

Reservations

HOTEL RATES* (Per Day)

The American Association for the Advancement of Science will hold its 1971 Annual Meeting in Philadelphia, Pennsylvania, 26-31 December. The AAAS registration desks will be located at the Sheraton, Bellevue-Stratford, and Benjamin Franklin hotels. The following hotels will be used for housing:

Hotel	Single	Double	Twin	Suites
1) †SHERATON 1725 J. F. Kennedy Boulevard	\$17 19 21	\$23 25 27	\$23 25 27	\$46 and up
2) WARWICK 17th and Locust Streets	17 19 21	23 25 27	23 25 27	60 and up
3) BELLEVUE-STRATFORD Broad and Walnut Streets	17 19 21	23 25 27	23 25 27	55 and up
4) BENJAMIN FRANKLIN 9th and Chestnut Streets	17 19 21	23 25 27	23 25 27	45 and up
5) †HOLIDAY INN-PENN CENTER 18th and Market Streets	17 19 21	23 25 27	23 25 27	75

* Pennsylvania Room Tax, 6 percent; \$3 to \$6 additional charge for rollaway beds. If rate specified is not available, the next highest rate room will be assigned.

† Hotels have free parking.

Baby-sitting services will be available through Kiddie-Kare Bureau (Tel.: CH 2-2222).

HOTEL RESERVATIONS FORM

(Reservations received after 13 December cannot be assured)

CHOICE OF HOTEL: First _____ Second _____ Third _____

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

NAME: _____
(Individual requesting reservation)

ADDRESS: _____
(Street) (City and State) (Zip Code)

ARRIVAL: Date _____; _____ a.m. _____ p.m. Be sure to list definite arrival and departure date and time. Hotel reservations will be held only until 6 p.m. unless otherwise specified.

DEPARTURE: Date _____; _____ a.m. _____ p.m.

Number in party _____ sharing this room will be (list name and address of each person, including your own):

Mail to: AAAS Housing Bureau, Philadelphia Convention Bureau,
1525 J. F. Kennedy Boulevard, Philadelphia, Pennsylvania 19102

AAAS Annual Meeting

Philadelphia, Pennsylvania

26–31 December 1971

PRELIMINARY PROGRAM

General Chairman: Gaylord P. Harnwell
(President Emeritus, University of Pennsylvania)

AAAS INVITED LECTURES AND PANELS

- ☐ Special Lecture (26 Dec.).
Constantinos A. Doxiadis (President, Athens Technological Organization, Athens, Greece).
- ☐ Distinguished Lecture (27 Dec.).
To be selected.
- ☐ Address of the Retiring AAAS President (28 Dec.).
Athelstan Spilhaus (Woodrow Wilson International Center for Scholars, Smithsonian Institution).
- ☐ RESA Annual Address and Panel Discussion (29 Dec.).
J. E. Goldman (Senior Vice President, Research and Development, Xerox Corporation, Stamford, Conn.).
- ☐ Phi Beta Kappa Lecture (29 Dec.).
Jean Mayer (Harvard University School of Public Health).
- ☐ Frontiers of Science Lecture (30 Dec.).
To be selected.
- ☐ Illustrated Lectures (26–30 Dec.).
Jerome S. Bruner (Harvard University); Paul D. MacLean (National Institute of Mental Health); Carl Sagan (Cornell University); Alvin M. Weinberg (Oak Ridge National Laboratory).
- ☐ Committee on Science in the Promotion of Human Welfare (28 Dec.).
Use of Scientific Information in Policy-Making. Arranged by Richard H. Bolt (Bolt Beranek & Newman, Cambridge).
- ☐ Youth Council and Committee on Environmental Alterations (27–29 Dec.).
Environmental Sciences and International Development. Arranged by M. Taghi Farvar, Michael W. Corr, and Alan H. McGowan (Washington University).

