

Spring 1991

■ Number of years involved with CI:

Years	
Less than one	11%
1-3	41%
4-5	21%
6-10	16%
11-15	7%
Over 15	4%

■ Job title:

Manager	41%
Analyst	14%
Senior analyst/specialist	7%
Director	5%
Supervisor	4%
Other	20%

■ Area of work:

Competitive intelligence or analysis	26%
Market planning or research or analysis	18%
Information center or services	5%
Strategic planning	7%
Business development	4%
Product planning	3%
Other	37%

■ Report to:

Manager	32%
Director	27%
Vice president	15%
Other	26%

■ Area of superior's work:

Strategic planning	21%
New business development	7%
Market research/planning	23%
Competitive intelligence	6%
Operations	3%
Other	40%

■ Time spent on competitive intelligence activities:

Under 33%	44%
34 - 67%	19%
Over 67%	38%
(Average - 50% for 340 respondents)	

■ **Salary range:**

Under \$20,000	0%
\$20,000 - 29,999	4%
\$30,000 - 39,999	19%
\$40,000 - 49,999	21%
\$50,000 - 59,999	22%
\$60,000 - 69,999	12%
\$70,000 - 79,999	8%
\$80,000 - 89,999	7%
Over \$90,000	6%

(Note: In cross-table analysis, salary was not related to (1) % of workday devoted to CI, (2) educational background, (3) years of experience in CI, (4) location in organization, and (5) organization size.)

■ **Educational background:**

High school	1%
Some college	4%
Associate degree	2%
Bachelor	29%
Master	59%
Ph.D.	6%

■ **Presently enrolled in a degreed program** (either undergraduate or graduate), continuing education, or university executive education courses:

Enrolled in degree program	12%
Continuing education course	31%
University executive education	11%

■ **Major course(s) of study:**

	Undergraduate	Graduate
Business	27%	60%
Liberal arts	31%	7%
Science	14%	9%
Engineering	16%	4%
Other	12%	20%
Sample size	337	242

■ **Areas where training would be helpful in carrying out CI responsibilities:**

	Mean score
Identifying user needs	4.6
Data collection	4.8
Data analysis	5.4
Data base utilization	4.6
Written presentations	3.7
Oral presentations	4.0
Managerial aspects of CI	4.8
MIS design and use	4.6
Strategic planning	5.2
Gathering international CI 5.1	

(1 = not very helpful, 7 = very helpful)

■ **Organization has a formal code of ethics for employees:**

Yes	82%
No	14%
Don't know	4%

■ **Organization has a formal code of CI ethics:**

Yes	30%
No	64%
Don't know	6%

■ **Regional chapter membership:**

Western	17%
Central	20%
Southeast	15%
Northeast	27%
Don't know	21%

■ **Preferred month for SCIP annual meeting:**

March	19%
April	29%
May	18%
No preference	34%

■ **Preferred month for SCIP Fall meeting:**

September	15%
October	42%
November	15%
No preference	28%

■ **Membership in other professional organizations:**

	Number
Planning Forum	51
American Management Association	61
American Marketing Association	64
Strategic Management Society	5
Special Library Association	54
Other	90

Notes: (1) Special Library Association members have above average years of experience in CI and more likely to have Masters degrees.

(2) American Marketing Association members tend to have 4-10 years of experience in CI and work in firms that have sales in the \$100-150 million range.

(3) Members of American Management Association have the highest percentages with their last degree at the Bachelor's level.

(4) Planning Forum members are likely to have Master's degrees, work in firms that are large, and have above-average experience in CI.

Part B: Organizational CI background

■ **Age of organized CI function:**

Years	
Under 1	22%
1-3	38%
4-5	19%
6-10	14%
11-15	2%
Over 15	5%

■ Number of people:

	Average
Professional staff – full time	5
Professional staff – part time	1
Secretarial/clerical	1-2

■ Organizational location and other CI units:

Corporate planning group	22%
Divisional planning group	13%
Business unit planning group	8%
Marketing department	20%
Market research	13%
Sales	1%
Finance	1%
Library	8%
Independent CI unit	3%
Other	11%

Notes: (1) On the average, there are 2 other locations for CI.

2) Extent of communications between units on a 7-point scale where 1 = extensive communications and 7 = no communications is 4.2 for the 248 respondents.

(3) 133 respondents indicated a centralized CI unit while 171 indicated no central centralized CI unit.

