AAAS Annual Meeting

New York, 24–29 May 1984

The New York Hilton and the Sheraton Centre

Science, Engineering, Technology, Education: Toward a World Perspective

Preconvention Program

Public Lectures

Keynote Address (24 May, 8:30 p.m., New York Hilton).
JOHN R. OPEL (*Chairman of the Board, International Business Machines Corporation*).

Toward a More Informed Electorate (25 May, 1:30 p.m., Sheraton Centre).
ELLEN V. FUTTER (*President, Barnard College*).

Topic to be announced (25 May, 8:30 p.m., New York Hilton).
WILLIAM D. RUCKELSHAUS (*Administrator, Environmental Protection Agency*).

Phi Beta Kappa Lecture: Science and the New Objectivity (26 May, 1:30 p.m., Sheraton Centre).
STEPHEN TOULMIN (*Committee on Social Thought, University of Chicago*).

The Age of Imperceptibility: A Challenge for Engineers and Scientists (26 May, 8:30 p.m., New York Hilton).
RICHARD J. GOWEN (*President, Institute of Electrical and Electronics Engineers*).

George Sarton Memorial Lecture: The Historian's Calling in the Age of Science (27 May, 1:30 p.m., Sheraton Centre).
ARNOLD THACKRAY (*Center for Advanced Study in the Behavioral Sciences*).

AAAS Presidential Lectures (27 May, 8:15 p.m., New York Hilton):

Scientific, Engineering, and Technological Knowledge and the Resolution of Societal Issues.
ANNA J. HARRISON (*Professor Emeritus of Chemistry, Mount Holyoke College*).

Science in a World Transformed.
DAVID A. HAMBURG (*President, Carnegie Corporation of New York*).

The Population Factor in Africa's Development Dilemma (28 May, 1:30 p.m., Sheraton Centre).
FRED T. SAI (*Professor of Community Health, University of Ghana Medical School*).

Politics, Scientists, and Truth: Reflections on a Fissionable Relationship (28 May, 8:30 p.m., New York Hilton).
MCGEORGE BUNDY (*Professor of History, New York University*).

Hotel Codes: H = New York Hilton
S = Sheraton Centre

Youth Symposium

Special program for high school students (24 May, 9:30 a.m., New York Hilton).

Allan Sachs, Anthony Galitsis, Homer A. Neal, David A. Hamburg, Lewis Thomas, Joseph Patterson, David Grossman, Wallace S. Broecker, Goldie L. Watkins, Rae Silver, Humberto Cordero, Jr., Lee L. Rubin, William B. F. Ryan, John Farre, Andrew Zangwill, J. R. Schubel, Julia Chase, Laurel Kendall, Angelo A. Lamola, James J. Wynne, Nathaniel Heintz, Leon J. Lidofsky, Frank Sciulli, William F. Haxby, Neil H. Landman, George W. Flynn, Patricia E. Cladis, Kathleen Christensen, Jacqueline K. Barton, Eugene Galanter, Stephen Arnold, Cyrus Levinthal, Atle Gjelsvik, Darcy B. Kelley, Alfred Inselberg, Richard M. Osgood, Jr., Robert M. Shapley, T. E. O'Hare, Arno A. Penzias.

1. General Interest

The Process of Becoming a Scientist (25 May, 9:00 a.m., H): Value commitments, policy-making, historical setting, global network, modern alchemy.

Lawrence Senesh, Stephanie Mines, James Arthur Campbell, Thomas L. Saaty, John Platt, Keith Porter, Arthur Kantrowitz, Kenneth E. Boulding, Thomas A. Sebeok, Glenn T. Seaborg.

Science in China's Past: Recent Discoveries (25 May, 9:00 a.m., H): Archaeological metallurgy, history, archeoastronomy, ancient medicine, contemporary medical school.

Nathan Sivin, T. Ko, Robert Maddin, Xi Zezong, Li Jingwei, Judith Farquhar.

Science at the Cutting Edge: Europe and America (26 May, 9:00 a.m., H): Particle physics, Euratom fusion programme, U.S. fusion research, complexity, immunology, outlook, policy.

Thomas Ratchford, Sandra M. Burns, E. Margaret Burbidge, Herwig Schopper, Leon M. Lederman, Hans-Otto Wüster, Harold P. Furth, Ilya Prigogine, Leroy E. Hood, Paolo Maria Fasella, John P. McTague.

The Frontiers of the Natural Sciences (27 May, 9:00 a.m., H): Extragalactic violence, macromolecular chemistry, nuclear astrophysics, orbital variations, biomechanics, mathematics in physiology.

Rolf M. Sinclair, Lewis M. Branscomb, Bruce Margon, Charles G. Overberger, William A. Fowler, Alfred G. Fischer, Steven Vogel, Charles S. Peskin.

Frontiers of the Social Sciences: The Interface with Biology (28 May, 9:00 a.m., H): Biopolitics, memory trace circuits, mediation, behavioral medicine, culture, biology, psychosocial growth.

David L. Sills, Matilda White Riley, Roger D. Masters, Richard F. Thompson, Patricia R. Barchas, Stephen M. Weiss, Melvin J. Konner.

Science and Technology for Economic Development (28 May, 2:30 p.m., H): Developing countries, technological change and impact, African perspective, world economic growth.

A. Karim Ahmed, Amilcar Ferrari, Abdus Salam, Frances Stewart, Bolanle Awe, Wassily Leontief.

The Edges of Science (29 May, 9:00 a.m., H): Parapsychology, extraterrestrial intelligence, ancient and future migration, properties and null hypothesis of UFO phenomenon.

Rolf M. Sinclair, Isaac Asimov, Stanley Krippner, James Randi, Frank D. Drake, Eric M. Jones, J. Allen Hynek, James Edward Oberg.

2. Physical Sciences

Frontiers of Chemistry: New Excitement, New Challenges (25 May, 9:00 a.m., H): Manipulating molecules, analytical chemistry, organic synthesis, catalysis, semiconductor electrodes, horizons for chemical applications.

Robert M. Simon, William Spindel, George C. Pimentel, C. Bradley Moore, Yuan T. Lee, William A. Goddard, III, Allen J. Bard, Samuel J. Danishefsky, George W. Parshall, George M. Whitesides, Gabor A. Somorjai, Mark S. Wrighton, Christopher T. Walsh, Ralph F. Hirschmann.

Neutrons in Science and Technology (26 May, 9:00 a.m., H): Low-energy neutrons, diffraction, molecular biology, scattering, condensed matter, technical applications, facilities.

Victor J. Emery, C. G. Shull, Benno P. Schoenborn, L. Passell, Robert M. Brugger, J. Rush.

Order in Chaos (26 May, 9:00 a.m., H): Parameters, pattern formation, scale invariance, universality, computer simulation, rotating fluids, physiological systems, atomic physics, chaos in the molecular world.

Saul Krasner, J. Doyne Farmer, Jerry P. Gollub, Leo P. Kadanoff, Philip S. Marcus, Joseph Ford, Bernardo A. Huberman, Paul E. Rapp, Roderick V. Jensen, Eric J. Heller.

Chemically Solvable Problems (27 May, 9:00 a.m., H): Platinum anticancer drugs, boron-10–labeled antibodies, cancer therapy, imaging agents, diagnostic medicine, artifact tracing, cultural heritage in stone.

Herbert D. Kaesz, Barnett Rosenberg, M. Frederick Hawthorne, Alan Davison, Fred H. Stross, Seymour Z. Lewin.

How Stars Are Born (27 May, 9:00 a.m., H): Star-forming cloud complexes, prestellar condensations, luminous stars, sunlike stars, IRAS observations, early stellar evolution.

Philip C. Myers, Bruce G. Elmegreen, Paul T. P. Ho, Charles A. Beichman, Frank H. Shu.

The Very Early Universe (27 May, 2:30 p.m., H): Unified theories, proton decay, inflationary universe, Big Bang.

Alan H. Guth, Paul G. Langacker, Paul J. Steinhardt, Michael S. Turner.

Chemistry Is Fun! (27 May, 2:30 p.m., H): Communicating through demonstrations, science and abstract art, an exercise in geometry.

Bassam Z. Shakhashiri, Henry A. Bent, Nicholas J. Turro.

Science for the Naked Eye; Or, The Physics of Everyday Experience, XI (28 May, 9:00 a.m., H): Computer games, Brooklyn Bridge, science fiction, cuisine, archaeology from airplanes and satellites, biofeedback, behavioral medicine.

Rolf M. Sinclair, Chris Crawford, Robert Gough, Hal Clement, Arthur E. Grosser, Thomas L. Sever, Neal E. Miller.

Plasmas: Deep Space, Near Space, and Fusion Reactors (29 May, 9:00 a.m., H): Interstellar medium, intergalactic astrophysics, pulsar plasmas, solar system physics, solar photosphere and chromosphere, fusion plasmas.

Mary L. Shoaf, Roger D. Blandford, Malvin A. Ruderman, Charles F. Kennel, Bruce W. Lites, Marshall Rosenbluth.

