

Science and Our Expectations:

Bicentennial and Beyond

What have been our expectations for science—from science—and what have they become? To unlock the secrets of nature and of ourselves, to plumb the limits of the universe and unravel the mysteries of the origin of life; perhaps to feed the hungry and heal the sick, or to better understand our way in the world we have made; all of these and many others.

Come join with us in Boston in next our bicentennial year and let us explore science and our expectations. We have a large and richly varied program of some 180 symposia running for a full week (18–24 February) in excellent facilities at the Sheraton-Boston Hotel and the adjoining John B. Hynes Veterans Auditorium in Boston's Prudential Center.

The program considers the past experience, the present realities, and the future possibilities in the *Perspectives on Science*, the *Uses of Science*, and the *Frontiers of Science*. Historical perspectives on the

growth of science from the scientific milieu of the 18th century; cultural perspectives from Latin America, Afro-Americans, England, Japan, and Native Americans; ethical perspectives on scientific freedom and responsibility and values in science and engineering; as well as the perspectives from pedagogy and from the aspirations of those who seek opportunities in science.

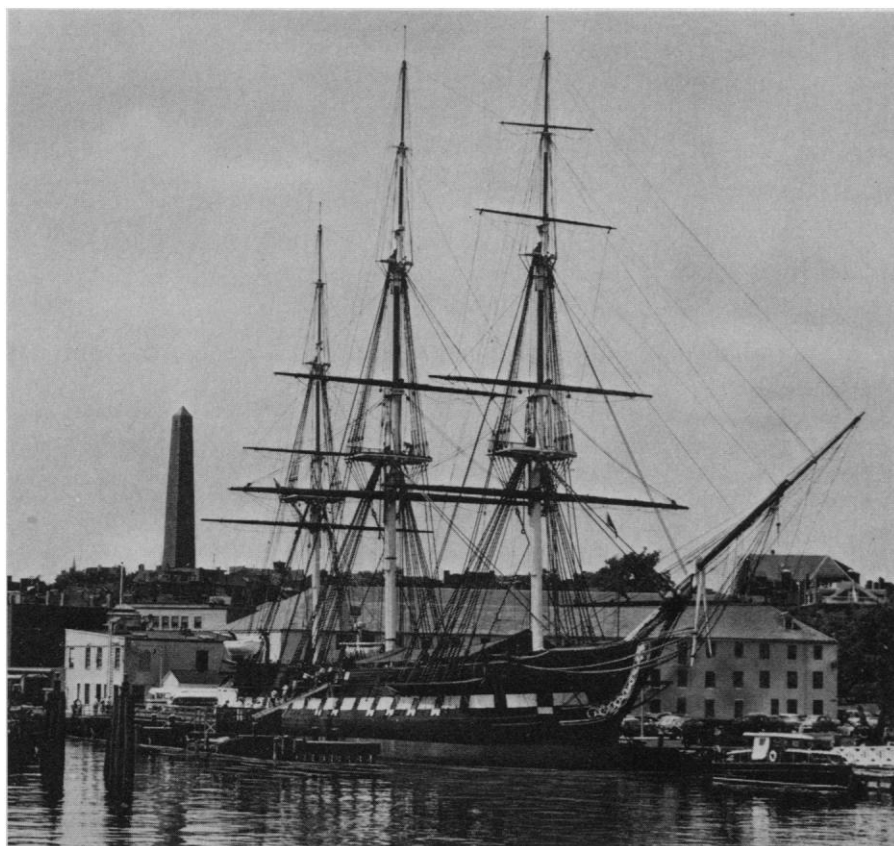
The uses of science for health care, including the problems of the handicapped, occupational health problems, and malnutrition and famine; for food production and use; for improving habitation and our environments for living; for developing resources for energy; as well as the implications of the uses of science and the policy problems which are entailed, will be discussed.

The frontiers of the physical sciences, physics, chemistry, astronomy, and the terrestrial sciences; of the biological sciences; of the medical sciences, infections, neural

functions, cancer, genetics, uses of computers; of anthropology and the social and political sciences, and of the behavioral sciences, including cultural studies, population problems, religion, class equality, crime, child development, intelligence, learning, and much more will be presented.

There will be ten public lectures on a host of interesting topics, including talks by: Derek Bok, J. R. Heirtzler, Gyorgy Kepes, Gerald Holton, Margaret Mead, Joseph Fruton, Andrew Brimmer, and Bradford Washburn, some in the mid-afternoon and others in the evening. We will again have the *Science Film Festival*, augmented this year with a Saturday afternoon of feature films; as well as *Science International*, a greatly enlarged exposition of scientific books and instruments for your perusal.

It is singularly appropriate for our bicentennial-year meeting to be held in Boston, the cradle of the American Revolution and, in a very real sense, the cradle of American science. We have been most fortunate in having an extremely active Boston Advisory Committee under the joint chairmanship of Gerhard Bleicken and Howard Johnson, which has arranged a number of excellent technical programs, tours, and special events, including a special concert by the Boston "Pops" (under the direction of the renowned Arthur Fiedler) for Friday night, and a concert by the New England Conservatory Ragtime Ensemble (playing Scott Joplin under the direction of Gunther Schuller) for Sunday afternoon. In addition, we will have a series of stimulating educational exhibits at the Boston Museum of Science, as well as tours of the very many cultural and scientific facilities in the greater Boston area. More information about these tours and events, and forms for ordering tickets will appear in future issues of *Science*. Meanwhile we urge you to fill out the housing and registration forms and ensure your place at a major scientific and cultural event. —ARTHUR HERSCHMAN



U.S. Frigate *Constitution* (Old Ironsides). [Massachusetts Department of Commerce and Development]



Annual Meeting
Boston
18-24 February 1976



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PRELIMINARY PROGRAM

Headquarters Hotel is the **Sheraton-Boston**, located in Boston's Prudential Center; it accommodates the public lectures, most sessions, the AAAS Office, an Information and Message Center, the Newsroom, the Handicapped in Science Office, and a Meeting Hospitality Room. The second floor of the adjacent **John B. Hynes Veterans Auditorium** contains AAAS Registration and Information, some sessions, *Science International* (exhibits), and the AAAS *Science Film Festival*. See Boston map page 659.

