

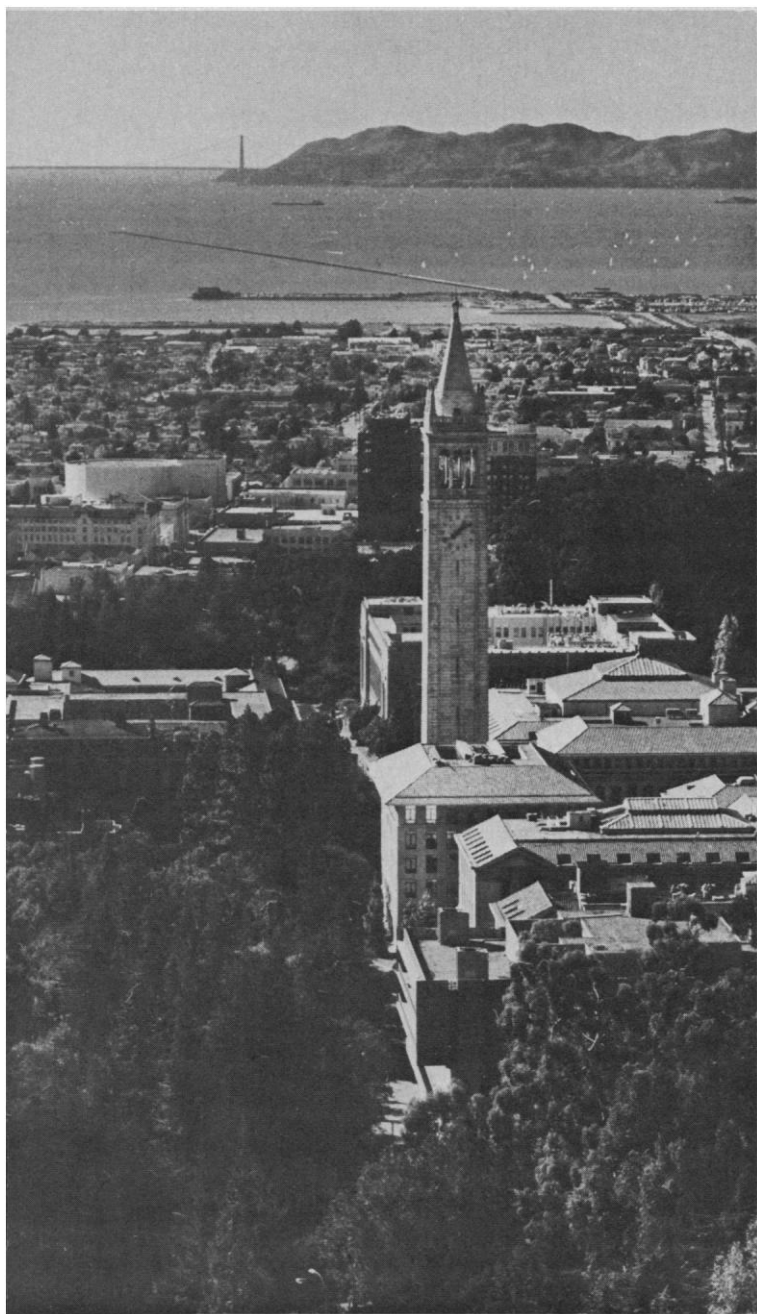


Annual Meeting  
San Francisco  
3-8 January 1980

## Meeting Program—Part II

Register in advance and receive a *free* 1980 AAAS Calendar with your Program; housing and registration forms can be found on pages 558 and 559. For further details, see the Preliminary Program, *Science*, 21 September, pages 1243 to 1252, and Tours, *Science*, 5 October, pages 43 to 47.

HOTEL CODES: San Francisco Hilton . . . (SFH); St. Francis . . . (STF)



Berkeley campus of the University of California with San Francisco Bay and the Golden Gate Bridge in the background. [University of California]

The theme for the forthcoming AAAS Annual Meeting in San Francisco, "Science, Our Common Heritage," is exemplified in the Meeting Program through the Public Lectures (see the Preliminary Program in the 21 September issue) and the set of 138 symposia (the first part was given in the 19 October issue and the remainder are listed below). You will find much in this program which celebrates our heritage from the developments at the frontiers of the natural and social sciences, through their historical and cultural underpinnings, to the implications which science and technology have for our current problems and policies.

The Annual Meeting in San Francisco, a city of special grace and charm, will be a special event for all of science and for all who recognize the heritage it is for humanity. Come and participate in our celebrations, renew your collegial contacts, enjoy the hospitality of the Golden Gate City, and, above all, be informed about your heritage. Register early (see the forms on pages 558 and 559) and ensure your place amidst the holiday bustle.

—ARTHUR HERSCHMAN

### 11. Medical Science

**Endorphins and Other Endogenous Opiate-Like Substances (4 Jan., 9:00 a.m., STF):** History; synthesis, metabolism and binding; anatomic distribution; effects in animals and humans; neuropsychopathology.

William L. Dewey, Martin W. Adler, Eric J. Simon, Stanley Watson, Huda Akil, William R. Martin.

**Regression of Atherosclerosis in Monkeys: Implications for Human Atherogenesis (4 Jan., 2:30 p.m., STF):** Survey of data, pathological evidence, radiologic evidence, hypothetical mechanisms, implications of experiments.

M. René Malinow, Mark L. Armstrong, Robert W. Wissler, David H. Blackenhorn, William E. Connor.

**The Measurement of Hypnotic Responsiveness: Its Relevance for Psychological Research and for Clinical Practice (5 Jan., 9:00 a.m., STF):** Hypnotic susceptibility, clinical significance and practice, induction profile.

Marion Kenn, Ernest R. Hilgard, Joseph Barber, Fred H. Frankel, David Spiegel.

**Self-Regulation of Physiological Response Systems Through Biofeedback: Basic Research and Clinical Applications (5 Jan., 2:30 p.m., STF):** Overview; thermal, EEG, and EMG biofeedback; operant conditioning; cardiac response.

Edward Taub, Bernard T. Engel, Joe Kamiya, Johann Stoyva.

**Psychoanalytic Self-Psychology: A New Bridge to the Other Behavioral Sciences (6 Jan., 9:00 a.m., STF):** Anthropology, psychology, implications for the other behavioral sciences.

Louis A. Gottschalk, Paul H. Ornstein, Mark J. Gehrie, Marian Tolpin, Michael F. Basch.