Hierarchy Theory and Cross-Fertilization Across Disciplinary Boundaries: Can General Theory Inform Empirical Testing, and Vice-Versa? (29 May, 1:30 p.m., H): Inhomogeneity in cosmology, temporal scaling, statistical mechanics, field theory, phase states, hypercycles, chemical disequilibria, cross-level hypotheses.

Len R. Troncale, Albert G. Wilson, Edward R. Harrison, Burton Voorhees, James G. Miller.

3. Earth and Planetary Sciences

Offshore Hard Mineral Resources: New Potential for the United States (25 May, 9:00 a.m., H): Continental Shelf, hydrothermal deposits, ferromanganese and sulfide deposits, economics, ocean policy, environmental issues, soft law.

Peter A. Rona, Frank T. Manheim, Robert M. Owen, J. Robert Moore, David A. Clague, W. C. J. van Rensburg, James M. Broadus, John Norton Moore.

Plate Tectonics and Biogeography (25 May, 2:30 p.m., H): 19th-century geological theory, Alfred Wallace, Continental Drift, bird migration, fossil record, future of biogeography.

Alan E. Leviton, Michele L. Aldrich, J. Thomas Dutro, Jr., Mott Greene, John Langdon Brooks, Henry Frankel, Albert Wolfson, Anthony Hallam, Gareth Nelson.

Moving Industry Into Space (25–26 May, 2:30 p.m., S): Space policy, corporate initiatives, and independent space projects.

Morrie Schneiderman, Peter E. Glaser, James M. Beggs, Jerry Grey, Thomas F. Rogers, Gerry Simonoff, Russell Deak Hensley, Jerry Rockwell, III, Roger Soderman, John W. Townsend, Jr., Norris Mendoza, Philip E. Culbertson, Doug Watt, Michael J. Sander, G. Harry Stine.

Geology and Your Vacation (27 May, 9:00 a.m., H): Caribbean, spelunking, solution topography, mineral spas, rivers, mountains.

J. Thomas Dutro, Jr., Orrin H. Pilkey, Porter M. Kier, William E. Davies, Ronald L. Parsley, John C. Reed, Jr.

El Niño and the Southern Oscillation (27 May, 2:30 p.m., H): Atmospheric and oceanographic aspects, national and international research programs.

Joseph Smagorinsky, Eugene M. Rasmusson, Peter J. Webster, S. George Philander, Ferris Webster.

Agricultural Production in Anomalous Weather Conditions (28 May, 9:00 a.m., H): Agribusiness response, crop insurance, crop production disasters, state-level reaction, planning, effects.

Stanley A. Changnon, Jr., Richard E. Felch, Lloyd W. Lindstrom, Larry Werries, Norton D. Strommen, Steven T. Sonka.

Is the Earth's Biota an Important Contributor to the Increase in CO_2 in the Atmosphere? (28 May, 2:30 p.m., H): Physiological and ecological controls, biomass, tropical and temperate land-use change, the global carbon cycle.

Charles A. S. Hall, Boyd R. Strain, Ariel E. Lugo, Sandra Brown, R. P. Detwiler, P. Bogdonoff, Tom Armentano, Jerry Mellilo, Richard A. Houghton, George M. Woodwell.

Long-Run Climatic Change and Impact Research (29 May, 9:00 a.m., H): CO_2 economic control, water availability in western United States, policy perspective, empirical verification, insect and plant diseases.

Richard F. Kosobud, William D. Nordhaus, Frank Press, Thomas A. Daly, Noriyuki Goto, Roger Revelle, Thomas C. Schelling, Stephen H. Schneider, Paul E. Waggoner.

The Sources of Radiatively Important Trace Species (29 May, 1:30 p.m., H): Man-made and natural gases, anthropogenic perturbations, global atmospheric nitrous oxide, tropospheric ozone, carbon black, sulfate, soot, winter Arctic aerosol.

Lester Machta, M. Aslam K. Khalil, R. A. Rasmussen, Ray F. Weiss, Jennifer A. Logan, Hal Rosen, Kenneth A. Rahn, Douglas H. Lowenthal, Edward M. Patterson.

4. Engineering, Technology, and Energy

Photobiological Hydrogen Production (25 May, 9:00 a.m., S): Water splitting, bioenergetics, marine cyanobacteria, mutant photosynthetic bacteria, light and dark production.

Elias Greenbaum, Alvin I. Krasna, Lester Packer, Akiri Mitsui, Judy D. Wall, Paul F. Weaver.

Smoke, Fire, and Safety (25 May, 9:00 a.m., S): Smoke control systems, history, design, computer simulation of fire.

William A. Schmidt, Jack B. Buckley, John H. Klote, Edwin E. Smith.

State Energy Policies: Current Status, Future Directions (25 May, 2:30 p.m., S): Evolving conservation programs, political realities, performance measurement, unmet needs, vision, appropriate state and federal roles.

Stephen W. Sawyer, John Randolph, Nancy E. Collins, Eric Hirst, Charles R. Guinn, Mark G. Popovitch.

Energy Transport Alternatives (26 May, 9:00 a.m., S): Rail, coal slurry, electricity, pipeline, political factors in energy transport.

E. Gerald Meyer, Daniel L. Lang, Paul Doran, John J. Dougherty, Michael German, Alan K. Simpson.

From Clay to Ceramics: An Exercise in Physics, Technology, and Art (26 May, 2:30 p.m., S): Physics, uses, and the origin of life with clay, ceramics in prehistory, new visions in art.

Rolf M. Sinclair, Donald M. Langenberg, Stuart A. Solin, Noboru Wada, Hyman Hartman, Frederick R. Matson, Karen McCready.

World Energy: How Much Is Enough and Where Will We Get It? (27 May, 9:00 a.m., S): Development-oriented strategies, developing countries, end-use strategy, industrialized countries, CESP, Tanzania.

Robert H. Williams, Philip H. Abelson, Amulya K. N. Reddy, Thomas B. Johansson, José Goldemberg, Mark J. Mwandosya.

Science and Music: Musician-Inventors (27 May, 2:30 p.m., H): History, technological adaptation, new music and instruments, string, percussion, electronic keyboard, computer programming languages.

F. R. Lipsett, Danlee Mitchell, Gayle Young, Max V. Mathews, F. Richard Moore.

The Politics and Technology of Large-Scale Projects: Lessons from Recent Experience in the United States and Abroad (29 May, 9:00 a.m., S): Infrastructure projects, community organization and roles, Westway and Niagara Power expansion, mediated development strategies, New York teleport, Delaware Bay deep-draft port, large-scale hydroelectric projects, Brazilian politics.

Jameson W. Doig, Christina C. Forbes, Michael Rubin, Rolf Sternberg.

Credit: New York Convention & Visitors Bureau

5. Computing and Information

Pattern Recognition Using Intelligent Robots (25 May, 9:00 a.m., S): Pattern recognition problems, robot vision, talking and industrial intelligent robots.

Robert S. Ledley, Azriel Rosenfeld, Henry J. Mark, James S. Albus, Alan E. Zuckerman, Michael Buas.

Journeys Into Higher Dimensions: Graphics in Mathematics, Statistics, and Perception (25 May, 2:30 p.m., S): Fourth dimension, data analysis, volumetric 3-D displays, computer graphics.

Edward J. Wegman, Douglas J. De Priest, Kimiko O. Bowman, Thomas Banchoff, William Cleveland, David Getty, Jerome H. Friedman.

The Implications of Advances in Worldwide Telecommunications (26 May, 9:00 a.m., S): World business, role of satellites, light waves, international regulation, global policies.

Joseph Becker, William G. McGowan, John V. Evans, Irwin Welber, Stephen J. Lukasik, David J. Markey.

Nearly Optimal Solutions in Linear Programming: Mathematical Issues and Implications for Applied Research (26 May, 9:00 a.m., S): Algorithmic issues, computation, theoretical aspects of multiple and near-optima, water resource planning, economics of agricultural management.

James S. Gidley, Robert O. Burton, Jr., David S. Rubin, Martin E. Dyer, Cleve E. Willis, Joseph J. Harrington.

Advances in Computer and Information Systems (26 May, 2:30 p.m., S): Tracking, research issues, new legislation and court decisions, manufacturing, industrial strategies to support education.

Manfred Kochen, Steven Unger, Robert L. Chartrand, Michael J. Kelly, Lou Robinson.

Cryptography and Number-Theoretic Algorithms (26 May, 2:30 p.m., S): Public key cryptosystems, decline and fall of Knapsack, factoring and security of RSA.

Robert S. Rumely, Carl B. Pomerance, Jeffrey C. Lagarias, Hugh C. Williams.

Information Technology for Emergency Management (27 May, 9:00 a.m., S): Potentials, team approach, chemical response, microsystem applications.

Robert L. Chartrand, Robert F. Littlejohn, Marilyn C. Bracken, James W. Morentz, Jr.

Supercomputer: Its Mathematics and Technology (27 May, 2:30 p.m., S): Special-purpose supercomputers, architectural synergism in HEP, parallel computers, computational complexities.

Malvin H. Kalos, H. T. Kung, Burton Smith, Allan Gottlieb, Leslie G. Valiant.

Improving International Crisis Management: The Role of Technology (27 May, 2:30 p.m., S): Past lessons, information technology, U.S. and Soviet communication.