AAAS GENERAL SCIENCE SYMPOSIA AND DISCUSSIONS

- ☐ Committee on Arid Lands (29–30 Dec.).
Polar Deserts. Arranged by Terah L. Smiley and James H. Zumberge (University of Arizona).
- ☐ Committee on Environmental Alterations (28–29 Dec.).
Power Use. Arranged by Barry Commoner (Washington University).
- ☐ The Sciences in the Service of Urban Philadelphia (27–30 Dec.).
Urban Health Care. Arranged by Alfred Gellhorn (University of Pennsylvania). **University–Black Ghetto Relations: A Case Study.** Arranged by Russell L. Ackoff (University of Pennsylvania). **Socially Responsive Actions by Urban Institutions of Higher Education.** Arranged by Millard E. Gladfelter (Temple University). **Urban Education in the Schools.** Arranged by Ezra Staples (Philadelphia Board of Public Education). **Urban Physical Redevelopment.** Arranged by William L. Rafsky (Greater Philadelphia Movement). **Interactions between Natural and Urban Communities.** Arranged by Ruth Patrick (Academy of Natural Sciences). **Synthesizing Our Urban Environment.** A Summary Panel Discussion. Arranged by David R. Goddard (University of Pennsylvania).
- ☐ Sound and Music (27–30 Dec.).
Acoustical Research on Orchestral Musical Instruments. Arranged by Arthur Benade (Case Western Reserve University). **Musical Perception.** Arranged by W. Dixon Ward (University of Minnesota).

Architectural Acoustics. Arranged by R. S. Shankland (Case Western Reserve University). **Environmental Noise.** Arranged by R. L. Bannister (Westinghouse Electric Corporation). **Computer Theatre and Music.** Arranged by M. V. Mathews (Bell Telephone Laboratories). **Education in Acoustics.** Arranged by R. Bruce Lindsay (Brown University). **Teaching Musical Acoustics** (panel discussion). Arranged by J. F. Pizzirusso (Acoustical Society of America).

- ☐ **Scientific Institutions of the Future (27 Dec.).**
Arranged by Philip C. Ritterbush (Organization: Response, Washington, D.C.).

- ☐ **Development of Science in China (28 Dec.).**
Arranged by Robert J. Rutman (University of Pennsylvania).

- ☐ **The Application of Science in the Management of the National Parks (28–29 Dec.).**
Arranged by T. Sudia (National Park Service).

- ☐ **Student-Originated Studies: An Ongoing Experiment in Undergraduate Student-Directed Studies of Environmental Problems (28–29 Dec.).**
Arranged by Alexander J. Barton (National Science Foundation).

- ☐ **The Role of Mathematics in the Development of Science (29 Dec.).**
Arranged by Raymond J. Seeger (AAAS, Washington, D.C.).

- ☐ **Communication Technology and Its Effect on People (29 Dec.).**
Arranged by Walter Baer (Rand Corporation, Santa Monica).

- ☐ **Can We Develop an Index for Quality of Life? (30 Dec.).**
Arranged by S. Fred Singer (University of Virginia).

- ☐ **Women in Academia: Evolving Policies toward Equal Opportunities (30 Dec.).**
Arranged by Arie Y. Lewin (New York University).

SYMPOSIA OF AAAS SECTIONS AND AFFILIATED SOCIETIES

Mathematics (A)

- ☐ **Section Program**
 - The Relation between Applications of Mathematics and Teaching of Mathematics (28 Dec.). Arranged by Henry O. Pollak (Bell Telephone Laboratories).
 - Mathematics and Science for the Man and Woman in the Street (30 Dec.). Arranged by R. A. Rosenbaum (Wesleyan University).

AAAS Annual Meeting

- ☐ **American Mathematical Society and Society for Industrial and Applied Mathematics**
 - Some Mathematical Questions in Biology (26–27 Dec.). Arranged by Jack D. Cowan (University of Chicago).

- ☐ **Operations Research Society of America**
 - Contributions of Operations Research to Mathematics (27 Dec.). Arranged by Saul I. Gass (Mathematica, Inc., Bethesda, Md.).

Physics (B)

- ☐ **Section Program**
 - Energy Production from Nuclear Fusion (27 Dec.). Arranged by Roy Gould (U.S. Atomic Energy Commission).

- Physics Looks at Biological Structure (28 Dec.). Arranged by Britton Chance (University of Pennsylvania).