**Psychotherapy: From Practice to Research to Policy (6 Jan., 2:30 p.m., STF):** Research, mental health services, cost-effectiveness and benefit, markets, political factors.

Gary R. VandenBos, Christopher D. Pino, Herbert J. Schlesinger, Emily Mumford, Gene V. Glass, Brian T. Yates, Frederick L. Newman, Thomas G. McGuire, Patrick H. DeLeon.

**Immune Regulation and Oral Disease (7 Jan., 9:00 a.m., STF):** Immune homeostasis, autoimmunity, cell-cell interactions, transplantation, dental caries.

George R. Riviere, Andrew D. Dixon, William H. Hildemann, Robert F. Ashman, Rebecca S. Teague.

**Behavioral Medicine: The Biopsychosocial Interface (7 Jan., 2:30 p.m., STF):** Personality and stress, childhood malnutrition, community organization, illness prevention, biopsychosocial relationships.

Ronald W. Manderscheid, J. John Cohen, Linda S. Crnic, Joseph B. Tamney, Carlton A. Hornung.

**Vistas in Congenital Craniofacial Malformations (7 Jan., 2:30 p.m., STF):** Genetics, histocompatibility complex, treatment and habilitation.

Harold C. Slavkin, Michael Melnick, Joseph Bonner, Henry Kawamoto.

**Recent Advances in Embryology—Impact for Human Affairs: Developmental Genetics of Early Mammalian Embryos (8 Jan., 9:00 a.m., STF):** Early mouse embryo, gene expression, animal models, genetic manipulation, external human fertilization.

Roger A. Pedersen, Gerald M. Kidder, Janet Rossant, Charles J. Epstein, Gail R. Martin, Clement L. Markert, Clifford Grobstein.

**Recent Advances in Embryology—Impact for Human Affairs: Experimental Embryology and Birth Defects (8 Jan., 1:30 p.m., STF):** Embryonic form and phenotype, extracellular matrices, muscle development, gene expression, developing tissues.

Arnold I. Caplan, Vincent C. Hascall, Frank E. Stockdale, Harold C. Slavkin, Merton R. Bernfield.

## **12. Public Health and Health Care**

**A Retrospect on the International Year of the Child (4 Jan., 9:00 a.m., 2:30 p.m., SFH):** Child health and human development, metacognition, children's manipulation of space, cross-cultural research, adolescents, early childhood intervention, social policy, infant development, genetic disorders, drugs and pregnancy, smoking, alcohol, obstetric medication.

Lewis P. Lipsitt, Tamah L. Sadick, Betty H. Pickett, John H. Flavell, Dorothy H. Eichorn, Herbert L. Pick, Jr., Michael Cole, Nicholas Hobbs, Ernesto Pollitt, Edward Zigler, Eileen Blumenthal, Charles J. Epstein, Sumner J. Yaffe, Mary B. Meyer, Lawrence D. Longo, Kenneth Jones, Yvonne Brackbill, Sara H. Broman.

**Measuring Impact on Health Status: An Examination of Issues and Problems (5 Jan., 9:00 a.m., SFH):** Public health, epidemiologic research, cause-of-death statistics, conceptual issues, need for indices, health outcome measures.

Martin K. Chen, Grace L. Yang, Jerzy Neyman, Lester Breslow, Theodore D. Woolsey, Stephen M. Shortell, Chin Long Chiang.

**Setting Health Policies for the 1980's (5 Jan., 2:30 p.m., SFH):** Medical school, local health agencies, priorities, costs, technology, financing, access, regulation.

Leah M. Lowenstein, Theodore Cooper, John I. Sandson.

**Ethical Issues in Human Reproduction Technologies: Analysis by Women (6 Jan., 9:00 a.m., SFH):** Contraceptive research, hospital and birth center, sex preselection, in vitro fertilization, women-oriented values.

Helen B. Holmes, Janice G. Raymond, Belita Cowan, Bylye Y. Avery, Judith M. Levy, Roberta Steinbacher, Ruth Hubbard, Emily E. Culpepper.

**Physiological Considerations in Radiation Biology (6 Jan., 2:30 p.m., SFH):** Tissue response, tumor response, radiation and hyperthermia, hypoxic cell radiosensitizers, radiation-drug interactions.

Fred W. Hetzel, Melvin L. Griem, Hubert A. Eddy, Haim I. Bicher, Theodore L. Phillips, Robert F. Kallman.

**Microwaves in Biology and Medicine (7 Jan., 9:00 a.m., SFH):** Physical and biophysical fundamentals, physiological reactions to intense fields, biological reactions to weak fields, diagnostic and therapeutic applications.

Don R. Justesen, Arthur W. Guy, Mary Ellen Chernovetz, W. Ross Adey, Carl H. Sutton, Przemyslaw Czerski, Joseph A. Elder, Om P. Gandhi, Richard D. Phillips, Morris L. Shore, James J. Smith.

**Ethnoepidemiology: The Marshall Islanders Twenty-Five Years After Exposure to Radiation (7 Jan., 2:30 p.m., SFH):** Ethnographic review, dose estimates from "Bravo," medical findings, Brookhaven-Marshalls medical program, ecology and adaptation, low-level radiation, problems in assessing.

Glenn H. Alcalay, Robert C. Kiste, Nathan A. Greenhouse, Hugh S. Pratt, Konrad P. Kotrady, F. R. Fosberg, Joseph E. Rall, John W. Gofman.

**The Theory and Practice of Preventive Dentistry (8 Jan., 9:00 a.m., STF):** Dental caries, periodontal disease, oral cancer control.

Samuel J. Wycoff, Steven J. Silverstein, Edward Green, Sol Silverman, Jr.

## **13. Economic and Political Science**

**The Long-Term Roots of Short-Term Decision-Making (4 Jan., 9:00 a.m., SFH):** Planning horizons, time perspective of industrialization, two kinds of society, physics of the short term.