Hilliard Roderick, Barry Blechman, Alexander George, Richard Beal, William Hilsman.

Plans and Developments in Scientific Supercomputing (28 May, 9:00 a.m., S): National plans and developments, critical aspects of supercomputing environment.

Melvyn Ciment, Lawrence A. Lee, Sidney Fernbach, Willis H. Ware, Edward A. Knapp, Jesse H. Poore, Jr., Alvin W. Trivelpiece, Kenneth G. Wilson, Joseph Smagorinsky, Clifford J. Murino, William F. Ballhaus, Jr., Peter Gregory, Robert H. Ewald, Jacob T. Schwartz, Lloyd M. Thorndyke.

Information Theory (28 May, 2:30 p.m., S): Theoretical underpinnings, error-correcting codes, sphere packing, detection and estimation theory, new directions, influence of theory.

Aaron D. Wyner, N. J. A. Sloane, Stuart Schwartz, M. Hellman, R. Price.

Exchange of Science, Engineering, and Technology Information in the World Community (29 May, 9:00 a.m., S): Future patterns, networks, engineering services tailored, information transfer and exchange.

Madeline M. Henderson, Denise Weiner, Emilio Q. Daddario, James J. Harford, Barbara Lawrence, Dale B. Baker, Harald C. Boström, Malcolm D. Clarke, Rustam D. Lalkaka, Rita G. Lerner, Lois Granick, A. F. Spilhaus, Jr.

The Social Impact of High Technologies: Microcomputer Technology in New Social Environments (29 May, 1:30 p.m., H): Electronic communities, telecommuting, personal computers, expansion of information inequities.

Jonathan W. McAdams, Elaine Kerr, Starr Roxanne Hiltz, Charles C. McClintock, Sherry Turkle, J. Paul Yarbrough, Judith A. Perrolle.

6. Biological Sciences

Problems in Contemporary Evolutionary Theory (25 May, 9:00 a.m., H): Molecular drive, historical biology, biotic diversification, integration and needs of theory.

Niles Eldredge, Joel Cracraft, Gabriel A. Dover, Brian Goodwin, Stephen Jay Gould.

Punctuated Equilibria versus Gradualism: Political Implications (25 May, 2:30 p.m., H): Adaptationist and functionalist excesses, evolution, history, political theory, biological rates of change, application in social sciences.

Roger D. Masters, Albert Somit, Stephen Jay Gould, Donald T. Campbell, Carl Gans.

Fossils, Genes, and Time: Paleontological versus Macromolecular Approaches to the Study of Higher Primate Phylogeny (26 May, 9:00 a.m., H): Major anthropoid group indications, biochemical techniques, New World monkey lineage divergence, theory competition, alternative methodology, mathematical methods for reduction of molecular data.

Eric Delson, Clifford J. Jolly, David Pilbeam, Alfred L. Rosenberger, Morris Goodman, Vincent Sarich, Charles G. Sibley, Jon E. Ahlquist, Maryellen Ruvolo, David Hewett-Emmett, Wesley M. Brown, Jerold M. Lowenstein, Jeffrey H. Schwartz, Joseph Felsenstein.

Transposable Elements: From Prokaryotes to Plants (26 May, 2:30 p.m., H): Controlling elements in maize, gene regulation and cellular differentiation in yeast, DNA transposition, *Drosophila* eggshell.

Nina V. Federoff, James B. Hicks, Gerald R. Fink, Nicholas Cozzarelli, Allan C. Spradling.

New Directions in Evolutionary Epistemology (27 May, 9:00 a.m., H): Cultural evolutionary epistemology, genotype-phenotype model, technology, cosmic evolution, nutritional origins, the mind-body problem.

Paul Levinson, Donald T. Campbell, Aharon Kantrovich, Günter Wächtershäuser, Karl H. Pribram.

Genetics of Marine Invertebrates (27 May, 2:30 p.m., H): Enzyme polymorphism, marine copepod, genetic structure of populations, enzyme and genetic heterozygosity, bioenergetics.

Richard K. Koehn, Ronald S. Burton, Richard J. Hoffmann, E. Zouros, D. W. Foltz.

Hormonal Control of Cardiovascular Functions: Evolutionary Aspects (28 May, 9:00 a.m., H): Circulating catecholamines, renin-angiotensin system, neurohypophysial hormones, parathyroid hormone, prostaglandins in poikilotherms.

August W. Epple, Hiroko Nishimura, Wilbur H. Sawyer, Peter K. T. Pang, Ceil A. Herman.

Aging of Cholinergic Pathways in the Nervous System (28 May, 2:30 p.m., H): Cholinergic function, neuromuscular junction, acetylcholine metabolism, neurotransmitters and receptors, Alzheimer's disease, dietary modification, acetylcholine release.

Dean O. Smith, Donald J. Jenden, Gary E. Gibson, Peter Davies, Richard J. Wurtman.

7. Biological Sciences: Ecology

Dams: Considerations for Future Water Management (25 May, 2:30 p.m., H): Safety, incidents, hydrologic forecasting, unified operation in divided basin, alternatives to traditional water development.

Theo Colborn, William S. Bivins, Gene M. Elliott, Robert A. Clark, Benjamin L. Harding, Brent F. Blackwelder, J. Murray Mitchell.

The Significance of Prokaryotic and Eukaryotic Microbes in Planktonic Food Webs (26 May, 9:00 a.m., H): Microheterotrophs, chemotrophic bacteria, picoplankton, photosynthetic prokaryotes and eukaryotes, unicellular cyanobacteria, heterotrophic microflagellates, unseen eukaryotes.

Evelyn B. Sherr, Paul G. Davis, Lawrence R. Pomeroy, John McNeill Sieburth, Hilary E. Glover, John B. Waterbury, David A. Caron, Jed A. Fuhrman.

The New York Bight and Its Estuarine Ecosystems: State of Health (26 May, 2:30 p.m., H): PCB transport, *Glugea stephani*, pathogenic protozoa in oceanic sediments, chromosome mutation, effects of contaminants.

Judith S. Weis, Joseph M. O'Connor, Ann Cali, Carl R. Berman, Jr., Arlene Crosby Longwell, John B. Pearce.

Organic Matter and Nutrient Cycling in Semiarid Ecosystems (27 May, 9:00 a.m., H): "Plowout," management strategies and effects on Great Plain soils, transformation dynamics, synthesis framework.

C. Vernon Cole, William A. Laycock, John Lacey, John W. B. Stewart, Gary A. Peterson, R. Paul Voroney, Robert D. Heil.

Tropical Rain Forests and World Atmosphere (27 May, 9:00 a.m., H): Moist forest depletion, recent dry period effect on Malesian Rain Forest, Amazon rainfall, deforestation, carbon cycle.

Ghillean T. Prance, Gerard Piel, Norman Myers, Mark Leighton, Eneas Salati, Thomas E. Lovejoy, Michael B. McElroy, George M. Woodwell.

Lake Ecology, Lake Management: The New Perspective (27 May, 2:30 p.m., H): Cleaning Irondequoit Bay, practical applications in diverse lakes, Lake Ontario observations, general concept for lakes and reservoirs, importance of biological structure.

Herman S. Forest, Thomas T. Bannister, Jay A. Bloomfield, Hugh F. H. Dobson, Bruce L. Kimmel, Kenneth J. Wagner.

Ruminant Animal Production on Semiarid Lands of China (27 May, 2:30 p.m., H): Livestock productivity, grazing management in Africa and South America, changing land tenure, nutritional constraints, current research and support needed.

Gerald M. Ward, Robert S. Temple, Dillard H. Gates, Rong Yi, Robert R. Oltjen.

The Importance of the Sea-Surface Microlayer (28 May, 9:00 a.m., H): Metals, organic materials, sea-air interface, microbial activity, phytoneuston, zooneuston.

John T. Hardy, James L. Fasching, David J. Carlson, John McN. Sieburth, George C. Grant.

Variability and Management of Large Marine Ecosystems (LMEs) (28–29 May, 2:30 p.m., H): Resource populations, Baltic, California current, Continental Shelf, mesoscale perturbations, environmental, Bering Sea, time-series, North Sea, measurements and sampling, legal constraints, optimum yield, cost benefit, Antarctic, goal setting.

Kenneth Sherman, Lewis Alexander, John Beddington, Gunnar Kullenberg, Alec D. MacCall, Michael P. Sissenwine, John Walsh, Andrew Bakun, Lewis Incze, Niels Daan, Alex W. Herman, Martin H. Belsky, Francis T. Christy, Jr., Giulio Pontecorvo, R. Tucker Scully, Robert L. Edwards.

8. Environmental Issues

Environmental Effects on Reproductive Outcome (25 May, 9:00 a.m., H): Fetal alcohol syndrome, Navajo births, Shiprock, uranium mining, atomic bombs, radiation.

Lora Mangum Shields, William H. Wiese, Zena A. Stein, Jon M. Aase, Alan B. Goodman, James V. Neel, Marvin Legator.

Health Effects of Industrial Waste Sites (25 May, 2:30 p.m., H): Data requirements, valid evaluations, risk correlates, impact assessment, hazardous wastes, victim compensation, research needs, toxic substances, agency protocol.