■ Areas CI activity impacts:

	Average Score	CI has Helped Considerably (6 or 7)	Uncertain of CI Effect
Integration of diverse ideas	4.2	14%	33%
Ability to anticipate surprises	4.5	20%	20%
Identify new business opportunities	4.6	27%	15%
Sharing your ideas	4.8	31%	14%
Improvement of manager's analytical capabilities	4.1	16%	21%
Increase revenues and/or profits	4.0	8%	39%
Improved market position	4.3	15%	35%

(1 = no help, 7 = has helped considerably)

■ Three most important functions or services CI program performs:

Maintain general overall awareness	84%
Provide input for planning	68%
Special project assignments	57%
Identify new opportunities	32%

■ CI budget:

Average	\$ 316,210
Minimum	\$ 90,000
Maximum	\$4,000,000

(Number reporting 205)

■ Budget allocation:

Salaries	48%
Clerical support	6%
Operating supplies/equipment	5%
Training/seminars/meetings	5%
Travel	8%
Outside services/consulting/contract research	14%
Dues/subscriptions	7%

■ Change in 1990 over 1989 CI budget:

Increase	39%
Decrease	14%
Stay same	38%
Don't know	9%

■ Timeliness of CI to decision makers:

The mean was 5.0 where 1 = not very timely and 7 = very timely.

■ Value of CI in organizations:

The mean was 4.8 where 1 = of little value and 7 = great value.

Part C: CI unit mission

■ Motivation of CI your unit:

Informational	45%
Offensive	26%
Defensive	29%

(Respondents allocated 100 points across the three statements.)

■ Time spent during a typical CI assignment:

Planning	13%
Collecting	36%
Analysis	28%
Presentation	16%
Evaluation	5%
Other	2%

■ CI program is primarily:

Project-based	50%
Comprehensive	50%

(Competitive intelligence programs can be characterized as comprehensive or project-based. Comprehensive programs tend to provide an ongoing flow of interrelated intelligence for a set of industries or competitors. Project-based programs tend to focus on individual projects which have definite beginning and ending points. The set of projects may or may not be interrelated.)

■ Orientation of CI unit:

Tactical	48%
Strategic	52%

(Tactical decisions are those that are oriented toward implementing a current strategy. Strategic decisions are oriented toward assessing or changing a business strategy.)

▪ **Three primary users of CI outputs:**

Marketing	83%
Corporate	70%
Sales	41%
R&D	32%
Other divisions	25%

▪ **CI activities used primarily by upper or middle management:**

Upper management	38%
Middle management	26%
Both	36%

Part D: Sources of competitive intelligence

▪ **Main problems with CI sources:**

Finding information on privately-held firms	62%
Finding information on divisions	59%
Obtaining information on regular basis from individuals within organizations	41%
Finding information on foreign-based firms	41%
Verifying accuracy of information	31%
Finding timely information on new product introductions	23%

▪ **Extent CI unit uses methods for collecting information:**

	Average
Trade journals	5.7
External on-line data bases	5.4
Industry experts	5.0
External hard copy documents	5.0
Trade organizations	4.9
Other employees in organization	4.7
Trade shows	4.4
Internal documents	4.4
Sales representatives	4.3
Internal databases	4.2
Telephone interviews	4.0
Government records	3.8
Direct observation	3.6
Competitors (contact directly)	3.4
Clipping services	3.3
Personal face-to-face interviews	3.2
Electronic/voice mail	3.1
Product purchasing	2.9
Freedom of Information Act	2.5
Focus groups	2.3
Case studies	2.1
Mail questionnaires	2.0

(1 = not used, 7 = used extensively. Listed in order of average response. N = 334)

Part E: Types of intelligence monitored

▪ **Frequency of monitoring:**

Continuous:	Marketing/sales
	Financial
	Technological developments
	Acquisitions and divestiture activities
	General industry trends

Periodic:	Distribution channels
	Human resources
	Manufacturing operations
	Customers
	General administrative services
	Services provided
	Public and international goals and assumptions
	Potential competitors
	Individual divisions
Ad Hoc:	Supplier and procurement practices

▪ **Extensiveness of analysis:**

Use as collected:	Supplier and procurement practices
	Distribution channels
	Human resources
	General administrative structure
Simple analysis:	Marketing and sales
	Financial
	Technological developments
	Manufacturing operations
	Customer analysis
	Services provided
	Public and international affairs
	Organization goals and assumptions
	Individual divisions
Extensive analysis with implications:	Acquisition and divestment activities
	General industry trends
	Potential competitors

▪ **Analytical techniques used:**

	Average
Strength and weakness analysis	5.3
Financial statement analysis	4.6
Industry segmentation	4.2
Technology assessment	4.1
Merger and acquisition analysis	4.0
Issue analysis	3.7
Benchmarking	3.6
Critical success factors	3.6
Management profiles	3.5
Industry scenarios	3.4
Synergy analysis	3.3
Portfolio analysis	3.1
Reverse engineering	3.1
Strategic groups	2.8
Multipoint competition	2.7
Model of industry attractiveness	2.7
Value chain	2.4
Divestment analysis	2.4
Experience curves	2.4
BCG industry matrix	2.4
Value-based planning	2.3
Political and country risk analysis	2.2
Stakeholder and assumption analysis	2.1
PIMS	1.8