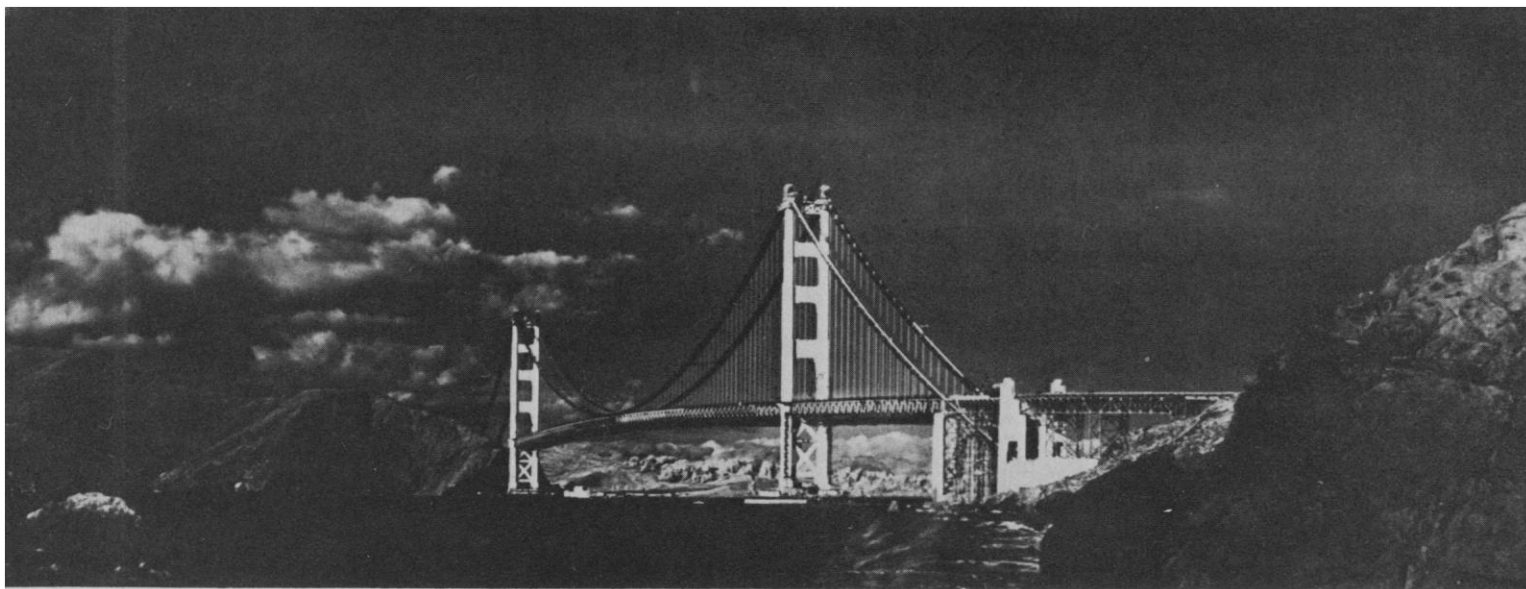
Charles J. Ryan, Paul W. Barkley, Willis W. Harman, Akos Ostor.

**Outlook for Large-Scale Energy Models (4 Jan., 2:30 p.m.; 5 Jan., 9:00 a.m., 2:30 p.m., SFH):** Economy-wide and sectoral models, industry, agriculture, transfer and alternatives, large-scale models.

Robert M. Thrall, Russell G. Thompson, Milton L. Holloway, Albert N. Halter, Lawrence Klein, Earl O. Hedy, C. West Churchman, William W. Hogan, Roger Glassey, James L. Sweeney, Lincoln E. Moses, Bart Holaday, George B. Dantzig, Charles C. Holt, Michael Rusin.

**Ending the Nuclear Arms Race (5 Jan., 9:00 a.m., 2:30 p.m., SFH):** Nuclear war, hazards of production, military budget, proliferation, socially productive jobs, national security, Salt III, role of scientists.

Joseph Weizenbaum, Jonathan King, Everett Mendelsohn, Philip Morrison, Linus Pauling, Henry W. Kendall, Helen Caldicott, Lloyd J. Dumas, Richard J. Barnett, William W. Winpisinger, Jeremy Stone.



Golden Gate Bridge. [California Historical Society Library]

**Science, Values, and the Politics of Agrarian Change in South Asia** (6 Jan., 9:00 a.m., 2:30 p.m.; 7 Jan., 9:00 a.m., SFH): New technology, peasant proprietorship, Indian agricultures, rural inequality, green revolution, technology transfer, international and national institutions, political weaponry, Sri Lanka, dryland agriculture, rice research, China, social agriculture.

Robert S. Anderson, Paul R. Brass, Edwin Levy, Barrie M. Morrison, Terence J. Byres, Aruna Nayyar Michie, Norman K. Nicholson, F. Tomasson Jannuzi, Frances M. Lappé, Peter Oram, Harry Cleaver, D. P. Singh, C. R. Panabokke, R. D. Dryden, Robert W. Herdt, Benedict Stavis, Richard R. Harwood.

**Inflation: Passion, Economics, and Statistics** (7 Jan., 2:30 p.m., SFH): Unpredictability, effects, shifting causes, econometric models, international economy, slowing price inflation.

William A. Gale, John A. Carlson, Paul D. Evans, Paul H. Earl, Michael R. Darby, Michael J. Bazdarich.

**The Contemporary Renaissance of Graphics in Statistics and the Social Sciences** (8 Jan., 9:00 a.m., SFH): Schematic representation, data analysis, graphic technology, newspaper graphs, technical communication.

Albert D. Biderman, Howard Wainer, Ramanathan Gnanadesikan, Vincent P. Barabba, Stephen E. Fienberg.

#### **14. Sociology and Anthropology**

**New Approaches to Explaining Cultural Complexity** (4 Jan., 9:00 a.m., SFH): Evolutionary model, agrarian mating systems, economic organization, Yangtze Delta, coastal Peru.

Robert C. Dunnell, Robert J. Wenke, Mildred Dickemann, Douglass C. North, Richard J. Pearson, Michael E. Moseley, Richard D. Alexander, David N. Knightley.

**The Interplay of Basic Research and Applied Projects in Anthropology** (4 Jan., 2:30 p.m., SFH): Food, development theory, energy scientists.

David G. Mandelbaum, Priscilla Reining, Elizabeth F. Colson, Edgar V. Winans, Laura Nader, Cyril S. Belshaw.

**Violence in American Society: Prevalence, Prediction, and Control** (5 Jan., 9:00 a.m., SFH): Television, biological substrates, delinquents, victims and aggressors, marital violence, contributions from different disciplines, corruption in American society, the prediction of risk, social control.

Edith Elisabeth Flynn, George Gerbner, Kenneth E. Moyer, Paul A. Strasburg, Murray Straus, Hans Toch, Marvin E. Wolfgang.

**The Anthropology of Medicine: From Culture Toward Method** (5 Jan., 9:00 a.m., SFH): Elites, symbolic healing, risk-taking, psychotherapy, Aztec medicine, New Guinea, culture-bound problems, medical education.

