A black and white photograph of the San Francisco Bay Bridge, showing its iconic towers and suspension cables. The bridge spans a body of water, with city lights visible in the distance. The foreground is dark, possibly showing trees or foliage.

**Annual
Meeting**

San Francisco

3-8 January 1980



Since the earliest times we have attempted to understand the environment in which we have been placed and from which we gain nurture and, thereby, exercise better control over our lot. Our understanding has proceeded in minute increments as each insight was tried and tested, sometimes meeting with success but most often with failure, thence to be modified and tried again. Our thinkers and scholars have sought, for millennia, for rules and procedures whereby more potent insights might be obtained, insights whose successes would far outstrip their failures. These procedures were most often expressed in the language of magic and mysticism and involved rules for the placation of specific divinities, the identification of portents and omens, and the ascribing of fatalistic powers to natural phenomena like the motion of the planets, the occurrence of eclipses, or the vagaries of the weather or the landscape. Perhaps the most definitive statement regarding this approach was that of Meister Eckhart in the 14th century, who opined that knowledge of the secret names of things would result in power over them.

An alternative and far more plodding approach was that of Galileo some three centuries later, with his insistence on careful observation and testing of hypotheses, as well as their systematic revision to improve their success. This approach, further expanded and refined by many great minds over the last four centuries, has resulted in the phenomenon which we call modern science, a way of thinking which has resulted in an unprecedented understanding of our environment and an unprecedented capacity to control it. This way of thinking, together with the body of knowledge it has produced and the technological capabilities this knowledge has made possible, is the heritage of all of us. This more methodical path has proven the more fruitful one in satisfying our earliest yearnings but it has not been a superhighway; just as each bit of knowledge laboriously wrested forth has revealed a complexity of problems to be solved, so has each element of control we have placed over our environment revealed a dark side which must, in turn, be corrected.

If our heritage has given us anything, it has given us a sense of optimism, a grounding of hope that we may, indeed, prevail; the path has been a good one and the search has been rewarding. And if we are as methodical in our testing and evaluation in understanding (and controlling) our broader horizons as we have been in understanding our more localized and isolated paradigms, we can extend our path outward to the cosmos, as well as inward to our selves, and have the good in our results far outweigh the bad. Yet there is more; our four cen-

turies of expanded progress has been truly a cooperative venture, cutting across boundaries of nationality, race, creed, or gender. It has flourished wherever we have permitted the free interchange of ideas and information, wherever we have allowed public knowledge to be truly public, that is, published.

The forthcoming AAAS Annual Meeting will celebrate "Science: Our Common Heritage," first, through celebrating the centennial of our contribution to the free interchange of ideas, *Science*, and through celebrating our dedication to the process of bringing more of our citizens into our evaluations through a wider dissemination of ideas and information about science, by launching *Science 80*. Our celebration will present many distinguished speakers in public lectures and in symposia, who will explore the early beginnings of our understandings and some of the deviant pathways followed, will delineate the frontiers now before us, and speculate on what may lie beyond. They will consider the state of our technologies, including their dark sides of maldistribution and of potential hazard, with the requirements for care in development and evaluation which these necessitate, as well as the opportunities which lie ahead for future work, and the implications there for public policy and public welfare.

A perusal of the formal Meeting Program on the next several pages will show a wealth of material on all aspects of science, technology, and the public policy issues involved with them. Several other aspects of the Meeting are not included in these pages, for example, the wonderful set of scientific tours (see the 5 October issue) arranged by the San Francisco Advisory Committee under the able chairmanship of David S. Saxton (President of the University of California) and Edward L. Ginzton (Chairman of the Board of Varian Associates), the exciting collection of films on and about science to be shown at the *Science Film Festival*, *SCIENCE INTERNATIONAL*, and a number of special meetings of related groups held during the week, such as the open hearings of the National Commission on Research, which is looking toward improvements in the relationship between the federal government and the nation's research universities.

All in all, there is much being offered for the celebration of our common heritage, much which you cannot afford to miss. Come and partake of this intellectual feast and, along the way, partake of the cultural feast that is San Francisco. Make your reservations early; air space is limited at holiday time; registration forms will be found at the end of the Program on the following pages.

—ARTHUR HERSCHMAN

Photo, preceding page, courtesy of San Francisco Convention & Visitors Bureau

Advance registrants (see forms on pages 820 and 821) will receive a free 1980 AAAS Calendar with their registration package in San Francisco. For information on Tours and the Film Festival see *Science*, 5 October 1979.

Preconvention Program

Science: Our Common Heritage

Public Lectures

- **AAAS Keynote Lecture (3 Jan., 8:30 p.m., SFH).**
Simon Ramo (Director, TRW, Inc., Redondo Beach, California).
Technological Innovation in the U.S. in the 1980s.
- **George Sarton Memorial Public Lecture (4 Jan., 1:30 p.m., SFH).**
Charles C. Gillispie (Dayton-Stockton Professor of the History of Science, Princeton University).
Is the Inwardness of Science Extraneous to Its History?
- **AAAS Public Lecture (4 Jan., 8:30 p.m., SFH).**
Rolasy S. Yalow (Senior Medical Investigator, VA, Veterans Administration Hospital, Bronx, N.Y.).
Radioimmunoassay—A Serendipitous Tool for Biology and Medicine.
- **AAAS Public Lecture (5 Jan., 1:30 p.m., SFH).**
John M. Ziman, Professor of Physics, University of Bristol, England).
Science—The New Model.
- **AAAS Public Lecture (5 Jan., 8:30 p.m., SFH).**
Abraham Pais (Professor of Physics, Rockefeller University).
Reflections on Einstein's World.
- **AAAS Public Lecture (6 Jan., 1:30 p.m., SFH).**
John R. Pierce (Professor of Electrical Engineering, California Institute of Technology).
Scientific Communication and Science
- **AAAS President's Public Lecture (6 Jan., 8:30 p.m., SFH).**
Kenneth E. Boulding (President, American Association for the Advancement of Science; Professor of Economics, University of Colorado).
Science: Our Common Heritage.
- **Phi Beta Kappa Public Lecture (7 Jan., 1:30 p.m., SFH).**
William A. Nierenberg (Director, Scripps Institution of Oceanography; Vice Chancellor of Marine Sciences, University of California at San Diego).
Cyrano, Physics—and Possibly Aristotle.
- **AAAS Public Lecture (7 Jan., 8:30 p.m., SFH).**
Victor F. Weisskopf (Institute Professor of Physics, Massachusetts Institute of Technology).
Science, Technology, and Culture.