Timothy F. O'Leary, Ellen K. Silbergeld, Clark W. Heath, Jr., Bruce W. Karrh, John Higginson, David M. Ozonoff, Gordon A. Enk, Georgi A. Jones.

Nuclear Power Station Safety: New Evaluations Since Three Mile Island (26 May, 9:00 a.m., H): Safety design, accident experience and assumptions, national and international R&D programs, health effects, siting and emergency procedures.

William R. Stratton, Robert L. Seale, Floyd L. Culler, John A. Auxier, Robert M. Bernero.

Indoor Air Quality: Methods of Evaluation and Control (26 May, 2:30 p.m., H): Public health, active and passive monitoring, organic compounds, solutions for buildings, preventative and predictive methods, energy use.

James E. Woods, Jr., John D. Spengler, Lance Wallace, Barry J. Davis, Ian Nitschke, Tamami Kusuda.

Uncertainty in the Law and Science of Health Risk Assessment (28 May, 2:30 p.m., H): Toxicant-related injuries, preponderance test, victim compensation, apportionment, lung cancer, asbestos, risk perception, judicial review.

Paolo F. Ricci, Stephen C. Peck, Lawrence S. Molton, Talbot Page, Joseph Fiksel, Kenny S. Crump, Gerald R. Chase, Paul Kotin, Paul Slovic, Baruch Fischoff, Sarah Lichtenstein, William H. Rodgers, Jr.

Pollution Tolerance: Who, What, Where When, and How (29 May, 9:00 a.m., H): Organic xenobiotic metabolism, marine animals, PCB resistance, phytoplankton populations, mercury, metal, zinc tolerance.

Judith S. Weis, John J. Stegeman, Charles F. Wurster, G. Roesijadi, Samuel N. Luoma, Frank J. Rahel.

9. Medical Sciences and Health Care

Decision-Making for Catastrophically Ill Newborns: Social and Political Issues in the Use of Technology (25 May, 9:00 a.m., H): Neonatal intensive care units, President's Commission on Ethics, Biomedical and Behavioral research, federal response, parental power, life and death decisions, rights and wrongs in care.

Betty Wolder Levin, John M. Driscoll, Alexander Morgan Capron, Nancy Neveloff Dubler, Renee R. Anspach, Arthur L. Caplan.

The Role of Diet in the Development of Cancer (25 May, 2:30 p.m., H): Dietary fat, breast cancer risk, vitamin A, retinoids, fiber, large bowel cancer, prevention and therapy, recommendations, public awareness.

Mary L. Moller, Leonard A. Cohen, David L. McCormick, Bandaru C. Reddy, David Rose, Sushma Palmer, John H. Weisburger.

New Developments in Human Nutrition (26 May, 9:00 a.m., H): Biochemical adaptation, vitamin, nutrient, and trace element metabolisms, obesity, trauma.

Janet C. King, Norman Kretchmer, Richard S. Rivlin, Rudolph L. Leibel, Michael D. Caldwell.

AIDS: Can Research Be Mobilized in Response to a Health Crisis? (26 May, 9:00 a.m., H): Cost-benefit, rebudgeting NIH research, domestic and international tracking, Health Emergencies Bill, short-term needs, public information.

Sandra Panem, Arthur S. Levine, Marcus Conant, James W. Curran, Timothy Westmoreland, Frank Polk, Gail McBride.

The Chemistry of Folk Medicine (26 May, 2:30 p.m., H): Plant antitumor agents, structure-activity, mechanisms, schistosomiasis, medicinal plants, Huasteco (Teenek) natives, oriental crude drugs, bioactive compounds and constituents.

Isao Kubo, Kuo-Hsiung Lee, Kurt Hostettmann, Xorge Antonio Dominguez, Isao Kitagawa.

Calcium and Bone Health (26 May, 2:30 p.m., H): Inactivity, exercise, oral health, infants, teenage pregnancy, hormones, diet, calcium requirement, drug-calcium interactions.

Herta Spencer, Elwood W. Speckman, G. Donald Whedon, Gary S. Rogoff, Gary M. Chan, Robert P. Heaney.

Health Prospects for American Women (27 May, 9:00 a.m., H): Cancer rates, cardiovascular disease, sex roles, mental health, risk factors, morbidity, mortality, Alameda County surveys, careers.

Lois M. Verbrugge, David Mechanic, Susan Devesa, Elaine Eaker, Robert J. Garrison, Paul E. Leaverton, Ronald C. Kessler, Deborah L. Wingard, Jennifer Madans.

Fiscal Crisis and Health Policy (27 May, 2:30 p.m., H): Teaching hospitals, competitive environment, geriatrics, public policies.

Philip R. Lee, Irving J. Lewis, John Billings, Carroll L. Estes.

Molecular Targeting of Drugs (28 May, 9:00 a.m., H): Polyene antibiotics, liposomal drug delivery system, toxins, antigens, ligand receptors, generic drugs, receptor immobilized drugs, monoclonal antibodies, chemotherapeutic agents, viral diseases, neoplasia, nucleic acid chemistry.

R. L. Juliano, Vic Raso, Marc J. Ostro, J. Craig Venter, Paul O. P. Ts'o.

Use of Nonvirulent Bacteria to Inhibit Bacterial Infections (28 May, 9:00 a.m., H): Urinary tract flora, large intestine, dental caries, juvenile periodontitis, pathophysiology of IPS, caries in rats, legal and ethical dimensions.

Jason M. Tanzer, W. Eugene Sanders, Jr., Catherina Svanborg-Edén, L. Hagberg, H. Leffler, H. Lomberg, Katherine Sprunt, Christine C. Sanders, Rolf G. Freter, Jeffrey D. Hillman, Sigmund S. Socransky, Michael L. Freedman, Robert J. Fitzgerald, Dowden Birkhed, Andrea B. Kurasz, John Fisher, Joseph M. Healey.

The Non-Collagenous Proteins and Other Macromolecules of Mineralized Tissues (29 May, 9:00 a.m., H): Lipids, proteoglycans, growth plate cartilage, calcification, phosphoproteins, chicken bones, rat dentin, phosphophoryn-collagen interactions, osteocalcin, dental enamel.

Melvin J. Glimcher, Barbara D. Boyan, Lawrence C. Rosenberg, A. Robin Poole, William T. Butler, Arthur Veis, Peter V. Hauschka, Jane B. Lian, John D. Termine.

10. Biomedical Technology

Mathematical Problems in Medical Imaging (25 May, 9:00 a.m., H): CAT-scanning, nuclear magnetic resonance, EM algorithm for PET, multiple dimensioning, pulse sequences.

F. Alberto Grünbaum, Gabor Herman, A. M. Cormack, Arnold Lent, Leon Kaufman, Thomas Budinger, L. A. Shepp, Robert B. Marr, Peter M. Joseph.

Opportunities for International Scientific Cooperation in Bioresources and Biotechnology (26 May, 9:00 a.m., H): Bioresource needs and constraints, U.N.-related biotechnology programs, North-South relationships, Interciencia Bioresources Program, African regional programs, Venezuela.

James W. Rowe, M. Anandakrishnan, Glenn T. Seaborg, Roger Revelle, Ernst U. von Weizsäcker, Ralph W. F. Hardy, Rodrigo Zeledon, Thomas R. Odhiambo, Raimundo Villegas.

Recent Advances in Medical Genetics (26 May, 2:30 p.m., H): Prenatal diagnosis and management, recombinant DNA technology, inborn errors, metabolism, neoplasia.

Kurt Hirschhorn, Maurice J. Mahoney, Roy D. Schmickel, Robert J. Desnick, Alfred Gilbert.

Capability Building in Biotechnology and Genetic Engineering by Developing Countries (26 May, 2:30 p.m., H): R&D in developing countries, scale-up and bioscience-based industry, national policy.

Raymond A. Zilinskas, David McConnell, Ray Wu, Sheikh Riazuddin, Diogenes Santiago Santos.

Biotechnology: Its Impact on Genetic Sciences (27 May, 9:00 a.m., H): Social construction, molecular biology, financial community, academe, congressional perspectives.

Gerald E. Markle, Stanley S. Robin, Zsolt P. Harsanyi, Lois S. Peters, Albert Gore, Jr., Allan Mazur, Lewis Tornatzky.

Biotechnology: International Trade Considerations (27 May, 2:30 p.m., H): Foreign targeting, national security, export regulations, international competitiveness, national science policy.

Joseph G. Perpich, Clyde V. Prestowitz, John H. Birkner, Henry D. Mitman, Nanette Newell, Irving Johnson.

Biotechnologies to Unlock Resources of Arid Land Plants (28 May, 9:00 a.m., H): Tissue culture propagation, salinity and drought resistance, mycorrhizal innoculation, plant performance, raw material sources, halophytes, crop opportunities.

Cyrus M. McKell, James W. O'Leary, Meena S. Moses, Paul M. Hasegawa, Timothy E. Wood, Manuel F. Balandrin.

Some Mathematical Questions in Biology: DNA Sequence Analysis (28 May, 9:00 a.m., H): Mutation pressure, fixation probability, rate of evolution, pattern recognition, probability distributions, statistical problems, discrete mathematics.