Lola Romanucci-Ross, John-Henry Pfifferling, Daniel Moerman, Lawrence Tancredi, Igor Grant, Clara Sue Kidwell, Robert L. Welsch, Doris A. Howell, Eugene Stead.

**Traditional Medicine and Science: Antagonism or Cooperation?** (5 Jan., 2:30 p.m., SFH): Medicinal plants, cooperative efforts, anthropological analysis, ethnobotany, ethical and political aspects.

Diana Ida Marinez, Bernardo Ortiz de Montellano, Xavier Lozoya, Edward Tso, John M. McCullough, Diana Ryesky, Eloy Rodriguez, Octavio Romano, Rayna Green.

**The 1980 Census: Scope, Uses, Procedures, and Evaluation** (6 Jan., 9:00 a.m., 2:30 p.m., SFH): Social research, business research, ethnicity, estimates of population, new techniques, appraisal, undercount, evaluation, experimental techniques.

Paul C. Glick, Conrad Taeuber, Vincent P. Barabba, Charles B. Nam, Robert J. Lavidge, Ira S. Lowry, Meyer Zitter, Peter A. Bounpane, Leobardo F. Estrada, David V. Bateman, Barbara A. Bailar.

**California as an Advanced Technological Society: Interpretations from the Social Sciences and Humanities** (7 Jan., 9:00 a.m., 2:30 p.m., SFH): Assessment of theories, work and workers, auto and telephone, voluntary simplicity, California mythology, house, ethos, religion.

Todd R. LaPorte, Eugene C. Lee, Ted K. Bradshaw, Larry Hirschhorn, Victor Ferkiss, Melvin M. Webber, Everett M. Rogers, Dorothy Leonard-Barton, Bruce R. Wheaton, Donald C. Swain, Richard Dillion, Sally B. Woodbridge, James Hughes, Mark Juergensmeyer, Josephine Miles, Neil J. Smelser.

**The Regulation of Environmental Resources in Food-Collecting Societies** (8 Jan., 9:00 a.m., 1:30 p.m., SFH): North America, North Australia, hunter-gatherer societies, mobility, fire technology, religious ideology, "community" and "society," Cape York, rural regulation.

Nancy M. Williams, Eugene S. Hunn, Catherine S. Fowler, Jane C. Goodale, Richard A. Gould, Henry T. Lewis, Fred R. Myers, Richard K. Nelson, Wayne Suttles, Peter Sutton, Bruce Rigby.

#### **15. Technology and Development**

**Internal and External Constraints on Technological Choice in Developing Countries** (4 Jan., 9:00 a.m., 2:30 p.m., SFH): De-

terminants of choice, endogeneous politico-economic systems, ecological implications, environmental research, traditional agricultural systems, technical aspects, policy issues.

Barbara G. Lucas, Stephen M. Freedman, Gustav Ranis, Walter R. Lynn, Norman B. McEachron, Lawrence J. White, Asit K. Biswas, Kenneth Hood, Pierre Crosson.

**Environmental Problems of Development in Latin America (6 Jan., 9:00 a.m., 2:30 p.m., SFH):** Food production, native Andean agriculture, urbanization, oil spill controls, mining activities, demography and environment, health issues, institutional problems, Mexican program, Latin American model.

Juan Valera-Lema, Marcelo Alonso, Hilgard O'R. Sternberg, Stephen B. Brush, Jesus H. Hinojosa, Roy W. Hann, Luis Malnati-Fano, Jose Lizarraga, Frank A. Butrico, Robert O. Otto, Humberto Romero-Alvarez, Gilberto Galopin.

**Assessing the U.N. Conference on Science and Technology for Development (7 Jan., 9:00 a.m., 2:30 p.m., SFH):** Criteria for assessment, new international economic order, planning and performance, U.S. delegation, international conferences, prospects, U.S. development policy, appropriate technology.

R. S. Ganapathy, Jurg Mahner, Victor Rabinowitch, Roger Revelle, Rodney Nichols, Charles Dennison, Harrison Brown, Aklilu Lemma, Fr. Theodore Hesburgh, John Hurley, John Friedman, Klaus Standke, Lestor Gordon, Ted Owens, Francisco Sagasti.

## **16. Information, Technology, and Society**

**Machine Intelligence and Perception: The Past, Present, and Future (4 Jan., 9:00 a.m., 2:30 p.m., SFH):** Systems in science and medicine, modeling for mineral exploration, musical analysis, Kurzweil machines, successful paradigms, pattern analysis, artificial intelligence, augmented intelligence, discovery in mathematics, speech and vision.

Judith M. S. Prewitt, Eamon B. Barrett, Edward A. Feigenbaum, Richard O. Duda, Peter E. Hart, Bernard A. Galler, Martin B. Piszczalski, Raymond C. Kurzweil, King-Sun Fu, Oliver G. Selfridge, Gregg Edwards, Douglas B. Lenat, D. Raj Reddy, Allen Newell, Marvin L. Minsky.

**Can Software Replace Technical Know-How? (5 Jan., 9:00 a.m., SFH):** Promise and dilemmas, intelligence in software, software that others write.

John R. Rice, Beresford Parlett, Fred T. Krogh, Albert Erisman.

**Information Communication in the 1980's and Beyond (5 Jan., 2:30 p.m., SFH):** Extension of thinking, systems and people's needs, dissemination, advancement.

Jack Belzer, Benjamin Bova, Lewis M. Branscomb, J. E. Goldman, A. J. McGill.

**Secure Communications and Asymmetric Cryptosystems (5 Jan., 2:30 p.m., SFH):** The new cryptography, hard problems, message authentication, public-key cryptography.

Gustavus J. Simmons, Leonard M. Adleman, Hugh C. Williams, Whitfield Diffie, Ralph C. Merkle.

**Integrated Impact Assessment: State-of-the Art and Future Prospects (6 Jan., 9:00 a.m., 2:30 p.m., SFH):** Negotiation and mediation, social impact assessment, psychological effects of technological change, policy analysis, fact and value, whole system analysis.

Frederick A. Rossini, Alan L. Porter, C. P. Wolf, Willis W. Harman, Lawrence E. Susskind, John H. Clippinger, Mary R. Hamilton, Irvin L. (Jack) White, Joseph F. Coates, Kenneth R. Hammond, Jeryl L. Mumpower, Richard N. L. Andrews, Mark Berg, Mark Boroush, Kan Chen, Kevin Shea, Kenneth J. Bowman, Vary T. Coates.