Science and Our Expectations:
Bicentennial and Beyond

Co-Chairmen

Gerhard D. Bleicken
(Chairman of the Board,
John Hancock Mutual Life Insurance Company)

Howard W. Johnson
(Chairman of the Corporation,
Massachusetts Institute of Technology)

Vice Chairmen

Derek C. Bok
(President,
Harvard University)
Mrs. Norman L. Cahners
(Trustee)

Richard H. Bolt
(Chairman of the Board,
Bolt Beranek & Newman, Inc.)
Bradford Washburn
(Director, Museum of Science)

AAAS PUBLIC LECTURES

- **AAAS Public Lecture (18 Feb., 1:45 p.m.).**
Derek C. Bok (President, Harvard University).
Topic to be announced.
- **AAAS Public Lecture (18 Feb., 8:30 p.m.).**
J. R. Heitzler (Chairman, Department of Geology and
Geophysics, Woods Hole Oceanographic Institution).
Exploration of the Mid-Atlantic Rift.
- **AAAS Public Lecture (19 Feb., 1:45 p.m.).**
Speaker and topic to be announced.
- **National Geographic Society Public Lecture (19 Feb.,
8:30 p.m.).**
Bradford Washburn (Director, The Museum of Science,
Boston).
Mapping the Grand Canyon.
- **Phi Beta Kappa Public Lecture (20 Feb., 1:45 p.m.).**
Gerald Holton (Professor of Physics, Jefferson Physical
Laboratory, Harvard University).
The Scientific Imagination.
- **AAAS Retiring President's Public Lecture (21 Feb., 8:30
p.m.).**
Margaret Mead (Curator Emeritus, American Museum of
Natural History).
Towards a Human Scientist.
- **George Sarton Memorial Public Lecture (22 Feb., 1:45
p.m.).**
Joseph S. Fruton (Eugene Higgins Professor of Biochemistry,
Yale University).
The Emergence of Biochemistry.
- **AAAS Public Lecture (22 Feb., 8:30 p.m.).**
Speaker and topic to be announced.
- **AAAS Public Lecture (23 Feb., 1:45 p.m.).**
Andrew F. Brimmer (Thomas Henry Carroll Ford Founda-
tion Visiting Professor, Graduate School of Business Ad-
ministration, Harvard University).
*Income Distribution and Economic Equity in the United
States.*
- **AAAS Public Lecture (23 Feb., 8:30 p.m.).**
Gyorgy Kepes (Director Emeritus, Center for Advanced Vis-
ual Studies, Massachusetts Institute of Technology).
Art of a New Scale.

I. FRONTIERS OF SCIENCE

A. General Interest

- **The Limits of the Universe: Is It Open or Closed? (18 Feb.).**
Arranged by Frank Drake (Cornell University).
- **The Viking Mars Science Experiments: Expectations (19 Feb.).**
Arranged by George W. Morgenthaler (Martin Marietta Corporation, Denver).
- **Extraterrestrial Intelligence (ETI) (20 Feb.).**
Arranged by Carl Sagan (Cornell University).
- **The Frontiers of the Natural Sciences (22 Feb.).**
Arranged by Rolf M. Sinclair (National Science Foundation).
- **The Early History of the Earth and of Life (23 Feb.).**
Arranged by Preston Cloud (University of California, Santa Barbara) and Roger Revelle (Harvard University).
- **Science for the Naked Eye: Or the Physics of Everyday Experience, III (24 Feb.).**
Arranged by Rolf M. Sinclair.

B. Physical Science

- **Progress in the Hydrospheric Sciences in America: A Bicentennial Review (18 Feb.).**
Arranged by William C. Ackermann (Illinois State Water Survey, Urbana).
- **Progress of the Atmospheric Sciences in America: A Bicentennial Review (19 Feb.).**
Arranged by William W. Kellogg (National Center for Atmospheric Research).
- **The Meteorology and Chemistry of the Stratosphere (19 Feb.).**
Arranged by James P. Friend (Drexel University).
- **Coal Science and Our National Expectations (20 Feb.).**
Arranged by Henry A. McGee, Jr. (Virginia Polytechnic Institute and State University).
- **Estuaries, Geophysics, and the Environment (21 Feb.).**
Arranged by Pembroke J. Hart (National Academy of Sciences).
- **The Magnetically Varying Sun and Its Effects on Terrestrial Climate (22 Feb.).**
Arranged by Robert W. Noyes (Center for Astrophysics, Cambridge, Mass.).
- **High Energy Radiation in the Universe, X- and Gamma-rays (23 Feb.).**
Arranged by Paul Gorenstein (Center for Astrophysics, Cambridge, Mass.).

- **Fifty Years of Quantum Mechanics (23 Feb.).**
Arranged by Rolf M. Sinclair (National Science Foundation).
- **Severe Storms and Society (24 Feb.).**
Arranged by Louis J. Battan (University of Arizona, Tucson).
- **Geology of Terrestrial Planets: An Overview (24 Feb.).**
Arranged by Baerbel K. Lucchitta (U.S. Geological Survey, Flagstaff, Ariz.).