Robert M. Miura, David Lipman, Walter Fitch, Allan C. Wilson, Peter H. Sellers, Michael S. Waterman, Simon Tavaré, Michael Zuker.

Release of Genetically Engineered Organisms: Law, Science, and Politics (28 May, 2:30 p.m., H): Congressional issues and perspectives, limit of scientist's role, legal and ethical issues.

Joseph N. Onek, Stephen Lindow, Donald S. Frederickson, Anthony Robbins, Stephan E. Lawton.

Heterogeneous Populations and the Limits of Multivariate Statistics (29 May, 9:00 a.m., H): Unobserved heterogeneity, birth intervals, childhood survival, chronic diseases, demographic uncertainty principle, the unisex issue.

Joel E. Cohen, Nathan Keyfitz, James Heckman, James Trussell, Toni Richards, Kenneth G. Manton, Burton H. Singer.

Marine Biotechnology (29 May, 1:30 p.m., H): Potential, molecular signals, genetic engineering, neurotransmitters, pigments, adhesion polymers, seaweed, fish, cloning, virulence determinants, pathogens.

Ronald M. Weiner, Rita R. Colwell, Daniel E. Morse, Dale B. Bonar, Donald Cheney, Dennis Powers, Jorge Crosa.

11. Agriculture and Food

Dilemmas in U.S. Agricultural Research Policy in the 1980s (25 May, 9:00 a.m., H): Preserving, allocating, natural resources, social and behavioral science contributions, new institutional forms, institutional constraints.

Jean Lipman-Blumen, Orville G. Bentley, George E. Brown, Jr., Sandra S. Batie, Vernon W. Ruttan, R. James Hildreth, Don A. Dillman, Lowell N. Lewis.

Biological Control of Pests: Ecological and Economic Potential (25 May, 9:00 a.m., H): Protocols, biocontrol agents, parasite-host associations, native pests, unorthodox practice, forestry, integrated pest management.

David Pimentel, Stephen Risch, Jack Coulson, Richard Soper, Heikki Hokkanen, Arnold Drooz, Jerry Stimac.

Agricultural Research Policy: Selected Issues (25 May, 2:30 p.m., H): Decision-making, prioritization, academic disciplines, scientific credibility, efficiency goals, public goals, natural resource conservation and management, equity.

J. Paxton Marshall, Sandra S. Batie, James H. Anderson, Harry O. Kunkle, Robert E. Evenson, Kenneth R. Farrell, Chester O. McCorkle, Jr., Bobby R. Eddleman, William E. Marshall.

Agriculture-Food Issues in an Ecology of Knowledge Perspective (25 May, 2:30 p.m., H): Food production, regenerative agriculture, applied ecology, holism, expert systems.

Keith D. Wilde, David Pimentel, Jerzy A. Wojciechowski, Richard Harwood, Alicia Borowski, Martin Culik, William Liebhardt, Ray W. Jackson, Brian Gaines, Mildred Shaw, Clayton M. Switzer.

Worldwide Food Production Potential (26 May, 9:00 a.m., H): World soils, fertilizers, climate trends, water conservation, genetic engineering, plant breeding, animal productivity, integrated pest management, food storage, socioeconomics, capability enhancement, food-short areas, information and institutional needs, research, extension, schooling.

Ralph J. McCracken, Harold A. Henderson, Stanley W. Buol, P. A. Sanchez, Reid A. Bryson, C. H. M. Van Bavel, Perry L. Adkisson, Frank H. Baker, Ralph W. Hardy, T. Kelly White, Ruth K. Zagorin, Robert E. Evenson.

Our Knowledge Base for the 1985 Agricultural and Food Policy (26 May, 2:30 p.m., H): Natural resource status, trade development, productivity, technology base, historical implications, agricultural science, education, policy.

Robert G. F. Spitze, Kenneth R. Farrell, Alex F. McCalla, Wesley B. Sundquist, B. H. Robinson, R. J. Hildreth.

Emerging Biotechnologies in Agriculture: Policies and Programs to Meet Future Needs (27 May, 9:00 a.m., H): Research capability, public sector, education capability, manpower needs, university-industry relations, basic and contemporary research.

F. Aloysius Wood, Leo M. Walsh, Charles E. Hess, Charles B. Browning, Neil E. Harl, Theodore L. Hullar, Gordon D. Wallace.

Biotechnology and the Socioeconomic Transformation of Agriculture (27 May, 2:30 p.m., H): Plant variety protection, property institutions, public research, plant breeding political biology, international public research sector, Third World, legal constraints and possibilities.

Frederick H. Buttel, A. Allan Schmid, Lawrence Busch, William B. Lacy, Jeffrey Burkhardt, Michael Hansen, Richard C. Lewontin, Gary H. Toenniessen, Clarence J. Dias, Ward Morehouse, Martin Kenney, Jack Kloppenburg, Jr., J. Tadlock Cowan, Bruce Koppel.

Agricultural Policy and the Small Farm Sector (28 May, 9:00 a.m., H): U.S. structural change, Portugal, crop-livestock interactions and production, tree crops, integrated pest management, nitrogen management, renewable resources, sustainable agriculture.

Emilio F. Moran, Timothy J. Finan, Christina Gladwin, Robert Hart, Robert McDowell, Donald Plucknett, Steve Risch, Richard Harwood, C. Ronald Carroll, Ned Raun.

Agricultural Research: Approaches to the Integration of Socioeconomic Studies in Experimental Agricultural Research (29 May, 9:00 a.m., H): Anthropology, social science contributions, Latin America, research design, integrated research.

Emilio F. Moran, Timothy J. Finan, Robert Rhoades, Vernon Ruttan, Jorge Soria, Robert Werge, Donald Plucknett.

Shortages of Agricultural Scientists: Scenario for the Future (29 May, 1:30 p.m., H): Federal responsibilities, capacity, U.S. colleges and universities, 21st Century, industry perspective, projected needs.

Edward W. Glazener, John P. H. Brand, Orville G. Bentley, Lawrence L. Boger, Roland M. Hendrickson, Harry O. Kunkel.

12. Economics and Industry

Knockdown-Dragout on the Global Future (25 May, 9:00 a.m., S): Future, forests, wildlife species, energy, physical factors, human welfare, methods.

Julian L. Simon, Barry Commoner, Danny Boggs, Donald R. Lesh, Peter Raven.

Global Foresight Capability and Institutional Responses: Beyond Global Modeling (25 May, 2:30 p.m., S): Trend identification, modeling, federal government and private business perspective, spontaneous order.

Peters D. Willson, Daniel B. Tunstall, Patricia G. Strauch, G. Patrick Johnson, Joel Horn, Fred Lee Smith, Jr.

Comparative Methodologies of Assessing Industrial Technology and International Competitiveness (26 May, 9:00 a.m., S): Office of Technology Assessment, U.S. International Trade Commission, seven industrial sectors, generic approach, U.S. Department of Commerce.

Theodore W. Schlie, John A. Alic, Charles W. Ervin, Hugh H. Miller, John Zysman, Joshua Gotbaum, J. Kenneth Craver.

Creating the Science Base for Manufacturing Technology of the Twenty-first Century (26 May, 2:30 p.m., S): New materials, artificial intelligence, expert systems, sensors and robotics, metrology, geometric modeling, computer-aided design and manufacturing.

Joel D. Goldhar, Janice E. Greene, George Ansell, Roger N. Wright, J. Michael Brady, Lester A. Gerhardt, Robert J. Hocken, Michael A. Wesley, Dennis Wisnosky.

High-Technology Management and Management of High Technology (27 May, 9:00 a.m., S): Flexibility, simplicity, telecommunications, teleconferencing, innovation, organizational policy, distributed information, CAD/CAM systems.

Milan Zeleny, Richard J. Schonberger, Murray Turoff, Gerhard O. Mensch, Niv Ahituv, William J. Abernathy, Manfred Kochen, Myron Tribus.

The Bargaining Problem Revisited (27 May, 2:30 p.m., S): Economics, rational decision models, contemporary solutions, binding, final-offer arbitration.

James A. Schellenberg, John G. Cross, Douglas D. Heckathorn, Steven J. Brams, Samuel Merrill, III, Daniel Druckman.

Modeling the Welfare State (28 May, 9:00 a.m., S): MATH, TRIM, microsimulation models, U.S. Congress, simulation analysis, unemployment insurance program, German federal taxes and welfare programs, Office of Income Security Policy.

Steven B. Caldwell, Harold Beebout, Patricia Ruggles, Paul Cullinan, Richard Hayes, John Moeller, Herman Quinke, Richard A. Kasten, Frank J. Sammartino, Christine Schmidt, Harold Watts.

Solutions for Entry-Level Scientists (SELS): Developing Employment Options in the 1980s (28 May, 9:00 a.m., S): Constructive employment, oversupply, academe, national laboratories, strategies, options, grant support, federal policies, scientific manpower.

Gene A. Nelson, John C. Crystal, Betty D. Maxfield, Betty Vetter, Westley Clark.

Can Game Theory Model Real-World Conflicts? (28 May, 2:30 p.m., S): Deterrence, uncertainty, models, Canadian Constitutional Amending Formula, arms control, case study.