(1 = not used, 7 = used extensively)

Part G: Dissemination of CI

▪ Use and effectiveness of dissemination networks:

Average Use	Method	Average Effectiveness
5.6	Custom reports	5.5
5.5	Personal communication	5.5
5.2	Competitor files	4.3
4.9	Memos	4.9
4.8	Presentations	5.2
3.8	Computerized data bases	3.5
3.5	Newsletters	3.4
3.0	Regular meetings	3.2
2.2	CI seminars	2.5
1.8	Bulletin boards	1.8
1.7	Special retreats	2.0

(1 = not used, 7 = used extensively/effective. Listed in order of use. N = 260)

Part H: General issues with CI

▪ Issues which represent CI problems:

	Average Score
Managers have problems integrating CI	5.0
Limited interaction between gatherers and users	4.6
Shortage of personnel in CI	4.8
No champion	4.6
Legal/ethical issues	2.6
Limited feedback provided to CI	4.8
Internal political problems	4.6
No incentives to share internal information	5.0
Managers are unaware of our purpose	4.4
Managers do not use our outputs	4.1
Difficulties in evaluating effectiveness	5.3
Do not communicate directly with top management	3.5
Our output is under-utilized	4.5

(1 = strongly disagree, 7 = strongly agree) α

Know Thy Competitors

As global economic competition increases, your role in assisting your corporation to better understand its competitors, competitive environment and internal strengths and weaknesses has never been more important. Tomorrow's top performers are now racing to build core competencies, drastically reduce product development and shipping times, increase total quality by incredible factors and gain uncanny advantage through apparent overnight alliances and partnerships.

Today's corporate executives and business unit managers cannot afford to be caught in a vacuum of incomplete, or worse, faulty information about where their competitors plan to go or how today's non-competitor is quickly (and quietly) gearing up to win your market share. Instantaneous global communications are completely changing the rules of how the game is played

Over the past few years an entirely new base of knowledge (principles, practices and techniques) has come into focus which allows corporations to understand how and why their competitors behave as they do, and more importantly, to project the future significance of current behaviors. We are finally beginning to understand that winning today merely allows us the opportunity to compete tomorrow.

The Society of Competitive Intelligence Professionals (SCIP) was formed for the specific purpose of assisting members to enhance their firms' competitiveness through a greater—yet unequivocally ethical—understanding of competitor behaviors and future strategies as well as the market dynamics in which they do business. SCIP assists its members by enhancing skills to:

- Best identify and assess the strengths and weaknesses of competitors through the most recent advances in data gathering and analytical techniques.
- Identify current, emerging and potential competitors and project strategies that these competitors might pursue.
- Communicate analytical implications concerning competitiveness for action.
- Sharpen businesses' competitiveness through greater "intelligence."

Most importantly, membership in SCIP provides you with the knowledge of how to incorporate the results of competitive assessment into senior level decision making—truly bridging the gap between data gathering and analysis, decision making and organizational success. Your membership will increase the effectiveness of the strategic planning process while providing an ongoing "early warning" system for threats and opportunities facing your firm as well as those of your competitors.

Founded in 1986, SCIP is now recognized as the pre-eminent membership association of its kind. Our membership is inclusive; we recognize that key decisions related to corporate competitiveness are most effective when arrived at through the best efforts of entire corporate and business unit teams. We support insightful decision making at the CEO level based on strategic information which may have originally been accessed through executives, market research managers, data managers, strategic planning or corporate development.

Our diversity and inclusivity are mirrored in the major industries represented in our membership, as well as the vendor companies serving the competitive intelligence and analysis function. In fact, of the Fortune 50, over half are currently in our membership base. Our international, national and regional programming includes presentations by members of these corporations, consulting firms and leading schools of business as well as other creative and forward thinking individuals in this critical field.

Managed by a Board of Directors elected by the membership and a full-time administrative staff, SCIP realizes that no one corporation, consulting firm or business school will ever be able to provide all the answers, all the time, on relevant subjects. Through our conferences, seminars and publications, SCIP provides businesses with effective means by which to discern complex issues dealing with corporate competitiveness. Our primary thrust is to continually increase your corporate competitiveness through exposure to the latest advances in competitive intelligence and assessments—ultimately assisting you to facilitate better corporate-wide decision making.