1. General Interest

Frontiers in the Social Sciences (4 Jan., 9:00 a.m., SFH): Culture after sociobiology, aging from birth to death, psychology in public policy.

Priscilla Reining, David L. Sills, Paul Bohannon, Matilda White Riley, Charles A. Kiesler.

Co-Chairmen's Symposium: Very Large Scale Integrated Circuits—Implications for Our Society (4 Jan., 2:30 p.m., SFH): Technology, implications for science, economic implications, implications for society.

David S. Saxon, Edward L. Ginzton, C. Lester Hogan, Gordon E. Moore, John S. Mayo, Nathan Rosenberg, W. Edward Steinmuller, John R. Pierce.

Youth Symposium: Frontiers of Science (5 Jan., 9:00 a.m., 2:30 p.m., SFH): Accidents, discoveries, and the prepared mind; Jupiter fly-by; observing galaxies; meaning of porpoise sounds.

David S. Saxon, Edward L. Ginzton, W. M. Laetsch, Jaime Oaxaca, Hubert Alyea, Arthur Lane, Sandra Faber, Kenneth S. Norris.

The Frontiers of the Natural Sciences (6 Jan., 9:00 a.m., 2:30 p.m., SFH): Voices of whales, terrestrial planets, black holes, chemistry, statistics and ESP, x-ray astronomy.

Rolf M. Sinclair, D. Allan Bromley, Roger S. Payne, Laurence A. Soderblom, Remo Ruffini, Fred Basolo, Persi Diaconis, Stephen S. Murray.

2. Science Centennial

Judgment, Ritual, and Technology in Scientific Communication: The Role of the Editor (5 Jan., 9:00 a.m., 2:30 p.m., SFH): Human element, scientific element, historical editing of scientists' writings, quality, judgment, standards, primary-secondary interface.

Miriam Balaban, Philip H. Abelson, Derek de Solla Price, Reese V. Jenkins, Robert A. Day, Bernard Forscher, Edward J. Huth, Robert Beck, Cyril Belshaw, Eugene Garfield, H. Edward Kennedy.

The Centennial of Science (6 Jan., 9:00 a.m., SFH): Scientific enterprise 1880, survival 1880–1895, Cattell 1894–1944, past and future.

Philip H. Abelson, Daniel J. Kevles, Jeff Sturchio, P. Thomas Carroll, Sally Gregory Kohlstedt, Michael M. Sokal.

Communicating Science (6 Jan., 2:30 p.m., SFH): Perspective; life, physical, and social sciences, and the public; future needs and opportunities.

Mary E. Corning, Derek de Solla Price, Philip H. Abelson, Ar-

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

Schedule of Contributed Papers

At the San Francisco Meeting, contributed papers will be presented in **poster session format only**, there will be no slide sessions. Abstracts for the individual papers can be found in the *Abstracts of Papers* volume, which is available on site to all registrants. The poster sessions will be held in the Tower Lobby at the San Francisco Hilton Hotel, and are scheduled as follows:

- **Poster Session I (4 Jan., 10:30 a.m.–11:45 a.m.).**
Physical Sciences.
- **Poster Session II (4 Jan., 12:15 p.m.–1:30 p.m.).**
Conservation and Environment.
- **Poster Session III (4 Jan., 2:00 p.m.–3:15 p.m.).**
Physics and Chemistry in Biology.
- **Poster Session IV (5 Jan., 10:30 a.m.–11:45 a.m.).**
Ecology and Agriculture.
- **Poster Session V (5 Jan., 12:15 p.m.–1:30 p.m.).**
Cell Biology, Virology, Oncology.
- **Poster Session VI (5 Jan., 2:00 p.m.–3:15 p.m.).**
Health Care, Medicine, Physiology.
- **Poster Session VII (6 Jan., 10:30 a.m.–11:45 a.m.).**
Pharmacology and Nutrition.
- **Poster Session VIII (6 Jan., 12:15 p.m.–1:30 p.m.).**
American Junior Academy of Science: Research Papers by High School Students.
- **Poster Session IX (6 Jan., 2:00 p.m.–3:15 p.m.).**
Education, Child Development, Aging.
- **Poster Session X (7 Jan., 10:30 a.m.–11:45 a.m.).**
Clinical and Experimental Psychology.
- **Poster Session XI (7 Jan., 12:15 p.m.–1:30 p.m.).**
Social Sciences.

nold S. Relman, Bryce L. Crawford, Jr., Renée C. Fox, Walter S. Sullivan, Edward E. David, Jr.

Science and Science: The Next Decade (7 Jan., 9:00 a.m., 2:30 p.m., SFH): Biochemistry, neuroscience, immunology, genetic intervention, quarks, chemistry, plate tectonics, cosmology.

Norman Metzger, David Perlman, Daniel E. Koshland, Jr., Richard F. Thompson, Joseph M. Davie, Clifford Grobstein, Arthur Fisher, Sidney D. Drell, George C. Pimentel, Preston Cloud, Geoffrey Burbidge.

The World of Tomorrow (8 Jan., 9:00 a.m., SFH): Scientists and science-fiction writers, views of the future.

Jerry E. Pournelle, Rolf M. Sinclair, Robert W. Bussard, Ray Bradbury, Poul Anderson, Robert A. Heinlein, Fred Hoyle, Stefan T. Possony, Charles Sheffield.

3. Physics, Chemistry, and Astronomy

Nonfuel Uses of Petroleum, Petrochemicals (4 Jan., 9:00 a.m., SFH): Polymers, heterogeneous catalysis and homogeneous catalysis, food and feed.

Fred Basolo, J. Paul Hogan, Robert K. Grasselli, Denis Forster, John H. Litchfield.

A Star Is Born (4 Jan., 9:00 a.m., SFH): Where do stars form, molecular clouds, earliest stages, stellar evolution.

Frank H. Shu, Leo Blitz, Peter H. Bodenheimer, Leonard V. Kuhi.

The First Billion Years of the Earth's Existence (4 Jan., 2:30 p.m., SFH): Solar system, the Earth, life, evolution.

Cyril Ponnampuruma, Lynn Margulis, John A. Wood, Preston Cloud.