C. Biological Science

- **Deterministic Versus Stochastic Models in Biology (19 Feb.).**
Arranged by Daniel L. Solomon (Cornell University) and Charles F. Walter (University of Houston).
- **Communication in Biological Systems (20 Feb.).**
Arranged by Hans Laufer (University of Connecticut) and K. Maramorosch (Rutgers University).
- **Biological Rhythms in Activity and Interaction (21 Feb.).**
Arranged by Eliot D. Chapple (Goldwater Memorial Hospital, New York, N.Y.).
- **Guaranteeing Our Wildlife Heritage in 2076 (22 Feb.).**
Arranged by Donald J. Zinn (University of Rhode Island).
- **Zoos and Wildlife Conservation (23 Feb.).**
Arranged by William G. Conway (New York Zoological Society).
- **Some Mathematical Questions in Biology (24 Feb.).**
Arranged by Simon A. Levin (Cornell University).

D. Medical Science

- **Bacterial Infections: Vaccines Versus Antibiotics (18 Feb.).**
Arranged by Robert Austrian (University of Pennsylvania School of Medicine).
- **Medications and the Patient (19 Feb.).**
Arranged by Raymond Jang (University of British Columbia).
- **The Role of Controlled Therapeutic Investigations in the Nation's Health Program (19 Feb.).**
Arranged by Marvin Zelen (State University of New York at Buffalo).
- **Neural Metabolism, Drugs, and Aging (20 Feb.).**
Arranged by Caleb E. Finch (University of Southern California).
- **Priorities in Cancer Research: Occupational and Environmental Carcinogenesis (20 Feb.).**
Arranged by Allen E. Silverstone (Massachusetts Institute of Technology Center for Cancer Research).
- **Medical, Ethical, and Social Consequences of Wide-**

spread Use of Intensive Care and Resuscitation Procedures (21 Feb.).
Arranged by Harold H. Hillman (University of Surrey, England).

- **Genetics and Social Policy (22 Feb.).**
Arranged by Jon Beckwith (Harvard Medical School).
- **Biomedical Research: A View from the Outside (23 Feb.).**
Arranged by Barbara J. Culliton and William A. Blanpied (American Association for the Advancement of Science).
- **Computers and Medical Knowledge: Extending the Availability and Use of Knowledge in Medicine (23 Feb.).**
Arranged by Vladimir Slamecka (Georgia Institute of Technology)
- **Randomization and Therapeutic Investigations in Cancer (24 Feb.).**
Arranged by Marvin Zelen.

E. Anthropology

- **Blood Types and the Mystery of the Origins of Amerindians (18 Feb.).**
Arranged by Marcel Roche (Instituto Venezolano de Investigaciones Científicas, Caracas, Venezuela).
- **Population Studies: The Techniques and Prospects for the Future (19 Feb.).**
Arranged by David Mandelbaum (University of California, Berkeley) and Priscilla Reining (American Association for the Advancement of Science).
- **Fifty Years of Anthropology (20 Feb.).**
Arranged by Ruth L. Bunzel (Columbia University).
- **Nonverbal Behavior in American Society (21 Feb.).**
Arranged by Nelson A. Ossorio (Ramapo College of New Jersey) and John R. Aiello (Rutgers University).
- **The Coevolution of Expressive, Productive, and Cultural Systems (22 Feb.).**
Arranged by Alan Lomax (Columbia University).
- **A Small Child's Alchemy: Air, Water, Mud, and Fire (22 Feb.).**
Arranged by Robert W. Kates (Clark University).
- **On the Problem of Reconstructing a Culture: Of What Is "A Culture" a Model? (23 Feb.).**
Arranged by James Silverberg (University of Wisconsin, Milwaukee) and Marvin D. Loflin (University of Nevada, Las Vegas).
- **The Wider Applicability of Anthropological Methodology (24 Feb.).**
Arranged by Jean K. Boek (National Graduate University, Washington, D.C.)

F. Social and Political Science

- **The Integration of the Natural and Social Sciences (18 Feb.).**
Arranged by Edgar Taschdjian (Society for General Systems Research).

- **Social Scientific Methods in the Study of Religion: Milestones of the Past or Signposts for the Future? (19 Feb.).**
Arranged by Gillian Lindt (Columbia University).

- **Geographic Contributions to Knowledge of Innovation Diffusion Processes (20 Feb.).**
Arranged by Lawrence A. Brown (Ohio State University).

- **Trends in Social and Economic Stratification in the United States (20 Feb.).**
Arranged by Seymour Martin Lipset (Stanford University).

- **Federalism Reconsidered in America's Third Century (21 Feb.).**
Arranged by Werner Z. Hirsch (University of California, Los Angeles).

- **Work in America: Changing Roles (22 Feb.).**
Arranged by Janet Welsh Brown (American Association for the Advancement of Science).

- **Client-Focused Feedback Modeling of Social Systems (23 Feb.).**
Arranged by Kenan E. Sahin (University of Massachusetts) and Richard Wright (Georgia Institute of Technology).

- **Crime: What We Know and What We Need to Know (23 Feb.).**
Arranged by Margaret A. Zahn (Temple University).

- **The Anatomy of Violence in Today's Society (24 Feb.).**
Arranged by Robert W. Wesner (Psychological Dimensions, Inc., New York, N.Y.).

G. Behavioral Science

- **Attitudes Toward Children and Child-Rearing in the United States: An Historical Commentary (18 Feb.).**
Arranged by Lewis P. Lipsitt (Brown University).