Steven J. Brams, Morton D. Davis, D. Marc Kilgour, Barry O'Neill, Alvin E. Roth.

Moving Ideas and People: The Influence of Mobility of Scientists and Engineers on Industrial Innovation (28 May, 2:30 p.m., S): Interorganization, manpower flows, job mobility, information exchange, Silicon Valley.

Dael Wolfle, Charles E. Falk, John E. Ettlie, Judith K. Larsen, Leon Cookman, Rodney W. Nichols.

The Potential of Market Incentives in Managing the Commons (29 May, 9:00 a.m., S): Simulation, transferable discharge permits, water pollution, political feasibility, property rights, tort rights, pollution control, economic incentives, EPA air quality programs, legislating.

Christopher T. Hill, J. Wayland Eheart, E. Downey Brill, Jr., W. P. Welch, George R. Heaton, Jr., Paul Stolpman, John E. Blodgett.

Potential Legal Liability for Laboratory Safety Problems (29 May, 1:30 p.m., H): Personal injury and products liability law, long-term exposure, toxic substances, case examples.

Daniel A. Bronstein, William A. Thomas, Karen Rothenberg, Barbara Wrubel, David M. Covey.

13. Sociology and Political Science

Election Polling: Early and Last Minute (25 May, 9:00 a.m., H): Newspaper reporting, public impact, political reporting and polls.

Judith Tanur, Lincoln Moses, Adam Clymer, Warren E. Miller, Warren J. Mitofsky, Burns W. Roper.

Technological Prospects and Population Trends (25 May, 2:30 p.m., H): Contraceptive technology, fertility control, educational change, extending life expectancy, agricultural productivity.

George J. Stolnitz, Thomas J. Espenshade, Sheldon J. Segal, Mary Jean Bowman, Edward L. Schneider, Vernon W. Ruttan, Kenneth G. Manton, T. Paul Schultz.

The Oldest Old: Multidisciplinary Implications (26 May, 9:00 a.m., H): Demographics, modeling, health status change, health and social issues, female longevity, visible costs, health care resources.

Matilda White Riley, Richard M. Suzman, Ira Rosenwaike, Beth J. Soldo, Kenneth G. Manton, Marie Haug, Barbara B. Torrey, Robert H. Binstock.

Technology and the City: Past, Present, and Future Federal Policies (26 May, 2:30 p.m., H): NSF and HUD perspectives, strategies, capital facilities, urban infrastructure.

W. Henry Lambright, Jon Benson, Bruce J. Reiss, Hartley C. Fitts, Harry P. Hatry, Richard H. Sullivan.

Gentrification: Alternative Explanations and Polar Policies (27 May, 2:30 p.m., H): Politics, welfare impact, economic benefit streams, feminist perspective, Harlem.

H. Briavel Holcomb, Robert A. Beauregard, Thomas A. Clark, Michael H. Lang, Damaris C. C. Rose, Neil Smith, Richard Shaffer.

General Systems Theory and the Analysis of Political Systems (28 May, 9:00 a.m., S): World and computer-assisted models, war-generating propensities, deterrence, political science, political party systems, testable hypotheses, Talcott Parsons, living systems theory, cross-fertilization.

Karl W. Deutsch, Stuart Bremer, Thomas Cusack, Dale Smith, Anatol Rapoport, Raymond Duval, Len R. Troncale, Trudi C. Miller, Rudolph Wildennann, James G. Miller.

The Ethnography of the Laboratory: What Scientists Really Do (28 May, 2:30 p.m., H): Calibration, pilgrim's progress, physics.

Ron Westrum, Karin Knorr, Harry Collins, Sharon Traweek, Steve Woolgar, Daryl Chubin, Simon Marcson.

The Urban Poor in Less-Developed Countries: Policy Imperatives (29 May, 9:00 a.m., H): Development, common traits in the United States and abroad, sustenance, small industry, water supply, sanitation, housing, aid shelter programs.

George Bugliarello, John G. Hurley, Janice Perlman, Peter Hakim, B. K. Wesley Copeland, Daniel A. Okun, Alfred P. Van Huyck, Peter M. Kimm, Anthony A. Churchill.

Reassessing Personnel Supply and Demand in Scientific and Technical Occupations (29 May, 9:00 a.m., H): Changing employment requirements, personnel requirements, labor market analysis, technology policy analyst.

Jean E. Vanski, Charles B. Nam, Robert C. Dauffenbach, Ronald E. Kutscher, Alan Fechter, James Medoff, Laura P. Bautz, John T. Anagnost, Herbert I. Fusfeld, Jerrier A. Haddad, Harrison Shull, Paul Doigan.

14. Behavioral Sciences

Motor Development in Children (25 May, 9:00 a.m., H): Action, pattern formation, stability, change, coordination, task constraints, leg movements, theoretical aspects.

Herbert L. Pick, Jr., Thomas J. Tighe, Edward S. Reed, J. A. Scott Kelso, Karl M. Newell, Esther Thelen, Pierre Mounoud.

Mental Health in Social Context (25 May, 2:30 p.m., H): Socioeconomic status, working wives, crowding, isolation, social support, social class, schizophrenia, alternative models, life stress, psychopathology.

William R. Freudenburg, Catherine E. Ross, Ronald C. Kessler, John Mirowsky, Michael Hughes, Walter R. Gove, Peggy A. Thoits, Dean H. Harper, Bruce P. Dohrenwend.

Brain Structure, Learning, and Memory (26 May, 9:00 a.m., H): Cell biological analysis, associative and nonassociative learning, essential memory trace circuit, learned response, molecular economy, regenerating nerve cell, stochastic models, local and global factors, somatosensory cortex learning, artificial neurons.

Edward J. Wegman, Robert W. Newburgh, Gregory A. Clark, Richard F. Thompson, Bernice Grafstein, Donald P. Woodward, Leon N. Cooper, Barry L. Whitsel, Sidney W. Fox.

Cognition, Computing, and Interaction: Human-Computer Systems (27 May, 9:00 a.m., H): Information processing framework, naming, indexing, finding information, basic lisp concepts, computer skill acquisition, interface design, mapping schemas, computer environments, plan acquisition.

Scott P. Robertson, John B. Black, Lucy Suchman, Charles F. Schmidt, John L. Goodson, Thomas K. Landauer, Robin Jeffries, John R. Anderson, Robert L. Mack, Mary Beth Rosson, Arthur C. Graesser, Kelly Murray

New Thoughts About Teenagers' Contraceptive Behavior: Policy Implications (27 May, 9:00 a.m., H): Age, behavior, Sweden, United States, ideal contraceptive, future, family planning programs.

Hyman Rodman, Laurie Schwab Zabin, Jan E. Trost, Carl Djerassi, Roberta L. Herceg-Baron, Frank F. Furstenberg, Jr.

Cognition, Computing, and Interaction: Models of Cooperation (27 May, 2:30 p.m., H): Record keeping, clinical reality, cognitive change, misleading behavior, organizational issues, open systems, meta-level control architecture.

Wayne W. Zachary, Jerry Hobbs, Richard M. Frankel, Denis Newman, Bonnie Lynn Webber, Carl Hewitt, Victor R. Lesser.

Is There a Substitute for Hearing? (28 May, 9:00 a.m., H): Future, tactile devices, electrocutaneous sensory aids, cochlear implants, speech communication, Tadoma method.

Lawrence L. Feth, Arlene Earley Carney, Barbara Franklin, Donald K. Eddington, Charlotte M. Reed, William M. Rabinowitz, Nathaniel I. Durlach, Louis D. Braida.

Cognitive Development and Disciplinary Knowledge (28 May, 9:00 a.m., H): Intuitive conceptions, motion, preconceptions, physics, misconceptions, teacher assumptions, college biology, naïve knowledge, alternative frameworks, early number abilities, quantitative language, acquisition, number systems, naïve models.

Thomas J. Tighe, Joseph D. Novak, Ann Howe, Michael E. McCloskey, John J. Clement, Kathleen M. Fisher, Audrey B. Champagne, Rosalind Driver, Rochel Gelman, James G. Greeno, Lauren B. Resnick, Frederick Reif, Susan E. Carey.

The Polygraph Test: Detecting Deception in 1984 (29 May, 9:00 a.m., H): Three polygraph tests, use, validity, criminal investigations, preemployment screening, the guilty knowledge test.

David T. Lykken, Gordon Barland, Frank Horvath, Christopher Pyle, William G. Iacono, Leonard Saxe.

Psychological Testing and American Society: Historical Case Studies (29 May, 1:30 p.m., H): Henry Herbert Goddard, intelligence testing, public schools, Lewis Terman, Alfred Binet, democratic ideal, Robert Yerkes.

Michael M. Sokal, Leila C. Zenderland, Daniel P. Resnick, Henry L. Minton, James Reed, Franz Samelson.

15. Anthropology and Archaeology

Science and Religion: Renewed Dialogue in a Post-Modern, Post-Critical Culture (26 May, 9:00 a.m., H): Creation/evolution, historical and social contexts, anthropic principle, constructive interaction.

James B. Miller, Dean R. Fowler, Matthew L. Lamb, Ernan McMullin, Robert J. Russell, Stephen Toulmin.