Society of
Competitive
Intelligence
Professionals

Working For You

Our office staff and network of volunteers are committed to introducing you to the right people, ideas and information. Your membership benefits include:

Publications

- An annual subscription to *Competitive Intelligence Review*—the world's leading publication articulating state-of-competitive intelligence issues and answers in the area of competitiveness gained through competitor assessment. Our authors present the most advanced research and thinking. As our membership is primarily composed of business practitioners, academics and the vendor community which serves them, our case studies provide practical field applications of advanced theory—your real clues to today's "best practices."

- Other publications ensure that our membership is always kept in the forefront of competitive performance through competitive intelligence and assessment. We continually strive to present case applications, conceptual and empirical information on topics such as assumption and scenario analysis, benchmarking and future challenges.

Conferences and Seminars

- Our major **Annual Conference** is the single largest gathering focused on the benefits of corporate competitiveness gained through competitive assessment and business intelligence. This multi-day international meeting is designed to serve the broad needs of our membership. Specifically designed tracks allow for peer-to-peer senior executives interaction on key business issues while receiving briefings on the latest analytical and technological advances available for the competitive intelligence process. Other tracks provide strategic planning, marketing and sales audiences with the opportunity to focus on field applications of competitive assessment. The meeting also provides those new to the field with an introduction to both basic

and sophisticated data gathering and assessment techniques.

- Throughout the year, City/Area meetings also reflect the broad diversity of our membership and the companies they represent.

Recent conferences have included:

- Learning to Think Like Your Competitors
- Europe 1992: Implications for the United States
- Analytical Tools and Techniques for Competitor Intelligence and Analysis
- Global Competitive Intelligence—Gaining Advantage Through Insight.

All conferences, seminars and meetings are available to SCIP members at reduced rates.

A Local Focus

To ensure timely and easy access to our network, SCIP is organized around city chapters. Current chapters are located in Atlanta, Boston, Dallas/Ft. Worth, Detroit, Los Angeles, Minneapolis, New York, St. Louis, San Francisco and Washington, DC. Expansion of the city chapter program is ongoing. Regularly scheduled city meetings are held throughout the year.

Membership Networking

Membership is a strong networking tool for peer interaction. Often, our network of members is aware of positions which need to be filled and professionals searching for new challenges. SCIP facilitates such search activities by devoting a special section of *Review* to linking qualified professionals with new opportunities. Through this channel employers can actively reach the largest pool of qualified candidates to fill strategic intelligence positions.

Code Of Ethics

- To continually strive to increase respect and recognition for the profession on local, state and national levels.
- To pursue his or her duties with zeal and diligence while maintaining the highest degree of professionalism and avoiding all unethical practices.
- To faithfully adhere to and abide by his or her company's policies, objectives and guidelines.
- To comply with all applicable laws.
- To accurately disclose all relevant information, including the identity of the professional and his or her organization, prior to all interviews.
- To fully respect all requests for confidentiality of information.
- To promote and encourage full compliance with these ethical standards within his or her company, with third party contractors and within the entire profession.

Please call for more information:

Society of Competitive Intelligence Professionals
818 18th Street, NW, Suite 225
Washington, DC 20006
(202)223-5885
Fax (202)223-5884



Society of Competitive Intelligence Professionals

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Membership Application

- I hereby apply for membership in the Society of Competitive Intelligence Professionals. I understand that my membership covers SCIP publications as well as advance notification of programs and products.

Name	Date
Title/Position	
Company	
Address/Box	
City/State/Zip	
Telephone	
Industry	
Areas of Interest	
Special Expertise	

Do you know other competitive intelligence professionals who would like to know about SCIP?

Name
Title/Position
Company
Address/Box
City/State/Zip
Industry

Please make your membership check for \$100 U.S. payable to:

Society of Competitive Intelligence Professionals
818 18th Street, NW, Suite 225
Washington, D.C. 20006 (202)223-5885

Where did you hear about SCIP? (check one)

- ☐ Friend/Colleague
- ☐ Publication Which? _____
- ☐ Direct Mail
- ☐ Seminar Which? _____
- ☐ Advertisement Where? _____
- ☐ Newsletter
- ☐ Other _____

9/10

Need comments from
AD's

Copies sent this date!
m

Document Originally
Attached to
Following Page



Society of Competitive Intelligence Professionals

"The next best thing to knowing something
is knowing where to find it."

Dear Colleague:

It's doubtful Samuel Johnson could have imagined the kinds of technology we employ today -- even the familiar technology we take for granted. Johnson's understanding of the value of knowledge, however, is quite evident.

Technology drives industry worldwide, and thus the global economy. Successful firms seek out, evaluate and embrace the appropriate new technologies. Competitor intelligence is a cornerstone of this process, and the Society of Competitive Intelligence Professionals' (SCIP) Fall Conference is the place to be if you're looking to stay up with the latest developments.