**Risk in the Technological Society (7 Jan., 9:00 a.m., 2:30 p.m., SFH):** Policy formulation, management, government mess,

extending human life, Three Mile Island, Love Canal, chemical industry.

Joseph F. Coates, Chrisoph Hohenemser, Robert W. Kates, Roger E. Kasperon, Chauncey Starr, Chris Whipple, S. Fred Singer, Stanley M. Gorinson, Russell W. Peterson, Eckardt (Chris) Beck, Paul Deisler.

**Computers and Telecommunications: Impacts on Society (8 Jan., 9:00 a.m., 1:30 p.m., SFH):** Field experience, the handicapped, personal computing, people amplifiers, talking back, computers and the worklife.

Starr Roxanne Hiltz, Robert Johansen, Murray Turoff, Robert Plummer, Larry Wilson, Kathy Criner, William von Meister, Michael Tyler, Gordon B. Thompson, Martin C. J. Elton, Jack M. Nilles, Earl Joseph, Nicholas Mullins, Rob Kling, Sherry Turkle, Joseph F. Coates.

## **17. History and Philosophy of Science**

**Science and Pseudoscience (4 Jan., 9:00 a.m., SFH):** Pathological science, lost knowledge, ancient wisdom, golden ages, rise of cults, the chimera.

Rolf M. Sinclair, Ray Hyman, E. C. Krupp, Rodney Stark, William Sims Bainbridge, James Randi.

**Is Ethics a Science? (4 Jan., 2:30 p.m., SFH):** Moral theories, ought it to be.

Carl P. Wellman, Elizabeth Flower, Archie J. Bahm, Richard B. Brandt, Abraham Edel, Virginia P. Held, Marcus G. Singer.

**Political Economy of Science: Modes of Social Assessment (5 Jan., 9:00 a.m., SFH):** Primitive indicators, power and structure, public assessment, violence, cancer.

Daryl E. Chubin, Alex C. Michalos, Robert F. Bud, P. Thomas Carroll, Jeffrey L. Sturchio, Arnold W. Thackray, Dorothy W. Nelkin, Judith Swayzey, James Petersen, Gerald Markle, Everett Mendelsohn.

**The Evolutionary Vision: Is There a Pattern Connecting Physical, Biological, and Sociocultural Evolution? (5 Jan., 9:00 a.m., SFH):** Generalized dynamics, synergetics, self-organization, metalinguistic approach, complementarity principle, human life-span context.

Erich Jantsch, Ilya Prigogine, Hermann Haken, Peter M. Allen, Lars Löfgren, Howard H. Pattee, Elise Boulding, Fritjof Capra.

**Technology: The Laws of Nature and the Needs of Humanity (6 Jan., 9:00 a.m., 2:30 p.m., SFH):** Utility of man, social justice, freedom and individual autonomy, technology and teletics, philosophy, impact of science, professionalism, interdisciplinary research.

Neal FitzSimons, Paul T. Durbin, Aristide H. Esser, Carroll W. Pursell, Jr., Norman Balabanian, Steven L. Goldman, Edwin Layton, Peter F. Pfaelzer.

**The Ecological Perspective in the Social Sciences: An Emerging Paradigm (7 Jan., 9:00 a.m., SFH):** Sociology, anthropological theory, economics, political science, psychology, geography.

Riley E. Dunlap, William R. Catton, Jr., Donald L. Hardesty, Herman E. Daly, John R. Rodman, Daniel Stokols, Daniel B. Luten.

**History as a Source of Alternative Technologies (7 Jan., 2:30 p.m., SFH):** Living history, reclaiming hydroelectric capacity.

Carroll W. Pursell, Jr., Jay Anderson, T. Allan Comp.

**History of Radio Astronomy (8 Jan., 9:00 a.m., SFH):** Before World War II, optical astronomy, Australian astrophysics, nature of science.

Woodruff T. Sullivan, III, Charles L. Seeger, Jesse L. Greenstein, Ronald N. Bracewell, Geoffrey R. Burbidge, Owen Gingerich.



The Cannery, at Fisherman's Wharf, formerly housed a peach-packing plant and now contains shops and restaurants. [San Francisco Convention and Visitors Bureau]

**Systems Science and Science (8 Jan., 1:30 p.m., SFH):** Viewpoint of a mathematician, scientist, philosopher, technologist, and social scientist.

George J. Klir, Roger E. Cavallo, Robert Rosen, Mario Bunge, John N. Warfield, Spyros Makridakis.

**Issues in Agriculture: Historians' Perspectives (8 Jan., 1:30 p.m., SFH):** Lexicographical research, political heritage, secretaries of agriculture, hitching science to the plow.

G. Terry Sharrer, John T. Schlebecker, James H. Shideler, Wayne D. Rasmussen, Vernon Carstensen.

## **18. Education**

**Recent Developments in Research on Stuttering (4 Jan., 9:00 a.m., SFH):** Speech production abilities, laryngeal dysfunction, genetic models, directions for research.

Christy L. Ludlow, Martin R. Adams, Frances J. Freeman, Edward G. Conture, Kenneth K. Kidd.

**Frontiers of Research on Theory and Practice in Education (4 Jan., 9:00 a.m., STF):** Explicit theories, information, processing models, learning theory, status of theory.

Joseph D. Novak, Fletcher Watson, Paul D. Hurd, Joseph I. Lipson, Adele Goldberg.

**Cognitive Aspects of Human Problem-Solving Processes (4 Jan., 2:30 p.m., STF):** Qualitative reasoning, adolescence, models of writing, medical.

Ruth B. Pitt, John Seely Brown, John R. Hayes, Lee S. Shulman.

**Social Science Education: A Problem of Intellectual Abandonment (5 Jan., 9:00 a.m., STF):** Content of school programs, teacher preparation, jump to the future.

Lawrence Senesh, John T. Mallan, John Platt, Kenneth E. Boulding.

**Liberal Education and the Natural Sciences (5 Jan., 2:30 p.m., STF):** Core curriculum, substance of science, science information, engineers and scientists, liberal arts college.

James H. Werntz, Ruth B. Pitt, Henry A. Bent, Arnold B. Arons, J. Alred Chiscon, George W. Hazzard, Vincent W. Cochran.

**Precollege Science Education—Status, Needs, and Policy Implications (6 Jan., 9:00 a.m., STF):** Biology education, physical science education, role of inquiry, technology and society, elementary education.

Norris Harms, Paul D. Hurd, Ronald D. Anderson, Wayne W. Welch, E. Joseph Piel, Harold Pratt.