Discoveries Made by Recent Planetary Spaceprobes (5 Jan.,

2:30 p.m., SFH): The surfaces, geological evolutions, Jupiter, Venus.

Bradford A. Smith, Donat G. Wentzel, Tobias C. Owen, David Morrison, Laurence Soderblom, Andrew P. Ingersoll, Lawrence Colin.

Archaeoastronomy and the Roots of Science (6 Jan., 9:00 a.m., 2:30 p.m., SFH): Megalithic astronomy; observatories; meso-american astronomy; Maya, Aztec, and Inca; medicine wheels; California; Egyptian.

E. C. Krupp, Ronald E. Hicks, Archibald S. Thom, John B. Carlson, Anthony F. Aveni, John A. Eddy, Travis Hudson.

Science for the Naked Eye: Or the Physics of Everyday Experience, VII (7 Jan., 9:00 a.m., 2:30 p.m., SFH): Shroud of Turin, looking down on geology, music from bottles and tubes, bicycle riding, art discovery and restoration, computer-generated films.

Rolf M. Sinclair, R. N. Rogers, John S. Shelton, John G. Backus, Susan Rawcliffe, John Breakwell, John F. Asmus, Nelson L. Max.

Frontiers of Physics and Their Industrial Applications (8 Jan., 9:00 a.m., SFH): Surface physics, silicon technology, beam technologies.

D. Allan Bromley, Stig B. Hagstrom, Gerhard H. Parker, Donald Hammond.

4. Geology and Climate

Focus on the San Andreas Fault: Research Frontiers and Social Impacts (4 Jan., 9:00 a.m., 2:30 p.m.; 5 Jan., 8:30 a.m., SFH): Earthquakes, geological studies, mitigating hazards, seismic zonation, public response, engineering misconceptions, critical structures, earthquake predictions, ethnicity and credibility, trauma and children, field trip.

Raymond Sullivan, Raymond Pestrong, Bruce A. Bolt, Kerry E.

Sieh, James F. Davis, Earl E. Brabb, Thomas F. Saarinen, Harold J. McPherson, Karl V. Steinbrugge, Lloyd Cluff, C. Barry Raleigh, Robert A. Stallings, Stephen J. Howard, Jon S. Galehouse.

Environmental Setting of Early Man Sites (5 Jan., 9:00 a.m., SFH): Laetoli beds, rift valley setting, lower Omo Valley, Hadar site, Siwalik group, Cagayan Valley.

George R. Rapp, Jr., Carl F. Vondra, Richard L. Hay, Daniel R. Burggraf, Jr., Howard J. White, Hal J. Frank, Francis H. Brown, James Aronson, M. Taieb, Gary D. Johnson, Mark E. Mathisen, Erik P. Kvale.

Environmental and Societal Consequences of a Possible CO₂-Induced Climate Change (5 Jan., 2:30 p.m., SFH): Ocean biota and cryosphere, biosphere, agriculture, social and institutional responses, quantifying benefits and costs.

Roger Revelle, David M. Burns, Francis P. Bretherton, Boyd R. Strain, Sylvan Wittwer, Elise Boulding, Stephen H. Schneider, Lester B. Lave.

The Impact of Climate on Food Supplies (6 Jan., 9:00 a.m., 2:30 p.m., SFH): Food supplies, societal factors, anticipating impact, information systems, applied technology, weatherproofing crops.

Lloyd E. Slater, Walter Orr Roberts, F. Kenneth Hare, Stanley Ruttenger, John G. Corbett, Roger Revelle, James D. McQuigg, Carl N. Hodges, Norman J. Rosenberg.

Oceans from Space: Environmental Management from on High (7 Jan., 9:00 a.m., SFH): Coastal zone color-scanning, satellite oceanography, West Coast fisheries, shipping surveillance, marine environmental management.

Michael J. Herz, William A. Nierenberg, Robert C. Wrigley, Robert L. Bernstein, Laurence C. Breaker, Donn C. Walklet, John R. Apel.

New Horizons for Marine Geosciences (8 Jan., 9:00 a.m., 1:30 p.m., SFH): Continental margins, Antarctica, climate change, sedimentation and dynamics, man's structures, man-in-the-sea, deep-sea drilling, mineral resources, hydrocarbon resources, waste space, radioactive disposal.

H. Edward Clifton, Keith A. Kvenvolden, Joseph R. Curran, Dennis E. Hayes, Ted C. Moore, Paul D. Komar, David A. Cacchione, Robert G. Bea, James W. Miller, William W. Hay, Vincent E. McKelvey, Hollis D. Hedberg, Edward D. Goldberg, Charles D. Hollister.

5. Engineering and Technology

The Factory of the Future (4 Jan., 9:00 a.m., 2:30 p.m., SFH): State of the technology, economic and social implications.

Joel D. Goldhar, Richard E. Thomas, Joji Arai, Norman R. Berlat, J. F. Engelberger, Don T. Phillips, Thomas H. Spencer, Delbert Tesar, Dennis Wisnosky, Adlai E. Stevenson III, Jordan Baruch, Dennis Chamot, Frank R. L. Daley, Robert Lund, M. Eugene Merchant, Merton J. Peck, Wickham Skinner.

Space Policy for the 1980s: A New Era of Space Utilization (5 Jan., 9:00 a.m., SFH): Future policies and programs, science and exploration, military uses, commercial potentials.

John M. Logsdon, Ronald M. Konkel, Thomas Burke, Louis Friedman, Robert Davis, Gilbert Keyes, Jerry Grey.

Human Reliability in Complex Man-Machine Systems (5 Jan., 2:30 p.m., SFH): System-induced human error, reliability prediction, error rate.

John W. Senders, David Meister, Alan D. Swain, Donald Norman.

Macroengineering: The Rich Potential (6 Jan., 9:00 a.m., 2:30 p.m., SFH): Planning, mystique of success, water resources, space industrialization, Third World, solar research, orbiting platforms, waste disposal, orbital research habitats.

Robert J. Salkeld, Frank P. Davidson, John Evans, Kathleen Lusk, Thomas W. Kierans, Rashmi Mayur, J. Peter Vajk, C. Lawrence Meador, Ernest C. Okress, Ivan Bekey, Stanley G. Rosen.