- **The Effect of Early Rearing Conditions on the Child's Development (19 Feb.).**
Arranged by Jerome Kagan (Harvard University).

- **Psychoanalytic Contributions to the Parenting Function (19 Feb.).**
Arranged by Martin A. Berezin (Harvard Medical School).

- **Adolescent-Adult Role Socialization, Family Planning, and Health Professional Advocates (20 Feb.).**
Arranged by Harriet H. Werley (College of Nursing, University of Illinois).

- **The Future of Neurology and Pharmacology of Learning and Behavior: Social Issues in the Application of New Techniques (20 Feb.).**
Arranged by Stanley S. Robin and James J. Bosco (Western Michigan University).

- **Intelligence and Performance: Newer Conceptualizations and Relevance for Behavioral Measures of Success (21 Feb.).**
Arranged by Robert Perloff (University of Pittsburgh).

- **Race, Genetics, and Intelligence (21 Feb.).**
Arranged by Ned J. Block (Massachusetts Institute of Technology).
- **Species-Specific Learning (22 Feb.).**
Arranged by Alma S. Wittlin (Biopsychological Institute for Education, Palo Alto, Calif.).
- **The Role of Anticipation in Human Affairs (23 Feb.).**
Arranged by Maurice R. Green (Lincoln Hospital, Bronx, N.Y.).
- **Biofeedback and Self-Control: An Enlightened Era? (23 Feb.).**
Arranged by Robert S. Goyer (Ohio University).
- **How Times Have Changed: What Hypnosis of Today Can Lead To, Tomorrow (24 Feb.).**
Arranged by Kay F. Thompson (Pittsburgh School of Dental Medicine).
- **Ecology of Famine (20 Feb.).**
Arranged by Frederick B. Bang and Dwain W. Parrack (Johns Hopkins University).
- **Elemental Pathways from Rocks to Man (21 Feb.).**
Arranged by Helen L. Cannon (U.S. Geological Survey, Denver, Colo.).
- **The Biosocial Aspects of Breast-Feeding (21 Feb.).**
Arranged by Dana Raphael (The Human Lactation Center, Ltd., Westport, Conn.) and Solomon H. Katz (University of Pennsylvania).
- **Mortality, Population, and the National Economy (21 Feb.).**
Arranged by M. Harvey Brenner (Johns Hopkins University).
- **An Introduction to Occupational Health and Safety (22 Feb.).**
Arranged by Kostia Bergman (Northeastern University).
- **Statistics and Environmental Factors in Health (22 Feb.).**
Arranged by Donald L. Thomsen, Jr. (SIAM Institute for Mathematics and Society, New Canaan, Conn.).
- **Health Status Indexes—Their Role in Tomorrow (23 Feb.).**
Arranged by Pennifer Erickson (National Center for Health Statistics, Rockville, Md.).
- **Some Recent Advances in Statistical Science (23 Feb.).**
Arranged by Emanuel Parzen (State University of New York at Buffalo).
- **Diet and Cancer (24 Feb.).**
Arranged by Ruth W. Shearer (Fred Hutchinson Cancer Research Center, Seattle, Wash.).
- **The Role of Fiber in Human Nutrition (24 Feb.).**
Arranged by Ruth Schwartz (Cornell University).

II. USES OF SCIENCE

A. General Interest

- **The Future of Health Care (18 Feb.).**
Arranged by Irving M. London (Massachusetts Institute of Technology).
- **Science, Technology, and the Handicapped (19 Feb.).**
Arranged by Richard H. Bolt and John A. Swets (Bolt Beranek & Newman, Inc., Boston, Mass.), Barry Unger (Boston University), and Martha Redden (American Association for the Advancement of Science).
- **Science Policy and Social Development (20 Feb.).**
Arranged by Jerome B. Wiesner (Massachusetts Institute of Technology).
- **Catastrophies: Analyses and Solutions (21 Feb.).**
Arranged by Stephen H. Schneider (National Center for Atmospheric Research) and Walter Orr Roberts (Aspen Institute for Humanistic Studies).
- **The Mouth: Where It All Begins (22 Feb.).**
Arranged by Paul E. Boyle (Harvard School of Dental Medicine).
- **Social, Cultural, and Technological Connections of Acoustics (23 Feb.).**
Arranged by Arthur H. Benade (Case Western Reserve University).
- **Food, Nutrition, and Population Policy (24 Feb.).**
Arranged by Roger Revelle (Harvard University).

B. Health

- **Sensory Prostheses for the Hearing Impaired: Current Status and Future Directions (18 Feb.).**
Arranged by James H. Abbs (University of Washington).
- **Malnutrition, Behavior, and Social Organization (19 Feb.).**
Arranged by Lawrence S. Greene (Children's Hospital of Philadelphia).

C. Food

- **Feasibility and Impact of Urban Food Production (18 Feb.).**
Arranged by Stuart M. Leiderman (Washington University).
- **Human Life in Arid Lands: Food and Agriculture (19 Feb.).**
Arranged by Walter Orr Roberts (Aspen Institute for Humanistic Studies).
- **Climate and Plant Productivity (20 Feb.).**
Arranged by E. R. Lemon (Cornell University).
- **Crop Productivity—Research and Imperatives (20 Feb.).**
Arranged by Marvin Lamborg (Charles F. Kettering Research Laboratory, Yellow Springs, Ohio).
- **Nitrogen and Phosphorus: Food Production and the Environment (21 Feb.).**
Arranged by Raymond C. Loehr (Cornell University).