**Policy Implications of a National Needs Assessment in Precollege Science, Mathematics, and Social Science Education (6 Jan., 2:30 p.m., STF):** NSF studies, project synthesis, school mathematics, social science education, policy implications.

Alphonse Buccino, Linda J. Ingison, Norris Harms, Alan R. Osborne, Irving Morrisett.

**Selected Issues in Education—New Insights from National Longitudinal Studies (7 Jan., 9:00 a.m., SFH):** Postsecondary education, work, family formation, disadvantaged youth, non-traditional attendance.

Ezra Glaser, Marie D. Eldridge, James J. Vanecko, David Munder, Lynn H. Fox, William J. Bowers, Glenn L. Pierce, Alan P. Wagner, Adair L. Waldenberg, Matthew Black, Frances R. Melone, Peter A. Morrison, Gus W. Haggstrom, James S. Coleman.

**Science Learning Outside the Classroom (7 Jan., 9:00 a.m., 2:30 p.m., SFH):** Informal science education, personal involvement, so little known, attracting and holding an audience, opportunity for choice, zoos, amateur science, television, good news and bad news.

Michael Templeton, Joseph I. Lipson, Robert A. Semper, David Hawkins, Watson M. Laetsch, Robert Knott, Mary Budd Rowe, Frank Oppenheimer, George Rabb, Andrew Fraknoi, Josephine Gladstone, George W. Tressel.

## **19. Opportunities and Responsibility in Science**

**Scientists as Whistle-Blowers: Eight Years of Experience Since the BART Engineers (4 Jan., 9:00 a.m., SFH):** Professional society support, due process trends, do's and don't's, corporate perspective.

Rosemary A. Chalk, William A. Thomas, Stephen Unger, David W. Ewing, Peter Raven-Hansen, Monte C. Throdahl.

**What Special Rights and Responsibilities Do Scientists and Engineers Have? (4 Jan., 2:30 p.m., SFH):** Ethical codes, proposed principles, historical perspective, public interest group, industrial scientist, corporate management, media perspective.

Joel R. Primack, Robert Baum, Rosemary A. Chalk, Walter P. Metzger, David R. Brower, Warren D. Niederhauser, Edward E. David, Jr., David Perlman.

**Effective Strategies for Promoting Participation of Women and Minorities in Science (6 Jan., 9:00 a.m., 2:30 p.m., SFH):** Mastery of mathematics, women's participation, underrepresented groups, career, labor force participation of women, effectiveness of career conferences, NSF efforts, programs for mature women.

Shelia M. Humphreys, Yolanda S. George, Lucy W. Sells, Nancy Kreinberg, Robert A. Finnell, Ruth C. Cronkite, Jean Paul Jacob, Betty M. Vetter, Lenore C. Blum, Linda J. Ingison, Alma E. Lantz.

**The Handicapped in Science (7 Jan., 9:00 a.m., 2:30 p.m., SFH):** Multisensory science activities, science activities for the disabled, fostering career interest, disabled dentists, employment of the handicapped.

Nansie S. Sharpless, Herbert D. Thier, Stuart M. Hirsch, Linda DeLucchi, Laurence Malone, James Gammon, Joanne B. Stolte, Philip H. Hatlen, Sanders W. Davis, Eugene Hittelman, Marie E. Gallagher, Samuel L. Barres, Richard L. Whitehouse, Nikola Z. Stanacev, James C. Marsters.



**Employment and Advancement Opportunities for Recent Doctorates in Science and Engineering (8 Jan., 9:00 a.m., SFH):** Young doctoral faculty, first employment plans, young investigators, industry, women doctorates.

Betty M. Vetter, Eleanor L. Babco, Lee Grodzins, Irene L. Gomberg, Dorothy M. Gilford, Alan Fechter, Herbert I. Fusfeld.

## 20. Science, Government, and Research

**Science Advice and Federal Policy (4 Jan., 9:00 a.m., 2:30 p.m.; 5 Jan., 9:00 a.m., SFH):** The White House, OSTP, how conflicting interests are balanced, governmental structure, congressional perspective, technology policy agenda, Global 2000, EPA, OTA, scientific evidence, science experts, regulatory policy, the judicial process.

Joseph F. Coates, Joseph V. Martinez, James E. Katz, Philip M. Smith, Richard L. Garwin, Jürgen Schmandt, John Stewart, Russell C. Drew, Gerald O. Barney, Irvin (Jack) White, John W. Reuss, Bruce N. Ames, George E. Brown, Devra L. Davis.

**Government/Industry/University Relations: The Influence of Federal Policies on R&D (5 Jan., 2:30 p.m., SFH):** Cooperative research, industry perspective, university-federal relationships, regulation, university-industry links.

Mary R. Hamilton, Osmund T. Fundingsland, Edward E. David, Jr., Cornelius J. Pings, Douglas M. Costle, George E. Brown, Jr.

**Intergovernmental Science Communication and Cooperation (5 Jan., 2:30 p.m., SFH):** Congressional communication,

mechanisms in California, scientific information, Baltimore applications project.

Phyllis Kahn, Harry Stevens, Jane Bortnick, Richard Brandsma, John B. Gage, Thomas S. Golden, Gordon O. Voss.

**Legal Aspects in the Administration of Scholarly Nonprofit Organizations (6 Jan., 9:00 a.m., SFH):** Copyright law, tax-exempt status, postal regulations, audit requirements.

James R. Batt, Jane M. Livermore, John D. Lane, Charles Duttweiler, A. Bruce Cropper.

**Research in the Age of the Steady-State University (6 Jan., 9:00 a.m., 2:30 p.m., SFH):** Five-year outlook, higher education, congressional perspective, government requirements, research laboratory, interdisciplinary research, small college and university, cooperation or conflict.