The Cultural Selection of Risk (26 May, 2:30 p.m., H): Institutional factors, workers, interest groups, activists, environmentalism, revitalization movements, agenda.

Branden B. Johnson, Mary Douglas, Dorothy Nelkin, Daniel Metlay, Miriam Lee Kaprow, Vera Rubin, Jonathan Cole, Vincent Covello, Marx Wartofsky.

Credible Approaches to Nonexperimental Science (27 May, 9:00 a.m., H): History, empiricism, inductive reasoning, philosophical examination, cross-cultural studies, child development, linguistics, communication, ethnography, Mead-Freeman controversy, astronomy, observation and deduction, paleoclimates, paleopathology, ethnoarcheology.

Nancie L. Gonzalez, Richard A. Gould, Frederick R. Suppe, Alexander Alland, Jr., William O. Beeman, Melvin Ember, Elske v. P. Smith, Thompson Webb III, George J. Armelagos.

Evaluating the Impact of Foreign Aid: Policy and Program Implications (28 May, 9:00 a.m., H): AID's program, institutional learning, international water projects, African food policy, user's view, case studies from Africa.

Twig Johnson, Priscilla Reining, Michael Cernea, Pamela R. Johnson, Richard Blue, Patrick Fleuret, Tony Barclay.

Science, Culture, and Ancient Technology in the Study of Archaeometallurgy (28 May, 2:30 p.m., H): Ancient copper production, archaeological metal, potentials, pitfalls, ancient textual evidence, metalworking, ore sources, cultural implications.

Vincent C. Pigott, John F. Merkel, Michael R. Notis, Stuart J. Fleming, James D. Muhly, Tamara Stech.

Anthropology and the Emerging World Order: The Position of Small-Scale Autonomous Cultures in Latin America (29 May, 9:00 a.m., H): Tribal cultures, Brazil, Yanomami, ethnic autonomy, military and political struggle, cultural and territorial autonomy, Nicaragua, Panama, political feasibility, tribal autonomy, Amazonia, environmental conservation.

John H. Bodley, Daniel R. Gross, Kenneth I. Taylor, Bernard Q. Nietschmann, Nelly Arvelo-Jimenez, Raymond F. Dasmann.

Science, Art, and Archaeology, III (29 May, 9:00 a.m., H): Neutron activation, limestone, halos, small proportional counters, radiocarbon dating, ancient glass, radioactive waste disposal.

Saul Krasner, Gary W. Carriveau, Edward V. Sayre, Garman Harbottle, Maureen F. Kaplan.

Hard Decisions and Soft Data: Ethnography for Policy-Makers (29 May, 1:30 p.m., H): National housing experiment, private sector decisions, urban projects, two Latin American cities, BIA policy officials.

Robert M. Wulff, Erve Chambers, Steve Barnett, Lawrence F. Salmen, George E. Roth, David M. Smith.

16. Science and Technology Education

Precollege Education in the Mathematical Sciences: New Goals and Content (25 May, 9:00 a.m., H): Realities, opportunities, computer science, technology, modern applications, statistics and probability, exploring data, statistical activities.

Herbert J. Greenberg, Richard L. Scheaffer, Stephen Willoughby, Anthony Ralston, Richard Diprima, James M. Landwehr.

Discrete Mathematics as a Rival to Calculus in the Core of Undergraduate Mathematics (25 May, 2:30 p.m., H): Argument for change, importance of calculus, new courses, immediate needs, computer science, probability and statistics.

Stephen B. Maurer, Anthony Ralston, Ronald G. Douglas, William F. Lucas, Richard W. Hamming.

Increasing Participation in Science and Mathematics During the Precollege Years: Identifying the Barriers (26 May, 9:00 a.m., H): Images of science, 1981–1982 National Assessment, young women career decisions, technical professions, role perception, teacher/school attributes.

Sheila M. Pfafflin, Wayne Welch, Jacqueline Eccles, Cora B. Marrett, Jane Butler Kahle, Ann C. Howe.

Turf Protection versus Excellence in Science and Mathematics Education (26 May, 9:00 a.m., H): Crisis, cost and achievement effective, quality control, business, strategies, diagnosing, repairing, mechanisms, solutions, science research.

Frank W. Starr, F. James Rutherford, Eugenia Kemble, Carl W. Salser, Leonard Lund, Fred W. Decker, Robert Yager, William C. Schmitt, M. Joan Parent, Harry Lustig.

The Classroom Teacher's View of Recommendations to Improve Precollege Science Teaching (27 May, 9:00 a.m., H): Significance, maximizing the potential, teacher perspective, educating Americans, 21st Century, administrators, achieving excellence.

Walter A. Cory, Anna J. Harrison, Rochelle Rubin, Robert A. Morse, Juliana T. Texley, William Sawyers.

Achievement in Science: The Second International Science Study (27 May, 2:30 p.m., H): Results, science curricula, United States, implications, science education.

Willard J. Jacobson, Rodney L. Doran, June Miller, Douglas S. Reynolds.

Science and Math Education for the Twenty-first Century (28 May, 9:00 a.m., H): Looking back, "A Nation at Risk," national survival, reforms, midcareer projects, Project MESA, enrichment, students' intuition, alliance, the "Sky-Alive" Program.

Michael A. Guillen, Arthur H. Livermore, J. Arthur Campbell, Gerald Holton, Izaak Wirsup, Albert Shanker, Katherine K. Merseth, Arvin Blome, Judah L. Schwartz, Gilbert Valdez, Eleanor Franey.

Education for the Management of Large and Complex Systems (28 May, 2:30 p.m., H): Technology venturing, new institutional arrangements, civilian programs, educational dilemma, economic consequences, political actions, macro-projects, Third World, complexity, the competitive imperative.

A. George Schillinger, George Kozmetsky, Mel Horwitch, David Bodde, Tino Puri, John Manzo, George Bugliarello.

Student Learning and Problem-Solving in the Sciences (29 May, 9:00 a.m., H): Genetics, conceptual knowledge, heuristics, algorithms, physics, chemistry, moles, cognitive style, microcomputer applications, information science.

Dorothy L. Gabel, James H. Stewart, Lillian C. McDermott, Carl F. Berger.

Young Scientists, Education, and Responsibility: A Dialogue (29 May, 9:00 a.m., H): Questioning costs, barriers, student involvement, science, technology, society, trends, engineering, stress, social responsibility.

David C. Leifer, Karen Wieckert, David Cheney, Jeffrey Dunham, Kathryn Harrison, Victor Weisskopf.

Politics of Science Education (29 May, 1:30 p.m., H): Science or technological literacy, economy, congressional legislative action.

Alphonse Buccino, Jennifer W. Vance, Herbert J. Walberg, Francis P. Collea.

17. Public Understanding and Ethics

Ethics in Human Research: Past, Present, and Future (25 May, 9:00 a.m., H): Balancing interests, 1984 research, cheating, reflections, law, ISRA experience, pursuit of principles, self-regulation, social control.

Burr Eichelman, David B. Adams, Daniel I. Wikler, Nicholas H. Steneck, Hal Edgar, Mark S. Frankel.

Risk, Responsibility, and the Mass Media (25 May, 9:00 a.m., H): Perception, communicating information, coverage, scaring or informing the public.

Sharon M. Friedman, Sharon L. Dunwoody, Paul Slovic, Jane Brody, Saul Kohler, Karen Birchard, Mark Dowie, Robert Zalisk.

Openness and Secrecy in Scientific Communication (25 May, 2:30 p.m., H): Origins, agreements, exchanges, biological materials, biotechnology, implications, financing and control, research.

Rosemary Chalk, Alexander C. Fabergé, Patrick D. Kelly, Eric Holtzman, Nicholas Wade.

The Press of Science and Technology: What Message from the Media? (25 May, 2:30 p.m., H): Corporate funding, university research, nuclear power.

Fred Jerome, Lee D. Mitgang, Edwin C. Whitehead, Bernard L. Cohen, Paul L. Loewenwarter.

Whistle Blowing Examined: Recent Research on Dissent in Corporate and Government Employment (26 May, 9:00 a.m., H): Out-of-channels, overheads, incidents, role of law, protection, dispute resolution, bureaucratic ethos, dissent, encouraging mechanisms, federal agencies, strategic analysis, federal employees.

Michael A. Baker, Albert Flores, Alfred G. Feliu, Mary P. Rowe, Robert Jackall, Vivian Weil, John M. Palguta, F. A. Elliston, Marcia P. Miceli, Janet P. Near, Alan F. Westin, Rosemary Chalk.

The Role of the Forensic Sciences in the Documentation of Human Rights Abuses (27 May, 9:00 a.m., H): Methodology, anthropology, skeletal evidence, odontology, autopsies, missions, ancestry, genetic observations.

J. Cristian Orrego, Eric Stover, Luke G. Tedeschi, Clyde C. Snow, Lowell J. Levine, Cyril H. Wecht, Luigi L. Cavalli-Sforza, Jorgen L. Thomsen.

Engineering Ethics: In Classroom, Job, and Profession (27 May, 2:30 p.m., H): Uniform code, regulated industries, curricula.