Chemistry (C)

- ☐ **Section Program**
 - Odor and Its Effect on Living Things (27 Dec.). Arranged by Irvin Hornstein (Agency for International Development).

- Living Systems: Synthesis, Assembly, Origins (29–30 Dec.). Arranged by Sidney Fox (University of Miami).

Astronomy (D)

- ☐ **Section Program**
 - Astronomy from a Space Platform (27–28 Dec.). Arranged by G. W. Morgenthaler (Martin Marietta Corporation, Denver).

- The Cosmic Distance Scale (29 Dec.). Arranged by L. W. Fredrick (University of Virginia).

Geology and Geography (E)

- ☐ **Section Program**
 - Environmental Education Workshop and Seminar (27 Dec.). Arranged by Robert E. Samples, Manert Kennedy, and Nicholas Helburn (University of Colorado).

- The Early History of the Earth and Moon (28 Dec.). Arranged by S. Fred Singer (University of Virginia).

- Geological Implications of Solid Waste Landfill (29 Dec.). Arranged by Arthur A. Socolow (Pennsylvania Geological Survey, Harrisburg).

☐ **National Speleological Society**

- Cave Biology and Cave Geology (30 Dec.). Arranged by William B. White (Pennsylvania State University) and Richard E. Graham (Upsala College).

Biological Sciences (FG)

☐ **Section Program**

- Indicators of Environmental Quality (27–28 Dec.). Arranged by William A. Thomas (Oak Ridge National Laboratory).
- The Descent of Man—Darwin Centennial (28 Dec.). Arranged by Elwyn Simons (Yale University).
- Recent Advances in Pollination Biology: Quantification and Case Studies (29 Dec.). Arranged by Herbert G. Baker (University of California, Berkeley).
- The Regulation of Organ and Tissue Growth (29–30 Dec.). Arranged by Richard J. Goss (Brown University).

☐ **American Fisheries Society**

- Heavy Metals as an Environmental Hazard to Fish, Birds, and Man (30 Dec.). Arranged by Gerald J. Lauer (New York University).

☐ **American Society of Naturalists**

- The Formation of Diploid Neospecies (30 Dec.). Arranged by Hampton L. Carson (University of Hawaii).

☐ **American Society of Zoologists/Division of Comparative Endocrinology**

- Comparative Aspects of Ovarian Function and Control (27 Dec.). Arranged by Ian P. Callard (Boston University).
- Ecdysone Interactions during Arthropod Molting (28 Dec.). Arranged by John D. O'Connor (University of California, Los Angeles).

☐ **American Society of Zoologists/Division of Developmental Biology**

- Chromosomal Differentiation and Development (27 Dec.). Arranged by Hans Laufer (University of Connecticut).

☐ **American Society of Zoologists/Division of Ecology**

- Experimental Manipulation of Natural Systems (27 Dec.). Arranged by William E. Cooper (Michigan State University).

☐ **American Society of Zoologists/Division of Vertebrate Morphology**

- The Vertebrate Integument (27–28 Dec.). Arranged by Paul F. A. Maderson (Brooklyn College).

☐ **Animal Behavior Society**

- Invertebrate Behavior (27–28 Dec.). Arranged by Peter N. Witt (North Carolina Department of Mental Health).
- Prenatal Ontogeny of Behavior and the Nervous System (28–30 Dec.). Arranged by Gilbert Gottlieb (North Carolina Department of Mental Health).

Anthropology (H)

☐ **Section Program**

- Vice Presidential Address and Population Control in Social and Economic Perspective (27 Dec.). Given and arranged by Ward Goodenough (University of Pennsylvania).
- Biologic Relativity (26 Dec.). Arranged by E. R. N. Grigg (Chicago Medical School).
- Technology and the Humanization of Work (27 Dec.). Arranged by Michael Maccoby (Institute for Policy Studies, Washington, D.C.) and Neal Q. Herrick (U.S. Department of Labor).
- City Life (28 Dec.). Arranged by John Szwed (University of Pennsylvania).
- Crucial Transitions in Civilization: A Problem in Macro-Cultural Interpretation (29 Dec.). Arranged by Roger W. Wescott (Drew University).
- Non-Linear Research in the Sciences and Humanities (29–30 Dec.). Arranged by Michael Kosok (Fairleigh Dickinson University).
- Youth Speaks about Itself (30 Dec.). Arranged by Ruth S. Freed (Seton Hall University) and S. Miller (New York University).