The SCIP Fall Conference, a one-day executive briefing, is built around the theme, "Technology Analysis and Its Impact on Competitiveness." Registrants will meet with some of the world's leading authorities on such topics as locating technological data, linking technology to corporate strategy and implementing technology-based competitive strategies.

Take a few minutes right now to read through the detailed program booklet enclosed with this letter. You'll find we've spared no effort in gathering the very finest educators and practitioners available to present this program to you. We've packed the agenda with an enormous amount of subject matter to be covered, but we're assuring registrants that ample time will be reserved to have specific questions answered.

The Society of Competitive Intelligence Professionals was formed for the specific purpose of assisting members to enhance their firms' competitiveness through a greater -- yet unequivocally ethical -- understanding of competitor behaviors and future strategies as well as the market dynamics in which they do business.

Founded in 1986, SCIP is now recognized as the preeminent membership association of its kind, with a worldwide membership of over 1,600. Our membership is inclusive; we recognize that key decisions related to corporate competitiveness are most effective when arrived at through the best efforts of entire corporate and business unit teams.

Time is short. Make plans right away to join us in New York October 20 and 21. A convenient Registration Form is included in the back of the booklet for your use. You'll find helpful travel and hotel information in the booklet as well.

Sincerely,

Morris Blatt

Morris Blatt
Vice President and Program Chair

Board of Directors

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John E. Prescott
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Jack Keating (Nominating)
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Glenn S. Omura (Education & Development: Research Initiatives)
Michigan State University

Maurice Welsh
Pacific Bell

Ex Officio
Bob Margulies (SCIP—Asia TF)
McDonnell Douglas

National Office
Stephanie Savage, Administrative Manager



Society of Competitive Intelligence Professionals

818 18th Street, N.W., Suite 225
Washington, D.C. 20006

(202) 223-5885 ■ Fax: (202) 223-5884

SCIP

**Society of
Competitive
Intelligence
Professionals**

**Fall
Conference**

The Waldorf=
Astoria Hotel
New York City

October 20-21, 1991



Technology Analysis and Its Impact on Competitiveness

The Waldorf=Astoria Hotel
New York ■ October 20-21, 1991

A one-day executive briefing to learn how to:

- Identify and Analyze Technological Data
- Link Technology Analysis and Corporate Strategy
- Design Worldwide Networks for Sourcing Technology
- Build Technology-based Core Competencies

Who Should Attend:

- Corporate, Divisional and R&D Executives
- Strategic and Corporate Planners
- Competitive Intelligence/Competitive Analysis Professionals
- Technology Team/Group Leaders
- Technology, Product/Service & Business Development Executives
- Competitive Intelligence/Competitive Analysis Academics

Conference Registration Fees

Before September 30

- ☐ Member \$400
- ☐ Non-member \$500*
I'm not currently a member of SCIP,
but would like to join right away.
- ☐ Non-member \$675
I'm not a member of SCIP.

Registration form and payment must be postmarked by September 30, 1991, to qualify for this rate.

After September 30

- ☐ Member \$450
- ☐ Non-member \$550*
I'm not currently a member of SCIP,
but would like to join right away.
- ☐ Non-member \$725
I'm not a member of SCIP.

☐ Please send me additional information on membership

* Non-member registration includes annual SCIP membership dues of \$100. Membership in SCIP is individual. If you personally are not a member, please remit the non-member fee. Benefits of membership include a subscription to *Competitive Intelligence Review*, advance notice of national and local programs and other network opportunities.

Registration Form

Name _____

Title _____

Company _____

Business Address _____

City/State/Zip _____

Telephone _____

Do you want your company name on your name badge? ☐ Yes ☐ No

Additional Registrant

Name _____

Title _____

Company _____

Business Address _____

City/State/Zip _____

Telephone _____

Do you want your company name on your name badge? ☐ Yes ☐ No

Please mail registration form and payment to:
Society of Competitive Intelligence Professionals
818 18th Street, N.W., Suite 225
Washington, D.C. 20006

Conference Information

■ Hotel Accommodations

Conference fees do not include hotel accommodations. The Waldorf=Astoria is offering a special rate of \$180 (single/double), excluding applicable taxes. Reservations can be made by calling (212) 872-4630. Please mention the Society of Competitive Intelligence Professionals to receive these special rates. Seminar attendees are encouraged to make their reservations early as these special rates may be unavailable after September 27, 1991.

■ Travel Information

Participants are encouraged to take advantage of special airfares of a 5% discount off any American Airlines published fare in effect when tickets are purchased subject to all applicable restrictions or 45% discount off applicable American unrestricted coach fares in effect when tickets are purchased. Please call 1-800-433-1790 and refer to Star No. S01Z279.