International Comparisons of the Impact of Government Policies on Industrial Innovation (7 Jan., 9:00 a.m., SFH): Recent developments, West Germany, international trends, industrial performance, innovation gap.

Arthur Gerstenfeld, Helmar Krupp, Carole Ganz Brown, Robert Wright, Richard Franke.

Soft and Hard Technology—Coexistence or Divergence? (7 Jan., 2:30 p.m., SFH): Emerging social and political trends, energy problems, tough technology, space industrialization, value choices.

Peter E. Glaser, T. Stephen Cheston, John Naisbitt, Arnold Baker, Arthur Kantrowitz, Peter Vajk, Victor Ferkiss.

Issues Affecting the Future of Personal Transportation (8 Jan., 9:00 a.m., SFH): Conflicting social goals, passenger car, public transportation, post-1985 motor vehicle, mileage standards, socially acceptable vehicle.

S. William Gouse, Lester B. Lave, Sven A. Norland, Richard R. John, Larry R. Gsellman, R. Rhoads Stephenson.

Technology, International Economics, and Public Policy (8 Jan., 9:00 a.m., SFH): Industrial competence, innovation, U.S. technology, economic change, OECD.

Hugh H. Miller, Rolf P. Piekarz, Gunnar A. Hambræus, Richard A. Meserve, Thomas A. Vanderslice, Mary Ellen Mogee, Walter A. Hahn, David Z. Beckler, Bela Gold, N. Bruce Hannay, Nathan Rosenberg.

6. Energy Development

Energy in the 1980s: The Shape of Things to Come (4 Jan., 9:00 a.m., SFH): Energy crisis, energy trend, problem, development, policy.

Lewis J. Perelman, Barry Commoner, Dennis L. Meadows, John O'Leary, Richard Ottinger, Chauncey Starr, Daniel Yergin.

Chemical Solar Energy Conversion (4 Jan., 2:30 p.m., SFH): Petroleum plantations, solarchemical storage, nitrogen fixation, heat energy.

Arthur W. Adamson, William L. Jolly, Melvin Calvin, Harry B. Gray, Gerhard N. Schrauzer.

Solar Energy Development: Implementation and Implications (5 Jan., 9:00 a.m., 2:30 p.m., SFH): Solar alternatives and initiatives, industrialist's view, solar transition, political ramifications, environmental benefits.

Wallace C. Judd, Daniel Rich, Jon M. Veigel, Wilson Clark, Francis P. Koster, J. Robert Maxwell, Donald W. Aitken, Joseph L. Barrow, Jr., Allen M. Barnett, James J. MacKenzie, Richard T. Sylves, Denis Hayes.

Uranium Resources—Impact on the Nuclear Energy Option (6 Jan., 9:00 a.m., SFH): Supply outlook, mining viewpoint, security without the breeder, nuclear industry, international implications.

Daniel Berg, John A. Patterson, James F. Davis, Frank von Hippel, Karl Cohen, Philip J. Farley.

Direct Applications of Geothermal Energy (6 Jan., 2:30 p.m., SFH): Resource utilization, geology, environmental considerations, legislative process, land-use aspects, energy companies.

Ivar A. Engen, Richard W. James, Samuel R. Jewell, Paul J. Lineau, Duncan Foley, Susan G. Spencer, Douglas M. Sucarto, John Tuteur, Paul Rodzianko.

Nuclear Reactor Safety: A Current Perspective (7 Jan., 9:00 a.m., 2:30 p.m., SFH): President's Commission; Three Mile Island; reactor safety, design, operation and regulation; critical view; BEIR-III Report; low-level radiation; risk assessment; consequences.

Anthony V. Nero, Jr., Theodore B. Taylor, Roger J. Mattson, Ed L. Zebroski, Gregory C. Minor, Jacob I. Fabrikant, Robert C. Erdmann, Frank von Hippel.

The Prospects of Fusion Energy as a Commercial Power Source (8 Jan., 9:00 a.m., 1:30 p.m., SFH): Magnetic confinement, inertial confinement, advanced fuels, environmental considerations, utility requirements, engineering issues, hybrid fusion/fission.

Andrew M. Sessler, David J. Paul, Wulf B. Kunkel, Keith A. Brueckner, Robert W. Conn, John P. Holdren, Clinton P. Ashworth, Weston M. Stacey, Jr., Ronald P. Rose, John S. Foster, Jr.

7. Energy and Environment

Energy, Economics, and the Environment (4 Jan., 9:00 a.m., 2:30 p.m., SFH): Ecology, the poor, employment, strategic planning, state government, critical interactions, human settlement, regional growth, natural and man-built systems, economics, solar transition, nuclear future.

Gregory A. Daneke, Charles F. Cooper, Lenneal Henderson, L. John Hoover, Eric Stenehjelm, John Neubold, Mark Christensen, Thomas J. Wilbanks, Lawrence M. Sommers, T. R. Lakshmanan, Ian L. McHarg, Milton Russell, Barry Commoner, Edward Teller.

Energetic and Ecological Economics (5 Jan., 9:00 a.m., 2:30 p.m., SFH): Economic valuation, energy cost of energy, demand control, biophysical foundation, politics.

Herman E. Daly, Alvaro F. Umaña, Nicholas Georgescu-Roegen, Bruce M. Hannon, Kenneth Arrow, Kenneth E. Boulding, Garrett Hardin, Robert Constanza, Barry Commoner.

Public Attitudes Toward Resource Conservation and Energy (6 Jan., 9:00 a.m., 2:30 p.m., SFH): Attitudes, values, and public policy; supply versus demand; nuclear energy; risk-benefit attitudes; problems of measurement; energy shortage beliefs; the future; conservation policies.

W. David Conn, John H. Baldwin, Barbara D. Melber, Donald A. Clelland, Michael D. Bremseth, Harry J. Otway, Jon D. Miller, Baruch Fischhoff, William L. Rankin, Seymour Warkov, Frederick W. Allen, Jeffrey S. Milstein.

Tragedy of the Commons (7 Jan., 2:30 p.m., SFH): Health-care commons, immigration policy and practice, our genes, limits of sharing.

Carl J. Bajema, Garrett Hardin, Roger Conner.

Potential Role and Impacts of Decentralized Renewable Energy Systems (8 Jan., 9:00 a.m., 1:30 p.m., SFH): Small-scale systems, political realities, comparative analysis, social necessity or choice, solar prospect, complexity and scale, renewable and nuclear strategies, environmental dimension.