- **Malthus Thwarted—So Far (22 Feb.).**
Arranged by James G. Horsfall (The Connecticut Agricultural Experiment Station, New Haven).
- **Energy and Food Production: Contemporary Technology and Alternatives (23 Feb.).**
Arranged by George Salzman (University of Massachusetts).
- **Food Resources: Indigenous, Nutritious, Unappreciated, and Unexploited (24 Feb.).**
Arranged by Marjorie Grant Whiting (U.S. Public Health Service [Ret.]).
- **Plant Germplasm Resources—American Independence, Past and Future (24 Feb.).**
Arranged by Garrison Wilkes (University of Massachusetts).

D. Habitation and Development

- **Early Promises: Geographical Views of American Development (18 Feb.).**
Arranged by Michael P. Conzen (Boston University).
- **Technology, Public Policy, and Rural America (20 Feb.).**
Arranged by Vary T. Coates (George Washington University).
- **The Role of Rural Technology in Improving the Economic Development of Less-Developed Countries (21 Feb.).**
Arranged by Allen D. Jedlicka (University of Northern Iowa) and Dilmus D. James (University of Texas, El Paso).
- **Indoor Air Quality (21 Feb.).**
Arranged by Karl H. Raab (S.T.O.P. [Society to Overcome Pollution], Montreal, Que.).
- **Art, Science, and Technology in Shaping the Environment of the Future (22 Feb.).**
Arranged by Arnold Berleant (Long Island University).
- **Where to Live? Policy Implications of Research on Habitat (23 Feb.).**
Arranged by Irene Tinker and Priscilla Reining (American Association for the Advancement of Science).
- **Geography of Economic Development (23 Feb.).**
Arranged by Geoffrey Bannister and Lakshman S. Yapa (Boston University).
- **Telecommunications, Transportation, and Urban Development (24 Feb.).**
Arranged by Jack M. Nilles (University of Southern California).

E. Energy

- **The Optimal Use of Nonrenewable Energy Resources (18 Feb.).**
Arranged by Michael D. Yokell (Washington State University).
- **Energy Policy and the Future of Nuclear Power: Demand, Resources, Alternatives, and Evaluating the Debate (19–20 Feb.).**
Arranged by Richard A. Scribner (American Association

for the Advancement of Science) and Benjamin Cooper (Committee on Interior and Insular Affairs, U.S. Senate).

- **Solar Energy: An Interdisciplinary Societal Opportunity (21 Feb.).**
Arranged by Ronal W. Larson (Georgia Institute of Technology).
- **The Alaska Pipeline (22 Feb.).**
Arranged by Robert W. Hiatt and Keith B. Mather (University of Alaska).
- **Exploration for Hydrocarbons (23 Feb.).**
Arranged by Franklyn K. Levin (Exxon Production Research Company, Houston, Tex.).
- **Oil from the Oceans: Premises and Prospects (23 Feb.).**
Arranged by Susan B. Peterson (Woods Hole Oceanographic Institution).
- **Environmental Impact of Coal Mining and Conversion, Northern Great Plains (24 Feb.).**
Arranged by Arnold J. Silverman (University of Montana).
- **Case Studies in Regional Energy Planning (24 Feb.).**
Arranged by William A. Blanpied (American Association for the Advancement of Science).

F. Science and Technology Implications

- **Putting Science to Work Through University/Industry Interaction (18 Feb.).**
Arranged by John C. Johnson (Pennsylvania State University).
- **Vernaculars of Peace: Exploring Levels of Communication on Foreign Policy (19 Feb.).**
Arranged by Grant G. Hilliker (Consortium on Peace Research, Education and Development).
- **Paths into the Future: The United States as a Force for War and Peace After Vietnam (19 Feb.).**
Arranged by Davis B. Bobrow (University of Maryland).
- **Science and Social Risk (20 Feb.).**
Arranged by Bruce A. Bolt (University of California, Berkeley).
- **Impact of Operations Research on Industrial Management (20 Feb.).**
Arranged by Burton V. Dean (Case Western Reserve University) and George K. Chacko (University of Southern California).
- **Research for the People (21 Feb.).**
Arranged by Jonathan King (Massachusetts Institute of Technology).
- **Man-Computer Relations: What Will They Be? (22 Feb.).**
Arranged by John D. Gould (IBM Thomas J. Watson Research Center).
- **The Perishing Publishing Prospect for Scientific Authors (22 Feb.).**
Arranged by Harold F. Osborne (Veterans Administration, Washington, D.C.).

- **America: The First Information Society (23 Feb.).**
Arranged by Paul Polishuk (U.S. Department of Commerce).
- **The Engineering of Public Safety: Protect or Perish (24 Feb.).**
Arranged by F. Karl Willenbrock (National Bureau of Standards).

G. Science and Technology Policy

- **Science and the Limitations of Decision Technology (18 Feb.).**
Arranged by Ernst R. Habicht, Jr. (Environmental Defense Fund, Setauket, N.Y.) and Helen Hill Updike (University of Massachusetts).
- **The Uses of Social Science for Social Policy (19 Feb.).**
Arranged by Joseph H. Helfgot (Boston University).
- **Can Science Be Measured? Problems in the Use of Science Indicators (19 Feb.).**
Arranged by Arnold Thackray (University of Pennsylvania).
- **The Effect of Government Antitrust Action and Regulation on Technological Innovation: The Issues (20 Feb.).**
Arranged by Richard N. Foster (McKinsey & Co., New York, N.Y.).
- **Science, Technology, and Society: A Field of Study (20 Feb.).**
Arranged by Ezra D. Heitowit (Cornell University).
- **Policy Implementation (21 Feb.).**
Arranged by William Gorham (The Urban Institute, Washington, D.C.) and Erwin C. Hargrove (Brown University).
- **Philosophy of Technology: Methodological Guidelines (21 Feb.).**
Arranged by Paul T. Durbin (University of Delaware).
- **Research-Based Science Policy (22 Feb.).**
Arranged by William H. Gruber (Massachusetts Institute of Technology).
- **Roles for Scientists and Engineers in Congressional Energy Policy-Making (22 Feb.).**
Arranged by Richard A. Scribner (American Association for the Advancement of Science).
- **Evaluating Federal R&D Policy (23 Feb.).**
Arranged by John M. Logsdon (George Washington University).
- **Social Utility Measurements for Technological Endeavors (23 Feb.).**
Arranged by Joseph G. Wohl (The MITRE Corporation).
- **Science and the State Legislative Process (24 Feb.).**
Arranged by Frederick C. Nelson (Tufts University).