■ Registration/Cancellation Policy

All payments must be in U.S. funds and payable through a U.S. financial institution. Registration forms may be faxed to SCIP. However, to qualify for the "early bird" registration fee, all forms and payment must be postmarked by **September 30, 1991**. All registration fees and forms must be received by **October 11, 1991**. Registrations without checks will not be held beyond that date. Checks received at SCIP without registration forms are automatically mailed back to your accounting office. On-site registrations must be accompanied by payment.

Cancellations prior to the end of business (5:30 EDT) before September 30 will be fully refunded less a \$50 cancellation fee. Cancellations received after September 30 will be subject to a 50% cancellation fee. Cancellations after October 11 or no-shows are non-refundable. To obtain a refund, cancellations must be in writing.

Any registrant whose registration fee is not received by October 11 and does not cancel his/her registration will be billed for the entire amount.

■ Program Questions/Comments

Questions or comments pertaining to this program should be directed to:

Program Chairman: Morris Blatt (908) 221-6180 OR
SCIP Administrative Manager: Stephanie Savage (202) 223-5885

Key Speakers

Thomas Eagar, Professor, Massachusetts Institute of Technology

Richard Elkus, President, Prometrix

Ernest Gilmont, Senior Consultant, Arthur D. Little

Ralph E. Grabowski, Marketing Consultant

Duff Hunt, General Manager of Operations, Chaparral Steel

Clyde Prestowitz, President, Economic Strategy Institute

Edward Roberts, Professor, Massachusetts Institute of Technology

Technology continues to be the driver of competitiveness. New firms emerge from technological progress to create new markets. Successful firms embrace technologies to provide product/service offerings with a competitive edge. Myopic firms focus on short-term fixes and gradually lose their core competencies.

Tomorrow's executives must incorporate world-wide trends in science and technology in developing their strategies and tactics for survival. The potential impact from scientific and technological developments is increasingly global. Locating, analyzing, and acting upon complex and dispersed technological data becomes increasingly difficult.

That's where SCIP's Fall Meeting can play an important role. Our registrants will learn from world renowned experts and competitors about innovative methods for locating technological data, linking technology to corporate strategy, designing networks for sourcing technology, and implementing technology-based competitive strategies.

Agenda

Sunday, October 20

5:00 - 7:30 p.m.	Registration
6:00 - 7:00 p.m.	Opening Reception
7:15 - 9:30 p.m.	Dinner

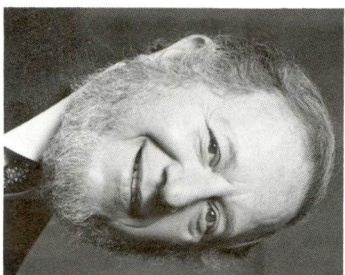
Monday, October 21

7:30 - 8:30 a.m.	Registration/Continental Breakfast
8:30 - 9:00 a.m.	Welcome
9:00 - 10:00 a.m.	General Session
10:00 - 10:15 a.m.	Break
10:15 a.m. - 12:15 p.m.	General Session
12:15 - 2:00 p.m.	Luncheon and Speaker
2:00 - 3:00 p.m.	General Session
3:00 - 3:15 p.m.	Break
3:15 - 4:30 p.m.	General Session
4:30 p.m.	Closing Remarks

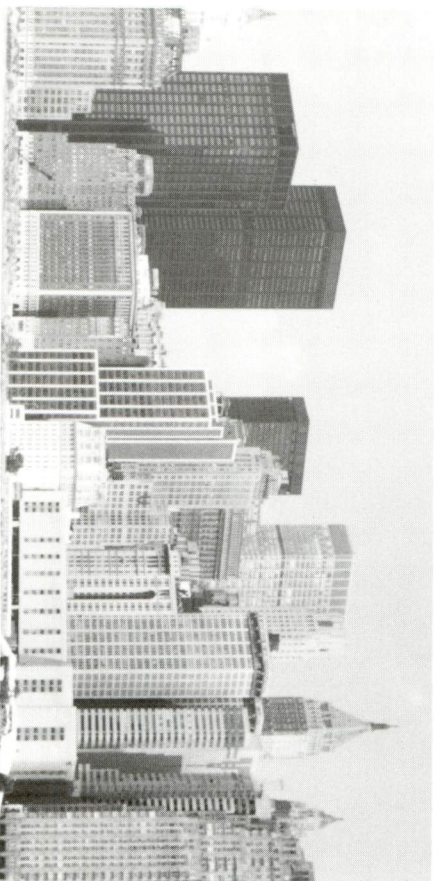
Integrating Technological Intelligence Into Strategy