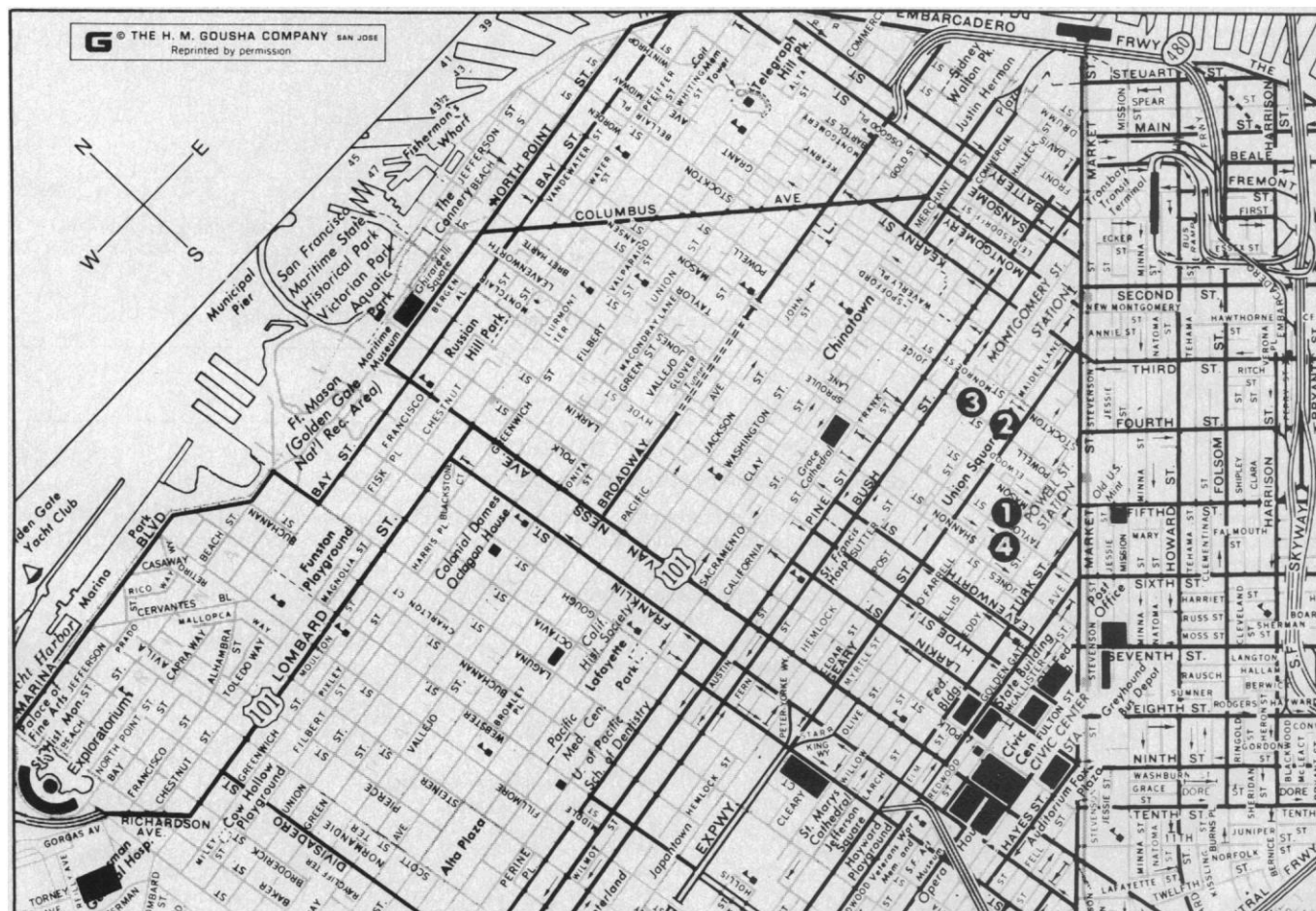
Don I. Phillips, Benjamin S. P. Shen, Gilbert S. Omenn, Michael O'Keefe, George E. Brown, Jr., John Lordan, Cornelius J. Pings, C. West Churchman, Claude Yoder, Carol Kaysen.

**Federal Funding Philosophies, Policies, and Procedures: Impact on Research in the Food and Agricultural Sciences (7 Jan., 2:30 p.m., SFH):** Federal support, decision-making, evaluation.

Mark T. Buchanan, Jarvis Miller, Gilbert S. Omenn, Denis J. Prager, Russell C. McGregor, Richard D. Lieberman, James M. Nielson.

**How Much Does the Defense Department Advance Science? (8 Jan., 9:00 a.m., SFH):** DOD-sponsored research, in-house research, DOD's support, DOD and science, science sponsorship.

D. David Triantos, George Gamota, Alan Berman, Edward I. Salkovitz, Edward Teller, George Wald.



Locations on this map are (1) San Francisco Hilton, (2) St. Francis, (3) Sir Francis Drake, (4) Airport Bus Terminal.



Annual Meeting  
San Francisco  
3-8 January 1980

ADVANCE REGISTRATION FORM  
(D)

- Please check appropriate boxes, complete remainder of form (type or print), and **enclose payment**.
- Preconvention Program, badge, and voucher for full Program and Abstracts will be mailed to registrants in early December.
- Full Program and Abstract Volume will be held at *Advance Registrants' Desk* at the San Francisco Hilton.
- **Registrations received after 14 December will be held at the AAAS Information Booth at the San Francisco Hilton.**
- Special one-day attendance registration will be available at on-site Registration Desk only.

Registration Category	Regular		Student† or Retired	
	Single	Double*	Single	Double*
<input type="checkbox"/> AAAS Member	<input type="checkbox"/> \$27	<input type="checkbox"/> \$40	<input type="checkbox"/> \$14	<input type="checkbox"/> \$21
<input type="checkbox"/> Non-Member:				
<input type="checkbox"/> Meeting registration only	<input type="checkbox"/> \$34	<input type="checkbox"/> \$47	<input type="checkbox"/> \$17	<input type="checkbox"/> \$24
<input type="checkbox"/> Register and join: Single membership**	<input type="checkbox"/> \$61	<input type="checkbox"/> \$74	<input type="checkbox"/> \$37†	<input type="checkbox"/> \$44†
<input type="checkbox"/> Register and join: Double membership		<input type="checkbox"/> \$86*		<input type="checkbox"/> \$56†*

†Full-time undergraduate or graduate students only.

\*Registrant and spouse (if newly joined, membership includes single subscription to *Science*, 51 issues per year).

\*\*Specify name of new member \_\_\_\_\_

NOTE: 1979 Membership Dues: Regular Member, \$34; Student or Emeritus, \$23; Spouse (or Emeritus without *Science*), \$12. (These are domestic membership rates; inquire for Canadian and other foreign rates.)

NAME OF REGISTRANT: \_\_\_\_\_  
(Last Name) (First and Initial)

NAME OF SPOUSE REGISTRANT: \_\_\_\_\_  
(Last Name) (First and Initial)

REGISTRANT'S MAILING ADDRESS: \_\_\_\_\_  
[For receipt of program(s), badges(s),  
and *Science* (for new applicants)]  
(Street)  
(City/State) (Zip Code)

ADDITIONAL REGISTRANTS: \_\_\_\_\_  
(With same mailing address. Use new  
form if address differs.)