*For information about tours and special events
see Science, 28 November 1975*

III. PERSPECTIVES ON SCIENCE

A. General Interest

- **Planning for the Future: Limits and Prospects (18 Feb.).**
Arranged by Edwin P. Hollander (State University of New York at Buffalo) and Daniel Rich (University of Delaware).
- **Science and Art (19 Feb.).**
Arranged by Rolf M. Sinclair (National Science Foundation).
- **Scientific Communications and the Advancement of Science (19 Feb.).**
Arranged by Ruth M. Davis (National Bureau of Standards) and Joel D. Goldhar (National Science Foundation).
- **Great Women in Science (20 Feb.).**
Arranged by Ruth M. Davis.
- **Science as Drama (21 Feb.).**
Arranged by Judith Wechsler (Massachusetts Institute of Technology), Howard J. Lewis and Norman Metzger (National Academy of Sciences).
- **Science and Values (21 Feb.).**
Arranged by Harvey Brooks (Harvard University).
- **Science and Anti-Science (22 Feb.).**
Arranged by L. Vaughn Blankenship (National Science Foundation).
- **The Scientists' Interface with the Press: Who Carries the Burdens? (23 Feb.).**
Arranged by Homer J. Hall (American Institute of Chemists).
- **Science and Society in the 18th Century and in the Future (24 Feb.).**
Arranged by Magnus Pyke (British Association for the Advancement of Science, London).

B. Ethical Perspectives

- **Human Values in Engineering (18 Feb.).**
Arranged by T. Paul Torda (Illinois Institute of Technology).
- **Ethics and the Corporate Scientist (19 Feb.).**
Arranged by Robert J. Baum (National Science Foundation).
- **Roles for Scientific Societies with Regard to Issues of Scientific Freedom and Responsibility (20 Feb.).**
Arranged by William A. Blanpied (American Association for the Advancement of Science).
- **Literary Modes in the Practice of Science (20 Feb.).**
Arranged by Joseph W. Meeker (Athabasca University, Edmonton, Canada).
- **Transdisciplinary Studies in Science and Values (21 Feb.).**
Arranged by William A. Blanpied.

C. Cultural Perspectives

- **Science and Technology—Our Afro-American Prospective (18 Feb.).**
Arranged by Kathleen J. Prestwidge (Bronx Community College).
- **Science and Technology in Brazil: Past, Present, and Future (19 Feb.).**
Arranged by Oscar Sala (Brazilian Society for the Progress of Science, São Paulo).
- **Intercultural Relations Between Mexico and the United States (20 Feb.).**
Arranged by Fernando Cámara (National Institute of Anthropology and History, Mexico).
- **Public Conception of Science and Perspectives on Current Crucial Problems in Japan (22 Feb.).**
Arranged by Keiko Nakamura (Mitsubishi-Kasei Institute of Life Sciences, Tokyo).
- **Unfinished Business: 200 Years of American Indian Development (22 Feb.).**
Arranged by Philleo Nash (American University).
- **Health Science Education as Applied to National Needs (23 Feb.).**
Arranged by Mehdi Tavassoli (Scripps Clinic and Research Foundation).