Edward B. Roberts

*David Sarnoff Professor of Management of Technology
Massachusetts Institute of Technology*



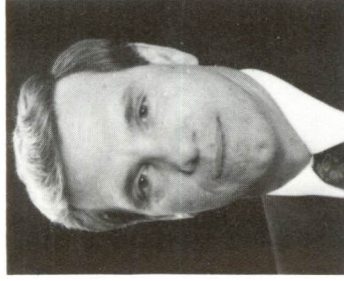
Three key mechanisms can supplement conventional competitor intelligence sources in building the technological side of strategic plans: internal technical/market assessments of competitive product performance, ongoing evaluations by internal "competitor gatekeepers," and insights derived from external lead user/developer networks. Few corporations do any of these systematically. These approaches must be integrated by technology planners into the strategic options considered and the choices made in resource allocation. Dr. Edward B. Roberts chairs MIT's Sloan School Technology Management Group and co-chairs the MIT Management of Technology Program, an executive education Master's degree program for mid-career scientists and engineers. Over the past thirty years, he has become internationally known for his research, teaching and active involvement in many aspects of technology management, including technology-based entrepreneurship, corporate venturing and innovation management. Dr. Roberts is co-founder and chairman of Pugh-Roberts Associates, an international management consulting firm specializing in strategic planning and technology management. He has been a co-founder and/or director of numerous emerging technology companies, including Advanced Magnetics, SoFTech and Tyco Laboratories.



The Recolonization of America

Clyde V. Prestowitz, Jr.

President
Economic Strategy Institute



The Economic Strategy Institute is a private, non-profit research center dedicated to defining a new American agenda for an era in which the United States will face unprecedented economic challenges without the benefit of past superiority in industry, technology and finance. In a recent issue, *Regardie's* magazine called the Institute's founder, Clyde V. Prestowitz, Jr., "one of the most influential people in private Washington." His views are often cited in congressional debates and he is a frequent contributor to major newspapers, magazines and journals. Mr. Prestowitz was formerly senior associate at the Carnegie Endowment and a fellow at the Woodrow Wilson International Center for Scholars, where he wrote his influential book on the U.S.-Japan economic conflict, "Trading Places." This insightful session will focus on one unnerving premise: The loss of technological capability results in dependence and loss of control over our own destiny.

Accessibility of Japanese Science and Technology

Thomas W. Eagar

Richard P. Simmon Professor of Metallurgy
Massachusetts Institute of Technology



In 1984 and '85 Dr. Thomas Eagar served as a Liaison Scientist with the United States Office of Naval Research for the Far East. His assignments took him to Tokyo, Japan, where his work included gathering competitive intelligence from Japanese universities, government research laboratories and corporate research laboratories. Experts continue to stress the importance of a global focus in competitive intelligence—especially when it comes to technology. This session on the Japanese experience will provide some fascinating and valuable insights. Dr. Eagar is currently pursuing research on the chemistry and physics of joining processes as well as manufacturing innovation and management. His work includes, among others, studies of weldability of high strength metals, electronic packaging, arc physics and automation and control of welding processes.

The Strategy of Leverage

Richard J. Elkus, Jr.

Chairman and CEO
Prometrix Corporation

Richard Elkus is Chairman of the Board of Prometrix Corporation, which manufactures equipment for the semiconductor industry. He has served in executive capacities in a number of well known technology-intensive companies. In 1970, while serving as Assistant to the President for the Ampex Corporation in Redwood City, California, Mr. Elkus

headed the team that introduced the VCR to the world. His analysis of the United States' competitive position in the world will include a discussion of the importance of developing *and protecting* intellectual property rights and a sound technological base. How do we currently stack up? Are we performing on a par with companies in other parts of the world? You'll want to come to this session prepared to ask questions about specific challenges you're facing in developing intelligence bases—especially as they relate to global competition.

Technology Intelligence: A Powerful Tool for Decisions and Actions Involving Technology

Ernest R. Gilmont

*Senior Consultant in North American Management Consulting
Arthur D. Little, Inc.*



Technology intelligence is the key link in the chain that connects *external* circumstances and events to *internal* decisions and actions involving technology. Without this linkage, business activities and the outside world proceed along independent and often incompatible pathways. A technology-focused intelligence system not only tracks and anticipates activities of competitors, but can serve as an investment which provides rich returns in the research and development effectiveness across multiple dimensions. Dr. Gilmont will examine these significant issues and draw from lessons learned during work at Arthur D. Little, including a survey of more than 40 corporations in the United States, Europe and Japan to benchmark technology intelligence activities. Dr. Gilmont's prior experience includes more than 20 years in

the chemical and related industries, where he focused on technology, innovative management and implementation.