Mark D. Levine, Paul P. Craig, Jerome M. Weingart, Emilio E.

Varanini III, Barry Hyman, Charles J. Ryan, Luther P. Gerlach, Denis Hayes, Måns Lönnroth, John P. Holdren.

8. Environmental and Ecological Science

Costs of Pesticide Usage (4 Jan., 9:00 a.m., STF): Development, registration, and maintenance; agricultural production; regulations; environmental and social costs.

T. J. Sheets, R. E. Hamman, W. Gail Willette, E. L. Johnson, V. H. Freed.

Environmental Toxicology: A Discipline of Growing Importance (4 Jan., 2:30 p.m., STF): Industry's input, the workplace, national toxicology program.

Samuel Elkin, Leon Golberg, Trent R. Lewis, David P. Rall.

The Impact of Regulations on the Introduction of New Chemicals (5 Jan., 9:00 a.m., 2:30 p.m., STF): Toxic Substances Control Act, venture capital, environmental testing, risk assessment, toxic substances, workplace, drug evaluation, occupational health.

Curtis W. Smith, Virginia L. Zaratzian, Keith McKennon, Thomas W. Mooney, William J. McCarville, Steven D. Jellinek, Eula Bingham, Mark Novitch, Anthony Mazzocchi.

Resolving Conflicts Between Development and Wildlife Management on the West Coast (6 Jan., 9:00 a.m., 2:30 p.m., STF): Water and other limiting resources, marine mammals, sources of water, urban and rural areas, air quality, San Francisco Bay area, policies and priorities.

Edward O. Keith, Donald J. Zinn, Frank Gregg, George H. Hag-evik, Milton Feldstein, Eugene Y. Leong, B. J. Miller, Terry Bursztynsky, M. Rupert Cutler, Ariel Parkinson, Phillip W. Schneider.

UNESCO's Man and the Biosphere Program (MAB): Interdisciplinary and International Collaboration on Environmental Research (7 Jan., 9:00 a.m., STF): Natural and social sciences, temperate forests, biosphere reserves, arid lands plants, MAB as a coordinator, accomplishments.

Russell M. Burns, John W. Bennett, Donald R. King, Peter F. Ffolliott, Vernon C. Gilbert, Napier Shelton, Jack D. Johnson, Frederic H. Wagner.

Ecology of the Namib Desert (7 Jan., 2:30 p.m., STF): Strange creatures, the biota, dune ecosystem, demography of small mammals, eco-anatomy.

Mary K. Seely, Gordon L. Bender, David A. Hughes, G. N. Louw, Philip C. Withers, Chris H. Bornman.

Social and Political Implications of Human Impacts on the Desert (8 Jan., 9:00 a.m., 1:30 p.m., STF): American desert, wildlife habitats, human uses, images and perceptions, recreation, naturally functioning processes, desertification, public arid lands, California desert, the future.

Howard G. Wilshire, Kent Downing, Richard Schreyer, Robert H. Webb, John F. McCauley, Kristin H. Berry, Leonard Arrington, Thomas F. Saarinen, Walter Westman, Eleonora Sabadell, David Sheridan, Isaac C. Eastvold, Robert Badaracco.

9. Biological Science

Surfaces in Biology and Medicine (4 Jan., 9:00 a.m., STF): Gas-liquid surfaces, dust, analytical techniques, cell labeling, adhesion.

Allan S. Hoffman, Richard G. Buckles, Larry L. Hench, Margaret S. Burns, Alan Rembaum, Robert Baier.



The sixth annual *SCIENCE INTERNATIONAL* exposition of scientific instruments and publications will again be held in conjunction with the AAAS Annual Meeting. The exposition will be in the Hilton Plaza of the San Francisco Hilton Hotel, Friday, 4 January through Monday, 7 January. If your company or organization wishes to participate in *SCIENCE INTERNATIONAL*, please contact Edward B. Ruffing, SCHERAGO ASSOCIATES, 1515 Broadway, New York, N.Y. 10036; (212) 730-1050.

Genetic Control of Organelle Assembly at the Molecular Level (4 Jan., 9:00 a.m., STF): Transfer RNA, bacteriophage, virus shell assembly, bacterial flagella, eukaryotic flagella, genes and chromosomes.

Jonathan King, R. S. Edgar, Christine Guthrie, William B. Wood, Michael R. Silverman, Ursula W. Goodenough, Barbara A. Hamkalo.

Application of Molecular Biology to Agricultural Research (4 Jan., 2:30 p.m., STF): Vector, desirable genes, regeneration, tissue culture, genetic engineering, nitrogen fixation.

David H. Gelfand, Mary-Dell Chilton, Toshio Murashige, Ray Valentine.

Thermoregulation in "Poikilothermic" Animals (4 Jan., 2:30 p.m., STF): Reptiles, terrestrial beetles, fishes, bees.

Bernd Heinrich, Albert F. Bennett, George A. Bartholomew, Jeffrey B. Graham.

Animal, Plant, and Microbial Gene Resource Conservation: Does the United States Need a National Program? (5 Jan., 9:00 a.m., STF): Perspective of an evolutionist, U.S. programs, research, goals, collaborative approach.

David Kafton, G. Ledyard Stebbins, William L. Brown, Subodh Jain, Raymond F. Dasmann, S. Loren Cole.

Communication and Behavior of Whales (5 Jan., 2:30 p.m., STF): Feeding behavior; vocalizations; migration; songs; gray, killer, humpback, and southern right whales.

Roger S. Payne, August Pivorunas, Kenneth S. Norris, John K. B. Ford, James D. Darling, Katharine B. Payne, Peter L. Tyack.

Biological Time (6 Jan., 9:00 a.m., 2:30 p.m., STF): Sidereal time, circadian clocks, brain mechanisms, growth hormone, motor patterns, developmental timers, insects, human clocks.

Michael Menaker, James W. Truman, Colin S. Pittendrigh, Joseph B. Martin, Walter F. Heiligenberg, David Soll, Martin C. Moore-Ede, Charles A. Czeisler, Elliott D. Weitzman.

Chemistry of Vision (7 Jan., 9:00 a.m., STF): Molecular anatomy, electrical aspects, photoreceptors, rhodopsin, rod cell, visual excitation.