REGISTRANT'S  
INSTITUTION OR COMPANY: \_\_\_\_\_

(City)

(State)

(Zip Code)

CONVENTION ADDRESS: \_\_\_\_\_  
(Where you can be reached) (Hotel or Street Address, and/or Phone No.)

Check days attending: Thu ☐ Fri ☐ Sat ☐ Sun ☐ Mon ☐ Tue ☐

☐ Please check here if you need special services due to handicap. We will contact you prior to the meeting.

Mail to: American Association for the Advancement of Science, Dept. R,  
1515 Massachusetts Ave., NW, Washington, D.C. 20005

SURVEY OF ATTENDANTS

Annual Meeting, San Francisco, 3-8 January 1980

Your answers to the following questions will help us in planning future AAAS Annual Meetings. Please complete the following form and either return it with your registration form or send in separately (to the same address) if you wish to respond anonymously (in any case, the two forms will be processed separately).

Principal Professional Interest		Principal Professional Activity		Institutional Affiliation Type	
11 <input type="checkbox"/> Physical, mathematical	21 <input type="checkbox"/> Teaching, education	31 <input type="checkbox"/> University, 4-year college			
12 <input type="checkbox"/> Biological, medical	22 <input type="checkbox"/> Health practice	32 <input type="checkbox"/> Other educational			
13 <input type="checkbox"/> Engineering	23 <input type="checkbox"/> Other practice, consulting	33 <input type="checkbox"/> Industrial, commercial			
14 <input type="checkbox"/> Social, behavioral	24 <input type="checkbox"/> Research, development	34 <input type="checkbox"/> Other private			
15 <input type="checkbox"/> Science policy	25 <input type="checkbox"/> Administration	35 <input type="checkbox"/> Government			
16 <input type="checkbox"/> ..... (other)	26 <input type="checkbox"/> ..... (other)	36 <input type="checkbox"/> ..... (other)			

Highest Educational Level		Age		Number of Past AAAS Meetings Attended		Distance Traveled to Meeting	
41 <input type="checkbox"/> Doctoral Degree	51 <input type="checkbox"/> Under 26 years	61 <input type="checkbox"/> None	71 <input type="checkbox"/> Under 51 miles				
42 <input type="checkbox"/> Master's Degree	52 <input type="checkbox"/> 26 to 35 years	62 <input type="checkbox"/> One	72 <input type="checkbox"/> 51 to 150 miles				
43 <input type="checkbox"/> Other professional	53 <input type="checkbox"/> 36 to 45 years	63 <input type="checkbox"/> Two	73 <input type="checkbox"/> 151 to 400 miles				
44 <input type="checkbox"/> Bachelor's Degree	54 <input type="checkbox"/> 46 to 55 years	64 <input type="checkbox"/> Three	74 <input type="checkbox"/> 401 to 1000 miles				
45 <input type="checkbox"/> ..... (other)	55 <input type="checkbox"/> 56 to 65 years	65 <input type="checkbox"/> Four	75 <input type="checkbox"/> 1001 to 3000 miles				
	56 <input type="checkbox"/> Over 65 years	66 <input type="checkbox"/> Five or more	76 <input type="checkbox"/> Over 3000 miles				

## ROOM RATES\* AND HOUSING FORM

Reservations received after 13 December cannot be assured.  
The Housing Bureau will not accept any reservations by telephone.

Annual Meeting  
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Hotels		Single	Double & Twin	Parlor + 1 Bedrm.	Parlor + 2 Bedrms.	Parking**
SAN FRANCISCO HILTON <i>Headquarters Hotel</i> Mason & O'Farrell Streets (No. of rooms held: 1100)		\$38	\$53			
	Main	42	57	\$161	\$260	Main Bldg., 5th-11th Floor only: Free parking next to your room (subj. to availability).
	Bldg.	46	61	and up	and up	
	Tower	\$58 62	\$73 77	\$174 and up	\$287 and up	Valet parking @ \$6.75 per day for reg. and non-reg. guests with in-and-out privileges.
HOTEL ST. FRANCIS Union Square (No. of rooms held: 600)		\$38	\$53			
	Main	42	57	\$110	\$171	\$7.00 per day valet parking with in-and-out privileges for registered guests only
	Bldg.	46	61	and up	and up	
	Tower	\$62	\$77	\$180 and up	—	
SIR FRANCIS DRAKE Powell & Sutter Streets (No. of rooms held: 200)		\$36	\$51			
		40	55	\$165		\$6.75 per day limited parking with in-and-out privileges for registered guests only
		44	59			

\*Room rates per day; add 8% San Francisco room tax. Extra person in a room: Hilton and St. Francis, \$15; Sir Francis Drake, \$12.

\*\*Parking rates subject to change. Persons not registered in these hotels may park at same rates, but do not have in-and-out privileges. Commercial parking is also available in garages located on Mason & O'Farrell across from the Hilton, beneath Union Square, and on Sutter & Stockton.

NOTE: If room rate specified is not available, the next available higher rate will be assigned. Confirmation will come to you from the Housing Bureau, which must be notified of any room cancellation up to 18 December 1979. All other changes, and all cancellations after 18 December, must be made directly with the hotel.

Please type or print!

### AAAS HOUSING FORM

Please type or print!

CHOICE OF HOTEL: First \_\_\_\_\_ Second \_\_\_\_\_ Third \_\_\_\_\_

ROOM: ☐ Single ☐ Double ☐ Twin SUITE: ☐ 1 Bedroom ☐ 2 Bedrooms PREFERRED RATE: \$ \_\_\_\_\_

Please indicate any special housing needs due to a handicap: \_\_\_\_\_

ARRIVAL DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ ☐ a.m. ☐ p.m.

DEPARTURE DATE: \_\_\_\_\_ TIME: \_\_\_\_\_ ☐ a.m. ☐ p.m.

Be sure to list definite arrival and departure date and time. Reservations will be held only until 6 p.m. unless accompanied by 1 night's deposit.)

### NAMES AND ADDRESSES OF ALL OCCUPANTS OF ROOM

Name \_\_\_\_\_

Name \_\_\_\_\_

Street \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Street \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

If more than one occupant per room,  
confirmation to be sent to (state name): \_\_\_\_\_

Mail to: AAAS Housing Bureau  
1390 Market Street, Suite 260, San Francisco, CA 94102