How to Get Technical Competitive Intelligence

Ralph E. Grabowski

*Marketing Consultant
Andover, Massachusetts*



How do we gather competitive intelligence when it is wrapped in technology? What do we look for? How, exactly, do we get critical information? During this practical session, in which a turnaround of a global high-tech firm is used as an example, you'll learn specific methods for getting technological intelligence. Our speaker, Ralph E. Grabowski, is a marketing consultant for technology-based capital products. He specializes in semiconductor equipment, robotics, automation, software and biotechnology. In his twenty years of marketing experience, Mr. Grabowski has supported the launch of ten companies and more than 50 products throughout the world. When Mr. Grabowski agrees to help a client improve market share, his services include—among other things—market research and customer surveys; analysis of technology trends; new product definition, refinement and market introduction; competitive analysis, pricing and positioning; and sales and marketing automation. His turn around of Becton Dickinson Medical Systems is the featured case study in an MIT course for high technology managers.

THE WHITE HOUSE
WASHINGTON

December 17, 1991

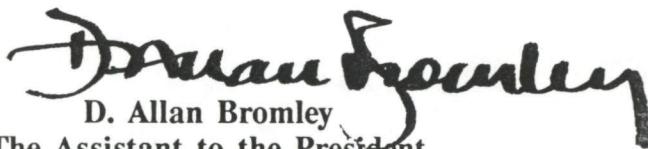
Dear Dr. Prescott:

Thank you for your letter of November 1, 1991, inviting me to be the keynote speaker at your annual conference scheduled for March 26-27, 1992 in Washington, D.C. I apologize for the much belated response.

As much as I would like to join you and your colleagues, that time period is already heavily committed, so I must regretfully decline.

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

Sincerely yours,


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

Dr. John E. Prescott
Society of Competitive Intelligence Professionals
818 18th Street, Northwest - Suite 225
Washington, D.C. 20006

"Document Control"

TYPE: INFORMATION

ORIGINATOR: 02

STATUS C

DOCUMENT NUMBER: 9124622

DIRECTORATE STATUS

FROM: FINNEY, John W.: YALE CLASS OF 1945W

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 10/28/91

SUBJECT: AN APOLOGY REGARDING A SPEECH TO BE GIVEN TO HIS
CLASSMATES.

DIRECTORATE
ASSIGNED: STAFF
ASSIGNED:

ACTION
REQUIRED: STAFF
ACTION:

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

COPIES TO: D. Allan Bromley

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REMARKS: PHONE: EXT:

OSTP RECEIVED: 10/31/91
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New Haven, Conn. 06520-1950

91 OCT 31 AIO: 13
Oct. 28, 1991

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Eugene F. Williams, Jr.

* Member of Class
Executive Committee

Dear Dr. Bromley:

OFFICE OF THE
DIRECTOR

On behalf of my class, I want to apologize to you for standing you up, after you had so kindly consented to talk to our group. Many in our class commented how sorry they were not to have heard from you because they had been told you were a man with interesting thoughts.

As you no doubt are aware, our plans were abruptly changed. We were all assembled in Room 450 awaiting a brief appearance by the President and then you and Ed Dale, when we were all summoned to the State Dining Room to meet with the President and Mrs. Bush. The President talked seriously about current issues and at greater length than we had expected and then invited us all out on to the balcony to watch his departure by helicopter.

Somehow, I have the feeling that the President did not realize that we had not yet heard from you and Ed Dale. In any event, after meeting with the president, it seemed to me it would be anti-climatic to ask my classmates to walk up four stories for further talks.

We did not intend to hurt your feelings, and I hope they were not. You were truly upstaged by the President, and few can use that as an excuse.

I just hope that another opportunity may arise for all of us to hear from you.

Sincerely yours,

John W. Finney
John W. Finney

PS I was particularly interested in hearing from you because as a reporter I covered science advisers from Killian onward. jwf *jwf*

Nov. 4, 1991

Dear John:

Rest assured that I fully understood and applauded your decision not to join The Class of '45 (a vintage class to whom I have previously had the pleasure of speaking) back up to Room 450 EOB.

We all learn quickly to adapt to changes in The President's schedule and I know that The Class enjoys its visit to The White House.

I have thoughtful of you for years; I have read much of your material over the years and enjoyed it! Sincerely,
Barack Obama

"Document Control"

TYPE: INFORMATION DOCUMENT NUMBER: 9124588
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: LEE, Kathryn: CLOSE UP FOUNDATION

TO: DR. D.A. BROMLEY

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 STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

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

COPIES TO: D. Allan Bromley
INTERNATIONAL/POLICY

WHITE HOUSE TRACKING #: CONTACT PERSON:
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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