Wayne L. Hubbell, Edward A. Dratz, Denis A. Baylor, Richard A. Mathies, Paul A. Liebman.

Biological Significance of Bioelectricity (7 Jan., 2:30 p.m., STF): Living state and cancer, conduction in proteins, environmental electromagnetic energy, cell surfaces, regeneration.

Boguslaw Lipinski, Albert Szent-Györgyi, Ronald Pethig, Andrew A. Marino, Arthur A. Pilla, Stephen D. Smith.

Parasite-Host Ecology: Modern Perspectives (8 Jan., 9:00 a.m., 1:30 p.m., STF): Symbiotic associations, infectious diseases, population biology, lizard malaria, trypanosomiasis, ants and parasitic phorid flies.

Jos. J. Schall, Armand M. Kuris, Robert M. May, Gerald W. Esch, Terry C. Hazen, Douglas E. Gill, Beverly A. Mock, Donald H. Feener, Jr., John C. Holmes, Albert O. Bush.

10. Mathematical Methods in Biomedicine

The Role of Computing Sciences in Plant Disease Epidemiology and Integrated Pest Management (5 Jan., 9:00 a.m., 2:30 p.m., STF): Agro-ecosystems, crop protection, the next decade, insect population models, yield-loss modeling, communications systems, physical data, computer simulators, root disease, multiple component, models.

Samuel H. Smith, Robert C. Riley, Herman E. Koenig, James E. Bath, David R. MacKenzie, Alan J. Sawyer, Douglas I. Rouse, Stephen M. Welch, Stanley P. Pennypacker, Robert D. Shrum, Mary Ann E. Sall, Dean L. Haynes.

Some Mathematical Questions in Biology (6 Jan., 9:00 a.m., 2:30 p.m., STF): Blood flow, physiological time, morphogenesis, lichens and tendrils, harvests from the sea, population time-series data.

George F. Oster, Marjorie McCracken, Thomas A. McMahon, Joseph B. Keller, Robert M. May, David R. Brillinger.

Biological Geometry (7 Jan., 9:00 a.m., STF): Growth and form, plant growth, organ deformation, endocardial surface, fractals.

Judith M. S. Prewitt, Fred L. Bookstein, Ralph O. Erickson, Wendy Kuhn Silk, Larry T. Cook, Robert B. Schudy, Benoit B. Mandelbrot.

Stereology: A Mathematical Tool to Explore Three-Dimensional Space from Flat Images (7 Jan., 2:30 p.m., STF): Morphometry, point dispersions, critical mass, normal physiology, the nervous system, neuronal cell specificity, curvature and topology, morphology.

Hans Elias, Hanspeter Rohr, John E. Hilliard, Anna-Mary Carpenter, Herbert Haug, Gustav Bernroider, Robert T. de Hoff.

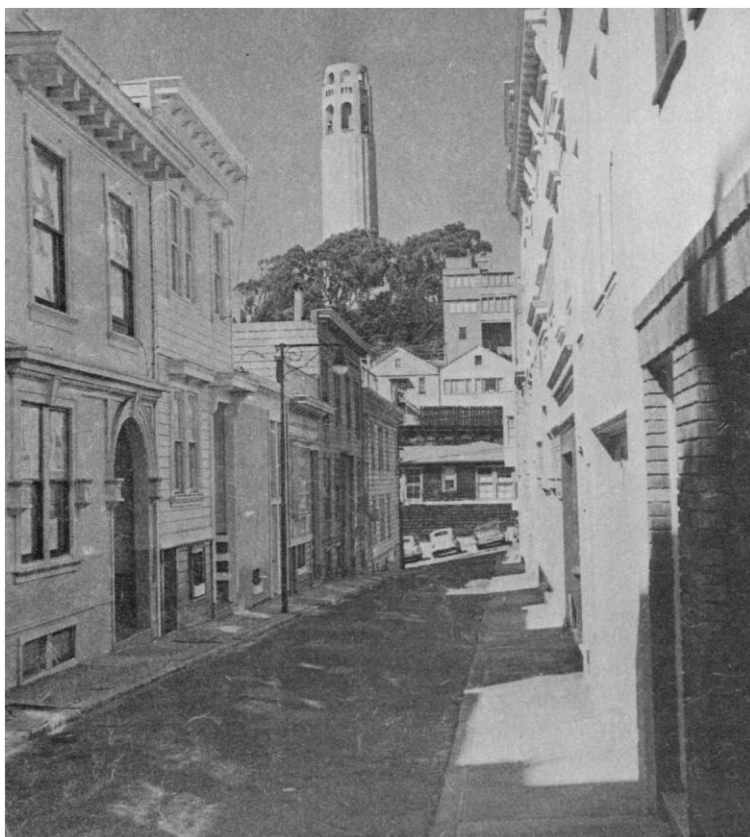
Computers in Drug Design (8 Jan., 9:00 a.m., 1:30 p.m., STF): Structure activity relations, pattern searching, geometry method, graphics, conformational parameters, nucleic acid, three-dimensional structure.

Irwin D. Kuntz, Robert Langridge, Corwin Hansch, Peter Gund, Peter C. Jurs, Gordon C. Crippen, Garland Marshall, Peter A. Kollman, Joseph Kraut.

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.



A view of Coit Tower on Telegraph Hill, San Francisco

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. Blankenhorn, 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. Ashmann, 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, Gerald Rosenthal, Jerzy Neyman, Lester Breslow, Theodore D. Woolsey, Stephen M. Shortell, Chin Long Chiang.

Setting Health Policies for the 1980s (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, Byllye 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, exposure limits.

Don R. Justesen, Arthur W. Guy, Mary Ellen O'Connor, 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): Dose estimates from "Bravo," medical findings, low-level radiation, problems in assessing.

Glenn H. Alcalay, Nathan A. Greenhouse, Hugh S. Pratt, 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. Heady, 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.

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 agriculture, rural inequality, green revolution, technology transfer, international and national institutions, political weaponry, agricultural universities, 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 Martinez, Bernardo Ortiz de Montellano, Xavier Lozoya Legorreta, 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, jural 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 Rigsby.

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): Determinants 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): View from U.S., global impact, comparison, view from Africa, international conferences, prospects, U.S. development policy.