D. Historical Perspectives

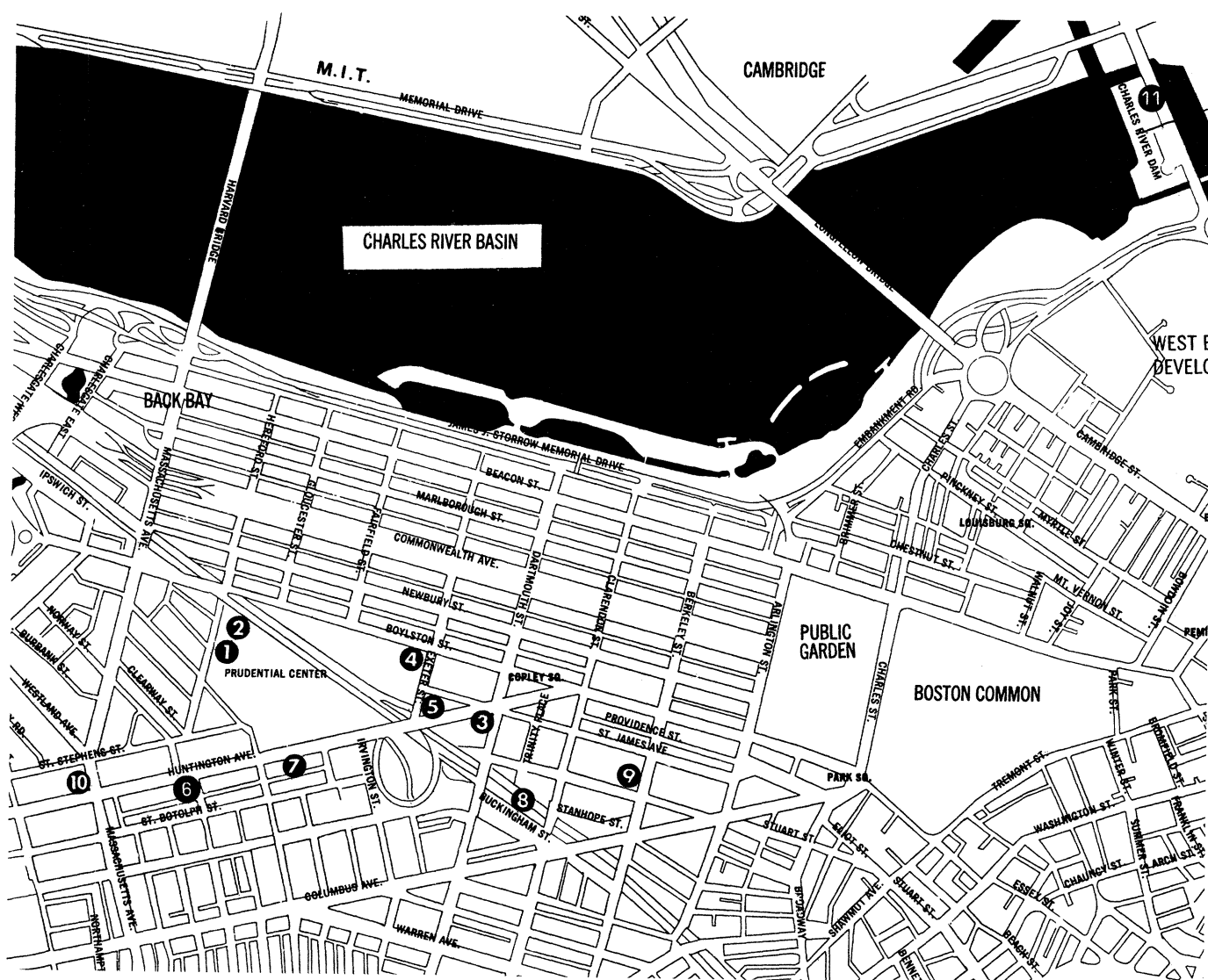
- **American Mathematics: Retrospect and Prospect (18 Feb.).**
Arranged by Arnold Wendt (Western Illinois University).
- **Social History and Archaeology of the 17th and 18th Centuries in the United States (19 Feb.).**
Arranged by James F. Deetz (Brown University).
- **Science and Revolution (20 Feb.).**
Arranged by Thomas F. Glick (Boston University) and Everett Mendelsohn (Harvard University).
- **The Sciences in America: A Bicentennial Retrospective (21–23 Feb.).**
Arranged by Nathan Reingold (Smithsonian Institution).
- **Climate in the United States Since 1776 (23 Feb.).**
Arranged by J. Murray Mitchell, Jr. (National Oceanic and Atmospheric Administration).
- **History of the Association of Academies of Science and of Some Individual Academies of Science (24 Feb.).**
Arranged by John H. Melvin (Ohio State University [Emeritus]) and Franz H. Rathmann (Moorhead State University, Minn.).
- **Biology and the American Public—Then and Now (24 Feb.).**
Arranged by Charlotte M. Porter (American Museum of Natural History).

E. Education

- **Women and Mathematics (18 Feb.).**
Arranged by Lynn H. Fox (Johns Hopkins University).
- **Environmental Education's New Audience and New Communication (18 Feb.).**
Arranged by Richard L. James (Schuylkill Valley Nature Center, Philadelphia, Pa.).
- **Energy and Environmental Education (19 Feb.).**
Arranged by John M. Fowler (National Science Teachers Association).
- **Current Practices in Environmental Education (19 Feb.).**
Arranged by Ronald J. Raven (State University of New York at Buffalo).
- **Science Education Amidst Educational Policies (20 Feb.).**
Arranged by Arthur H. Livermore, Joseph M. Dasbach, and Don I. Phillips (American Association for the Advancement of Science).
- **Can We Develop a Reliable Applied Science of Education? (21 Feb.).**
Arranged by Joseph I. Lipson (University of Mid-America, Lincoln, Nebr.).
- **Museums and Science Education (22 Feb.).**
Arranged by William A. Blanpied (American Association for the Advancement of Science).
- **College Anyone, College Everyone, or College at All in Century III? (22 Feb.).**
Arranged by Robert B. Collagan (Morgan State University).
- **Research Techniques and Reports by High School Science Students (22 Feb.).**
Arranged by Frank Starr (Waterloo Community Schools, Waterloo, Iowa).
- **Symbolic Mathematical Computation: Its Potential for Science and Education (22 Feb.).**
Arranged by James H. Griesmer (IBM Thomas J. Watson Research Center).
- **Teaching of Science-Related Social Issues (23 Feb.).**
Arranged by Laura C. Trout (Indiana University).
- **New Frontiers in Mathematics Education (23 Feb.).**
Arranged by William M. Fitzgerald (Michigan State University).
- **Birth of New Ways to Raise a Scientifically Literate Society: Research That May Help (24 Feb.).**
Arranged by Mary Budd Rowe (University of Florida).
- **Innovative Approaches Currently in Use in Undergraduate Science Education (24 Feb.).**
Arranged by Robert A. Bernoff (Pennsylvania State University).
- **International Communications: The Foreign Language Requirements for the Ph.D. Degree in the Sciences (24 Feb.).**
Arranged by Franz H. Rathmann (Moorhead State University, Minn.).