☐ **American Anthropological Association**

- Biological and Cultural Bases of Sex Role Differentiation (28 Dec.). Arranged by Alexander Alland, Jr. (Columbia University) and Adrienne Zihlman (University of California, Santa Cruz).

☐ **Society for American Archeology**

- Looting the Past: An International Scandal (29 Dec.). Arranged by Richard I. Ford (University of Michigan).

Psychology (I)

☐ **Section Program**

- Human Response to Environmental Stimulation:

From the Laboratory to the Field (27 Dec.). Arranged by Joachim F. Wohlwill (Pennsylvania State University).

- The Cerebral Librarian: Functions and Malfunctions (28 Dec.). Arranged by James E. Deese (The Johns Hopkins University).
- On the Relations between Basic Research and Applications of Psychology (28 Dec.). Arranged by James J. Jenkins (University of Minnesota).
- Thirst: Advances in Concepts and Mechanisms (28–29 Dec.). Arranged by Alan N. Epstein and Eliot Stellar (University of Pennsylvania).
- Encounter Groups (30 Dec.). Arranged by Kurt W. Back (Duke University).
- ☐ American Psychiatric Association
 - Studies in Sexuality (30 Dec.). Arranged by Leo Madow (Philadelphia).
- ☐ American Psychoanalytic Association
 - The Role of Aggression in Human Adaptation (26 Dec.). Arranged by Jacob A. Arlow (State University of New York, New York City).
- ☐ American Speech and Hearing Association
 - Articulation Phenomena and Disorders (27 Dec.). Arranged by Ralph Shelton (University of Arizona).
- ☐ Society for Research in Child Development
 - Sources of Knowledge for Child Rearing (29 Dec.). Dale B. Harris (Pennsylvania State University).

Social and Economic Sciences (K)

- ☐ Section Program
 - Vice Presidential Address: The Failure of Social Sciences Analysis of Current National Problems (29 Dec.), by Daniel P. Moynihan (Harvard University). Followed by panel discussion.
 - Governmental Revenue Sharing and Its Effects on Education (26 Dec.). Arranged by Janos Horvath (Columbia University).
 - Value and Knowledge Requirements for Peace (27–30 Dec.). Arranged by Vincent P. Rock (National Research Council).
 - The Changing American Population: The Social and Economic Implications of the 1970 Census (29 Dec.). Arranged by Harvey M. Sapolsky (University of Michigan).
 - The New Radicalism in Science (29–30 Dec.). Arranged by David Nichols (Case Western Reserve University).

AAAS Annual Meeting

- Congress and Future Trends in American Politics (30 Dec.). Arranged by Robert Puckett (Indiana State University).
- Technology Assessment Education Programs (30 Dec.). Arranged by Michael Baram (Massachusetts Institute of Technology).
- ☐ American Orthopsychiatric Association
 - Confronting the Violence of Normal Man (26 Dec.). Arranged by Israel W. Charny (Group for Research in the Psychology of Aggression and Non-Violence, Paoli, Pa.).
- ☐ American Society of Criminology
 - Differences in Viewpoint: The Drug Addict and His Physician (29 Dec.). Arranged by John C. Ball (Temple University).
- ☐ Gerontological Society
 - Aging, Family, and Bureaucracy (30 Dec.). Arranged by Gordon F. Streib (Cornell University).
- ☐ Operations Research Society of America and Institute of Management Sciences
 - Operations Research and Management Science in the Administration of Justice (27–28 Dec.). Arranged by Carl M. Harris (George Washington University) and Alfred Blumstein (Carnegie-Mellon University).