R. S. Ganapathy, Jurg Mahner, Victor Rabinowitch, Roger Revelle, Rodney Nichols, Charles Dennison, Harrison Brown, Aklilu Lemma, John Hurley, John Friedman, Klaus Standke, Lestor Gordon, Miguel Wionczek.

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 '80s 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, psychological effects of technological change, policy analysis, human values, fact and value, environmental values and indicators, 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, Gordon A. Enk, Joseph F. Coates, Kenneth R. Hammond, Jeryl L. Mumpower, Richard N. L. Andrews, Jean Shorett, 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. Kasperson, Chauncey Starr, Chris Whipple, S. Fred Singer, Stanley M. Gorinson, Russell W. Peterson, Richard T. Dewling, Paul Deisler, Steven R. Reznick.

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 lifespan 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.

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, Linda Flower, 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. Wertz, Ruth B. Pitt, Henry A. Bent, Arnold B. Arons, J. Alred Chiscon, George W. Hazzard, Vincent W. Cochrane.

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 Pre-college 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., 2:30 p.m., SFH): Post-secondary education, work, family formation, disadvantaged youth, nontraditional attendance.

Ezra Glaser, Marie D. Eldridge, James J. Vanecko, David Mundel, 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'ts, 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, under-represented groups, career, labor force participation of women, effectiveness of career conferences, NSF efforts, programs for mature women.

Sheila 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. Fوسفeld.

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 G. Stewart, Russell C. Drew, Gerald O. Barney, Irvin (Jack) White, John W. Reuss, Bruce N. Ames, George E. Brown, Jr., 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, mecha-

nisms 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.

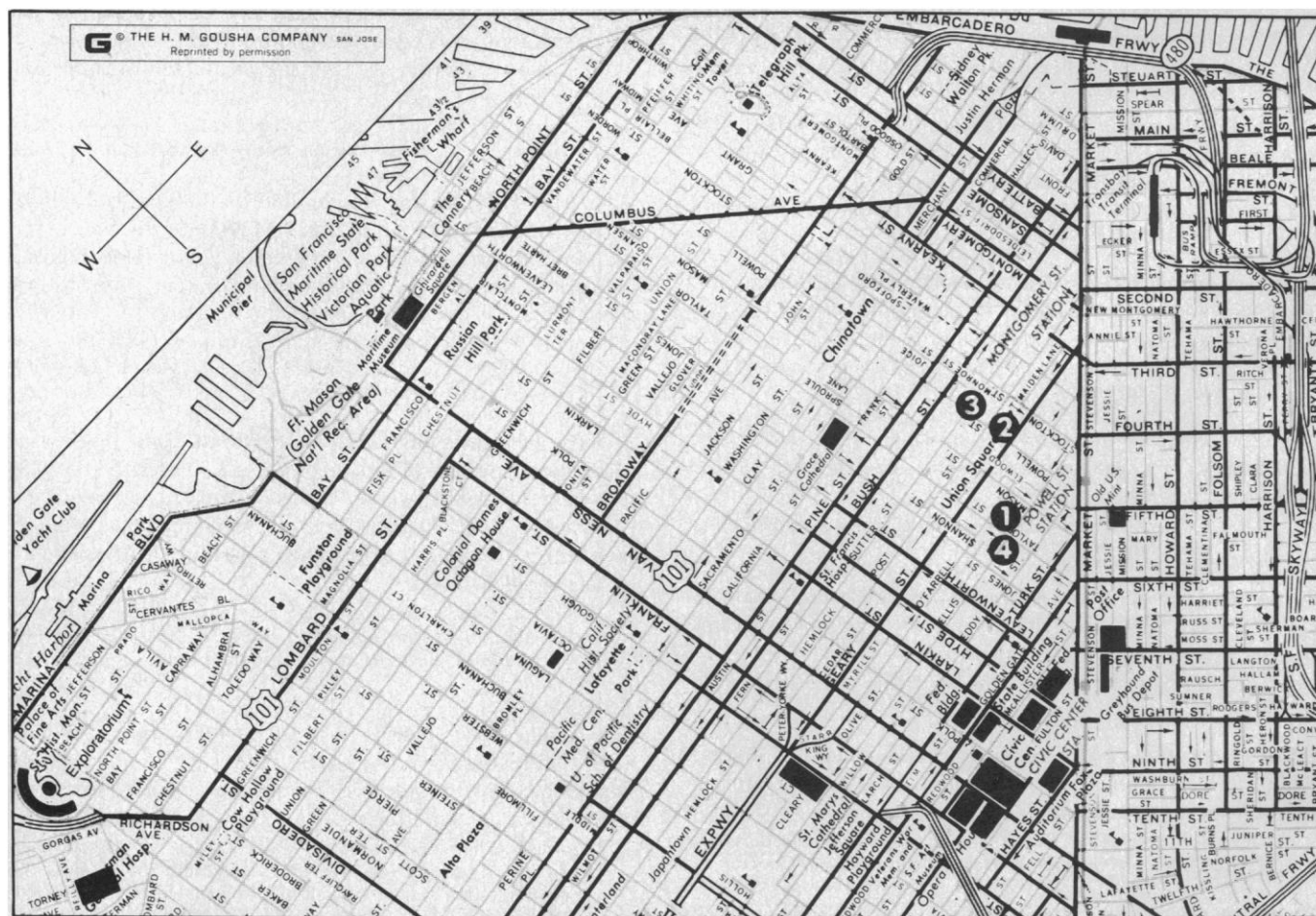
Don I. Phillips, Benjamin S. P. Shen, Gilbert S. Omenn, Michael O'Keefe, George E. Brown, Jr., John Lordan, Cornelius J. Pings, C. West Churchman, Claude Yoder, Carl Kaysen.

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.

Meeting Information

Listed below are the San Francisco hotels which are used by the AAAS for housing and program activities during the Annual Meeting. The three-letter codes in parentheses identify session locations in the preliminary program.

San Francisco Hilton (SFH): Symposia and public lectures; contributed papers (poster sessions only); business meetings; social functions; advance and on-site registration desks; welcome center (hospitality); resource center for disabled attendants; headquarters office; newsroom; employment information center; SCIENCE INTERNATIONAL (exhibits).

St. Francis (STF): Symposia; business meetings; social functions; AAAS office; *Science Film Festival*.

Sir Francis Drake: Housing only.

Since the hotels are located within easy walking distance of each other, there will be only one Meeting registration area located in the East Lounge of the San Francisco Hilton. For precise hotel locations, see map on page 1249.