F. Opportunities

- **Minorities in Science (19 Feb.).**
Arranged by Percy Russell (University of California at San Diego).
- **Problems of Minorities at Majority Institutions (19 Feb.).**
Arranged by Francine B. Essien (Rutgers University).
- **Public Policy and Biomedical and Behavioral Training: Effective Development of Existing Potential (19 Feb.).**
Arranged by Vijaya L. Melnick (Federal City College) and Cora B. Marrett (University of Wisconsin).
- **Financial Support for Minority Scientific Activity in Education and Research (20 Feb.).**
Arranged by Charles M. Goolsby (Organization of Black Scientists, Washington, D.C.).
- **Affirmative Action: Myth or Reality? (20 Feb.).**
Arranged by Francine Essien, Franklin D. Hamilton (University of Tennessee), and Vijaya L. Melnick.
- **Special Training Programs for Minority Students in Science (21 Feb.).**
Arranged by Franklin D. Hamilton.
- **Special Training Programs for Minority Students in Science—Precollege Level (21 Feb.).**
Arranged by Cyrus J. Lawyer (Institute for Services to Education, Washington, D.C.) and Shirley M. Malcolm (American Association for the Advancement of Science).
- **Are Scientists Different? The Job Crisis in Perspective (21 Feb.).**
Arranged by Joseph Schwartz (City University of New York).
- **Bicentennial Retrospectives and Prospectives: Science Education for Women (23 Feb.).**
Arranged by Miriam Schweber (Simmons College).
- **Bicentennial Retrospectives and Prospectives: Opportunities for Women in Science and Engineering (23 Feb.).**
Arranged by Miriam Schweber.



LOCATIONS OF NUMBERS ON MAP

- | | | | |
|----------------------------|-----------------------|-----------------------------|----------------------|
| 1 Sheraton-Boston Hotel | 4 The Lenox Hotel | 7 The Colonnade Hotel | 10 Symphony Hall |
| 2 John B. Hynes Auditorium | 5 Copley Square Hotel | 8 Back Bay Railroad Station | 11 Museum of Science |
| 3 Copley Plaza Hotel | 6 Midtown Motor Inn | 9 John Hancock Hall | |

Reservations

Hotel Rates*

**Annual Meeting
Boston
18-24 February 1976**



The American Association for the Advancement of Science will hold its 1976 Annual Meeting in Boston, 18-24 February. The majority of sessions will be held in the Sheraton-Boston and in the John B. Hynes Veterans Auditorium. The exhibits (*Science International*) as well as AAAS registration and information desks will be located in the Hynes Auditorium. The following hotels will be used for housing:

Hotel	Single	Double	Twin	Suites**	Parking
SHERATON-BOSTON Prudential Center (No. of rooms held: 1200)	\$25 29 31	\$36 38 40	\$36 38 40	\$65 and up	Free 24-hour parking for registered guests; \$1 valet charge.
COPLEY PLAZA Copley Square (No. of rooms held: 250)	\$24 28 30	\$32 36 38	\$32 36 38	\$60 and up	Free 24-hour parking for registered guests; \$1.75 valet charge.
THE LENOX 710 Boylston Street (No. of rooms held: 125)	\$24 28	\$31 35	\$31 35	\$75	Free overnight parking (6 pm-10 am); day-time parking \$3 maximum.
MIDTOWN MOTOR INN 220 Huntington Avenue (No. of rooms held: 100)	\$24	\$32	\$32	—	Free parking for registered guests.
COPLEY SQUARE 47 Huntington Avenue (No. of rooms held: 75)	\$20 22 24	\$23 25 30	\$26 28 30	\$40 and up	Free overnight parking (5 pm-9 am); for day-time parking, inquire at hotel.
THE COLONNADE 120 Huntington Avenue (No. of rooms held: 150)	\$30 34	\$38 42	\$38 42	\$130 and up	Free parking for registered guests.

*Per day; add 5.7% for Massachusetts State Room Tax. Charges for rollaway beds and cots vary between \$5 and \$7, depending on hotel. Children under age 12 accommodated free in same room with parents at Midtown Motor Inn and Colonnade; under age 14 at Copley Square; age limit higher at Sheraton, Copley Plaza and Lenox.

**One-bedroom parlor suites; rates for larger suites available upon request. Deluxe accommodations available at Sheraton-Boston in all categories at higher rates.

NOTE: If room rate specified is not available, the next available higher rate will be assigned. Confirmation will come to you directly from the hotel. You should notify the hotel of any change in your reservation. Assignment is delayed if any information is omitted.

HOTEL RESERVATIONS FORM

(Reservations received after 4 February cannot be assured)

CHOICE OF HOTEL: First _____ Second _____

ROOM: ☐ Single ☐ Double ☐ Twin ☐ Suite Preferred Rate \$ _____

Please indicate any special accommodation needs due to a handicap _____

ARRIVAL: Date _____; _____ a.m. _____ p.m. Be sure to list definite arrival and

DEPARTURE: Date _____; _____ a.m. _____ p.m. Hotel reservations will be held only until

6 p.m. unless otherwise specified.

NAMES AND ADDRESSES OF ALL OCCUPANTS OF ROOM

Name _____ Name _____

Address _____ Address _____

City _____ State _____ Zip _____ City _____ State _____ Zip _____

Name _____ Name _____

Address _____ Address _____

City _____ State _____ Zip _____ City _____ State _____ Zip _____

Individual Requesting Reservations _____

Mail to: AAAS Housing Bureau,
900 Boylston Street, Boston, Mass. 02115