History and Philosophy of Science (L)

- ☐ Section Program
 - Problems in 19th Century American Science (27 Dec.). Arranged by W. B. Bell, Jr. (American Philosophical Society).
 - Science and Technology in Philadelphia, 1750–1815 (27 Dec.). Arranged by W. B. Bell, Jr.
 - 400th Anniversary of Kepler's Birth (28 Dec.). Arranged by Raymond J. Seeger (AAAS, Washington, D.C.).
 - Teaching the History and Philosophy of Science in Science Courses—A Panel Discussion (28 Dec.). Arranged by Raymond J. Seeger.
- ☐ George Sarton Memorial Lecture
 - From Catastrophism to Evolutionism—The History of a Conceptual Transition (28 Dec.), by Ernst Mayr (Harvard University).
- ☐ Society for General Systems Research
 - General Systems of the World Environment (27–30 Dec.). Arranged by Philip C. Nunn (Center for En-

vironmental Studies, Grand Rapids, Mich.) and Richard F. Ericson (George Washington University).

Engineering (M)

☐ Section Program

- The Navigation Sciences (30 Dec.). Arranged by C. Towner French (P. R. Mallory & Co., Inc., Washington, D.C.) and Raynor L. Duncombe (U.S. Naval Observatory).

☐ American Institute of Aeronautics and Astronautics

- Engineering—For the Survival of Man (28 Dec.). Arranged by T. Todd Reboul (RCA Corporation, Moorestown, N.J.).

☐ Metric Association

- Practical Solutions to Metric Conversion (27 Dec.). Arranged by Edward A. Munns (Berryville, Va.).

Medical Sciences (N)

☐ Section Program

- Present and Future Approaches to Population Control (26 Dec.). Arranged by George B. Koelle (University of Pennsylvania).

- How Valuable Is Human Health? (29 Dec.). Arranged by Edmund D. Pellegrino (State University of New York, Stony Brook) and Ronald W. McNeur (Society for Health and Human Values, Philadelphia).

- Sentic, Brain Function, and Sources of Human Values (29–30 Dec.). Arranged by Manfred Clynes (Rockland State Hospital, Orangeburg, N.Y.).

☐ Operations Research Society of America

- Alternative Approaches to National Delivery of Health Care (28 Dec.). Arranged by George K. Chacko (Institute of Aerospace Safety and Management, Washington, D.C.).

Dentistry (Nd)

☐ Section Program

- Comparative Immunology of the Oral Cavity (28–29 Dec.). Arranged by Henry W. Scherp (National Institute of Dental Research).

Pharmaceutical Sciences (Np)

☐ Section Program

- Vice Presidential Address (27 Dec.), by Wallace L. Guess (University of Texas, Austin).
- Distinguished Lecture: Human Variability and Safer, More Effective Pharmacotherapy (27 Dec.), by George J. Cosmides (National Institute of General Medical Sciences).

- The Over-Medicated Society (28 Dec.). Arranged by M. C. Smith (University of Mississippi).

Agriculture (O)

☐ Section Program

- Mineral Elements in the Food Chain (28–29 Dec.). Arranged by Michael A. Farrell (State College, Pa.) and Matthias Stelly (American Society of Agronomy).

Industrial Science (P)

☐ Section Program

- Man-Machine Interactions and Implications for Society (29 Dec.). Arranged by Carl L. Sandler (Battelle Memorial Institute, Seattle).

- Technology and Growth in a Resource-Limited World (30 Dec.). Arranged by Robert U. Ayres (International Research and Technology Corporation, Washington, D.C.).

Education (Q)

☐ Section Program

- Science and the Humanities (27 Dec.). Arranged by Frederick D. Horn (Westminster College).

- Education Planning in Government: 1972–1980 (28 Dec.). Arranged by Francis X. Sutman (Temple University).

- Directions in Science Education: Asia 1971 (28 Dec.). Arranged by Francis X. Sutman.

- The Social Science Disciplines: Contributions to Basic Research in Education (29 Dec.). Arranged by Howard F. Hjelm and Lloyd K. Johnson (U.S. Office of Education, Washington, D.C.).

- Learning Research (30 Dec.). Arranged by J. David Lockard (University of Maryland).

☐ American Nature Study Society

- Nature Study for Impact and Action (27–29 Dec.). Arranged by Kingsley L. Greene (State University of New York, Morrisville).

☐ Sigma Delta Epsilon

- The Graduate Students (27 Dec.). Arranged by Hazel Fox (University of Nebraska).