Meeting Registration

Registration categories and fees are listed on the advance registration form (page 1250). The fee includes the full program book and the abstract volume.

Advance registrants, please note: We will *not* mail the full program prior to the Meeting. Instead, we will send you in early December an expanded pre-convention program, your badge, registration receipt, and a voucher redeemable on site for the program book, condensed program (foldout), abstract volume and, as a bonus for early registration, your free copy of the 1980 AAAS Calendar. Present your voucher at the advance registrants' desk in the San Francisco Hilton.

Advance and on-site registration desks will be located in the East Lounge at the San Francisco Hilton. (There will be no registration area in the St. Francis.) Registration hours are as follows:

Thursday, 3 January 2:00 p.m. to 6:00 p.m.
Friday through Monday,
4-7 January 8:00 a.m. to 6:00 p.m.
Tuesday, 8 January 8:00 a.m. to 12 noon

Registration Refunds

The AAAS will refund advance registration fees for all cancellations received by letter or telegram prior to 27 December 1979. NO REFUNDS WILL BE MADE ON CANCELLATION NOTICES RECEIVED AFTER THIS DATE. Refunds will be mailed from the AAAS Offices in Washington after the Annual Meeting.

Tax Deduction for Educational Expenses

Please note that U.S. Treasury Regulation §1.162-5 permits an income tax deduction for educational expenses (registration fees, and cost of travel, meals, and lodging) undertaken to (1) maintain or improve skills required in one's employment or other trade or business or (2) meet express requirements of an employer or a law imposed as a condition to retention of employment, job status, or rate of compensation. This is true even for education which leads to a degree.

Housing

In cooperation with the AAAS, the three San Francisco hotels used for housing and meetings have set aside—at guaranteed reduced rates—blocks of guest rooms for the attendants of the Annual Meeting. **These rates are guaranteed only when reservations are made through the AAAS Housing Bureau on the official housing form prior to 13 December 1979.** Room assignments will be delayed if any information is omitted from the forms.

Hotel rooms are assigned on a first-come, first-served basis. If the room rate you requested is no longer available, the next available highest rate will be assigned. If the first choice hotel cannot accommodate you, the Housing Bureau will assign the second choice you requested. Confirmation will come to you from the Housing Bureau,

which must be notified *in writing* of any room cancellations up to 18 December 1979. All other changes, and all cancellations after 18 December, must be made directly with the hotel.

Do not be a "no-show." If you have made a hotel reservation and find that you cannot attend the meeting, write to the Housing Bureau (or call the hotel) to cancel.

On request, the hotels will accommodate additional persons in guestrooms (for example, three in a double room) at the following extra cost: San Francisco Hilton and St. Francis, \$15; Sir Francis Drake, \$12. Children are accommodated free of charge in same room with parents; age limits are as follows: San Francisco Hilton, 18 and under; St. Francis, 17 and under; Sir Francis Drake, 12 and under.

Airport-to-Hotel Transportation

Buses operate between the San Francisco International Airport and the downtown bus terminal (located on Taylor and Ellis Streets diagonally across from the Hilton) at frequent intervals; the fare is \$1.75 and travel time is about 1/2 hour. Service is also available between the Oakland Airport and the same terminal. The taxi fare between San Francisco International Airport and the hotels is approximately \$14 and subject to change.

Resources for Disabled Attendants

The AAAS, in cooperation with the San Francisco Advisory Committee, is again making every effort to make the Annual Meeting fully accessible to disabled individuals. In addition to hotel rooms which can accommodate wheelchairs, and accessible meeting areas, the following resources will be available:

- A Resource Center staffed with volunteers to offer assistance on request.
- Assistance in movement within and between meeting hotels as needed.
- Transportation service to and from airports and train and bus stations, as needed.
- Interpreters for the hearing-impaired at all public lectures and for other sessions on request.
- Emergency repair service for wheelchairs.
- Special tour and sight-seeing information for disabled persons.
- Audiotaped highlights of the meeting program for persons with visual impairments.

Persons needing special hotel accommodations, interpreting services, and other assistance are strongly urged to so indicate on the advance registration and housing forms. Your early response will help us to plan and serve you better. Of the three participating hotels, one—the Sir Francis Drake—is not wheelchair-accessible. For additional information, contact Virginia Stern, AAAS Project on the Handicapped in Science, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036 (phone: 202/467-4496).

Employment Information Center

Adjacent to the exhibit area there will be bulletin boards for posting "positions wanted" and "positions open" notices. Also available will be small separated tables for conducting interviews. AAAS will not coordinate interactions between prospective employers and employees. **Hours:** 4-6 January, 10 a.m. to 5 p.m.; 7 January, 10 a.m. to 3 p.m.

Child Care Services

For Meeting attendants who require baby-sitters for infants and small children, or companion care for children 8 years and up, we have obtained the services of the **Bristol Agency (Phone: 415/776-9100)**. The agency is open daily from 8:30 a.m. to 8:30 p.m.; 24-hour notice is requested. All sitters are bonded and over 20 years of age. **Rates:** Day and evening, \$2.50 per hour (4-hour minimum) plus 50 cents for sitter's public transportation cost; after midnight, \$3.00 per hour (4-hour minimum) plus \$3.00 if the sitter has car, or \$3.75 if sitter uses public transportation.



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ADVANCE REGISTRATION FORM
(E)

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

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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	\$161	\$260	Main Bldg., 5th-11th Floor only: Free parking next to your room (subj. to availability).
	<i>Main Bldg.</i>	42	57	and up	and up	
		46	61			Valet parking @ \$6.75 per day for reg. and non-reg. guests with in-and-out privileges.
	<i>Tower</i>	\$58 62	\$73 77	\$174 and up	\$287 and up	
HOTEL ST. FRANCIS Union Square (No. of rooms held: 600)		\$38	\$53	\$110	\$171	\$7.00 per day valet parking with in-and-out privileges for registered guests only
	<i>Main Bldg.</i>	42	57	and up	and up	
		46	61			
	<i>Tower</i>	\$62	\$77	\$180 and up	—	
SIR FRANCIS DRAKE Powell & Sutter Streets (No. of rooms held: 200)		\$36	\$51			\$6.75 per day limited parking with in-and-out privileges for registered guests only
		40	55	\$165	\$205	
		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