Information and Communication (T)

☐ Section Program

- Vice Presidential Address: Quality Control—The Key Issue in Information Systems (29 Dec.), by

Edward L. Brady (National Bureau of Standards, Washington, D.C.).

- Humor in Science (27 Dec.). Arranged by James V. McConnell (University of Michigan).
- The Information Conscious Society (27 Dec.). Arranged by Eugene Garfield and Morton V. Malin (Institute for Scientific Information, Philadelphia).

- ☐ American Medical Writers' Association
 - Myriads of "Bits" Do Not Make a Whole (30 Dec.). Arranged by Abe Rubin (Ohio College of Podiatric Medicine).
- ☐ International Communications Association
 - Communicative Behavior and the Public Welfare (29 Dec.). Arranged by Robert S. Goyer (Ohio University).
- ☐ National Association of Science Writers
 - Science Writing as Literature (27 Dec.). Arranged by Eugene H. Kone (Rockefeller University).

Statistics (U)

- ☐ Section Program
 - Vice Presidential Address (29 Dec.), by Elizabeth Scott (University of California, Berkeley).
 - The Effect of Educational Experience in Subsequent Education and Adult Life—Models, Measurement, and Interpretation (29 Dec.). Arranged by Ezra Glaser (U.S. Office of Education, Washington, D.C.).
- ☐ American Statistical Association
 - Organizing Quantitative Data for Scientific Application: Issues Faced by the President's Commission on Federal Statistics (28 Dec.). Arranged by Morris B. Ullman (Bethesda, Md.) and Daniel Rathbun (President's Commission on Federal Statistics).
- ☐ Biometric Society
 - Smoking and Health Now (28 Dec.). Arranged by Abraham M. Lilienfeld (The Johns Hopkins University).

Atmospheric and Hydrospheric Sciences (W)

- ☐ Section Program
 - Lightning (27 Dec.). Arranged by Richard E. Orville (National Science Foundation).
 - Oceanography—Its Status Today and Outlook for the Future (28–29 Dec.). Arranged by Harris B. Stewart, Jr. (NOAA Atlantic Oceanographic and Meteorological Laboratories, Miami).

AAAS Annual Meeting

General Sciences (X)

- ☐ American Junior Academy of Science
 - Research Papers (28 Dec.). Arranged by Frank W. Starr (Waterloo Community Schools, Iowa).
- ☐ Association of Academies of Science
 - Science and the Environment: The Role of Academies in Understanding Our Environmental Needs (27 Dec.). Arranged by Wilmer W. Tanner (Brigham Young University).
- ☐ Parapsychological Association
 - Data from EEG and Other Areas of Parapsychology (28 Dec.). Arranged by E. Douglas Dean (Newark College of Engineering).

The following AAAS Sections and Affiliated Societies are scheduling Contributed Paper sessions:

- ☐ AAAS Section on Anthropology (27 Dec.).
- ☐ AAAS Section on Pharmaceutical Sciences (27 and 29 Dec.).
- ☐ American Society of Zoologists (ASZ) (27–29 Dec.)
 - ASZ/Division of Comparative Endocrinology (28–30 Dec.).
 - ASZ/Division of Comparative Physiology and Biochemistry (27–31 Dec.).
 - ASZ/Division of Developmental Biology (26 and 28–31 Dec.).
 - ASZ/Division of Ecology (28–29 Dec.).
 - ASZ/Division of Invertebrate Zoology (27 Dec.).
 - ASZ/Division of Systematic Zoology (27–28 Dec.).
 - ASZ/Division of Vertebrate Morphology (28–29 Dec.).
- ☐ Animal Behavior Society (26–27 and 29–31 Dec.).
- ☐ Ecological Society of America (30 Dec.).
- ☐ Herpetologists' League (28–30 Dec.).
- ☐ Society for the Scientific Study of Religion (26–27 Dec.).
- ☐ Society for the Study of Evolution (27–28 Dec.).

Plan to visit the Exposition of Science & Industry in the Sheraton Exhibit Hall, Concourse Level. Open 27–30 December from 10:00 a.m. to 6:00 p.m. Registrants free. Visitor badges are \$1.