Rachelle D. Hollander, Taft Broome, Michael Baker, Vivian Weil, Robert M. Anderson, Jr., Dennis Chamot.

Increasing Public Understanding of Science and Technology (28 May, 9:00 a.m., H): 3-2-1 contact, 8–12 year olds, audiences, television programming, newspaper reporting, magazines, information in Europe, new information, teachers, interacting, communities, development and measurement, museum audiences and programs.

Jon D. Miller, Joyce R. Blueford, Evelyn Davis, Jonathan Ward, Paul G. Hayes, Allen L. Hammond, Annagreta Drying, Brian Duff, Theodore H. Ansbacher, Alan M. Voelker, Michael Templeton, Bonnie Van Dorn, William G. Wells, Jr.

Evolution, Morality, and the Meaning of Life (29 May, 9:00 a.m., H): Sociobiologist's, biologist's, and philosopher's view; religion.

Jeffrie G. Murphy, Michael Ruse, David L. Hull, G. C. Williams, Arthur Caplan.

Congress, Science, and Scientists (29 May, 9:00 a.m., S): Representative's perspective, changing role, issues, policy-making, functions, achievements, limitations, science and engineering fellows.

Richard A. Scribner, Claudine Schneider, James McCullough, John Andelin, Thomas H. Moss, Allan Hoffman.

18. Science and Technology Policy

The Impact of Women on International Development (25 May, 2:30 p.m., H): Gender inequality, Philippine women scientists, media use, development process, Third World women in United States, issues.

Patricia J. McWethy, Denise Weiner, Anna J. Harrison, Ruth Hill Useem, Sekai Holland, Clare M. Stapleton Concord, Lydia Makhubu, Jane Janney Weber.

Science and Technology for International Development: Multilateral Institutions (26 May, 9:00 a.m., S): United Nations system, U.S. policies, multilateral aid, S&T cooperation, the World Bank, European perspective.

Robert P. Morgan, R. Martin Lees, Nyle C. Brady, Charles Weiss, Jr., Henry Durand.

Biological Research and Military Policy (26 May, 2:30 p.m., S): Recent developments, biological weapons, implications, CBW Policy I and II, improvements, Biological Weapons and Warfare Conventions, international law.

Richard P. Novick, Susan P. Wright, Julian P. Robinson, Theodore Gold, Jonathan A. King. Robert Mikulak, Richard A. Falk.

Science and Unesco: The Impact of United States Withdrawal (27 May, 9:00 a.m., H): Unesco and world climate, manpower training, field programs and development, priority-setting, nongovernmental organizations.

Sidney Passman, Roger Revelle, Arthur K. Solomon, Robert Maybury, John E. Fobes, Thomas F. Malone.

The Role of Federal Laboratories: Toward a New National Policy? (27 May, 9:00 a.m., S): Policy analysis, White House Science Council, DOE multiprogram laboratory study, laboratory director perspective, issues, legislative action.

Albert H. Teich, W. Henry Lambright, Thomas J. Wilbanks, David Packard, Ivan Bennett, Herman Postma, Langdon Crane.

Funding and Knowledge Growth (27 May, 2:30 p.m., H): Temporal patterns, reproductive physiology, nonhuman primates, friend virus research, science mapping, research planning.

Susan E. Cozzens, Carl B. Backman, Edward J. Hackett, Helen Hofer Gee, Peter B. Healey, Harry Rothman, L. Vaughn Blankenship.

Scientific Research in Africa (27 May, 2:30 p.m., S): Technology, national development, future horizons, African research institutes, universities, Nigerian experience, scientific societies, case study, international and intra-African cooperation, soapberry plant endod.

Denise Weiner, Walter E. Massey, Balla Keita, Thomas R. Odhiambo, Olusegun Oke, Lydia P. Makhubu, Aklilu Lemma, David S. Wiley.

Peer Review and Public Policy (28 May, 9:00 a.m., H): Proposals, consensus development process, science by fiat, NAS Risk Assessment Report, rhetoric, regulatory domain, the national toxicology program.

Daryl E. Chubin, Sheila S. Jasanoff, Rustum Roy, John T. Kalberer, Jerome Ravetz, David P. Rall, Marcel C. La Follette, Richard S. Nicholson.

What Limitations on Professorial Relations with Industry? (28 May, 9:00 a.m., S): Criteria, participation, recent trends, actions.

Herbert I. Fusfeld, George Bugliarello, Robert F. Goldberger, Wilbert Lepkowski, Richard A. Swalin.

Strategic Planning for University-Industry Interaction on Research (28 May, 2:30 p.m., S): Business concepts, entrepreneurship, insights, utilization, phantom central research facility, interactions, General Electric.

Charles F. Larson, Ward J. Haas, William A. Ragan, Jason M. Salsbury, Alva L. Frye, Charles K. Leeper, David G. Worden.

Science and Crisis in Central America (28 May, 2:30 p.m., S): Guatemala, development, technology, El Salvador, revolution, integrated pest management, Nicaragua, social and political transformation, agricultural technology, Costa Rica.

John H. Vandermeer, Douglas H. Boucher, Julio Quan, Ricardo Calderon, Alejandro Rodriguez, Sean Swezey, Rodrigo Gutierrez.

Knowledge Transfer Through Patenting: Issues in University Participation in the Marketplace (29 May, 9:00 a.m., H): Inventions, academic research, indicators, output, commercialization, patent policy, role in society, PL 96-517.

Pamela Ebert-Flattau, Carlos Kruytbosch, Willard Marcy, Norman Latker, Robert H. Linnell, Howard Bremer.

Outlook for R&D in the FY 1985 Budget (29 May, 9:00 a.m., S): Overview, OMB, Capitol Hill and industrial perspectives, impacts, academic community.

Albert H. Teich, Willis H. Shapley, Jill H. Pace, William G. Wells, Jr., Hugh F. Loweth, Michael L. Telson, Frank B. Sprow, John C. Crowley.

The Climate for Private Sector Innovation: Have Government Policies Helped? (29 May, 1:30 p.m., H): Investment, limited partnerships, R&D; university/industry interactions, joint R&D and antitrust laws.

James L. Dwyer, Margaret Grucza, Jack Williams, Mary Good, Irving P. Margulies.

19. Arms Control and National Security

New Perspectives on the Prevention of Nuclear War (25 May, 9:00 a.m., S): Professionals, special responsibilities, complexity, coupling, catastrophe, psychology contributions, political theory, national security policy, arms control.

Yole G. Sills, Thomas H. Murray, Charles Perrow, Otto Klineberg, George B. Hogenson, Robert R. Holt.

Problems and Techniques of Cross-Cultural Negotiations from Research and Practitioner Perspectives (25 May, 2:30 p.m., S): Practical considerations, culture conflict, security negotiations, United States, U.S.S.R., Contadora approach, Central American crisis, tensions, conflicting ambitions, Middle East peace, nonaligned, obstructors to negotiation.

Elise M. Boulding, Betty Goetz Lall, Brian Urquhart, Miguel Marin-Bosch, Landrum R. Bolling, Arthur Lall.

Nuclear Arms Control: Assessing the Current Proposals and Negotiations (26 May, 2:30 p.m., S): Intermediate force issues, defense of Europe, security issues.

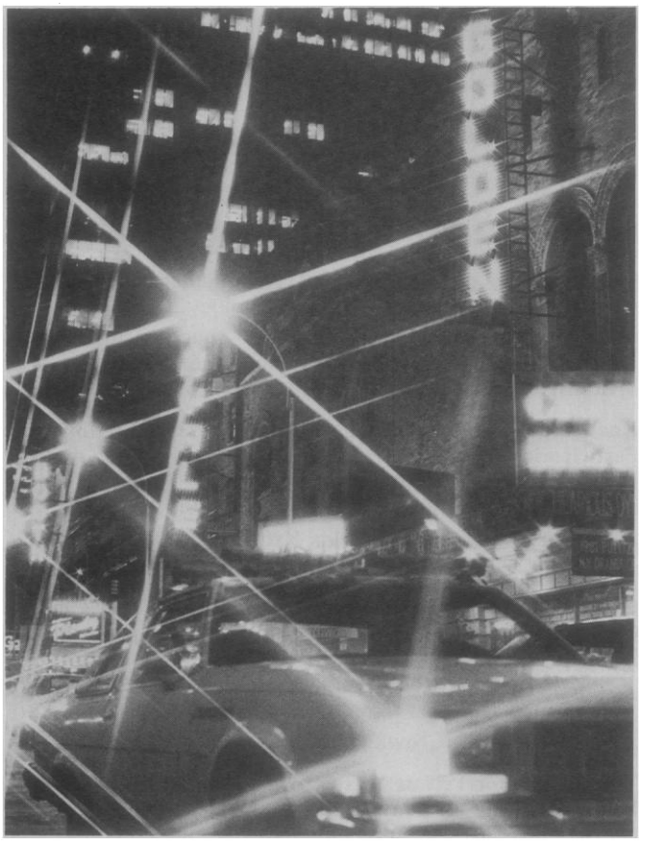
Brewster Denny, Richard A. Scribner, Rodney W. Nichols, Paul Nitze, George Rathjens, Condoleeza Rice.

Implications of the Ability to Deliver Munitions with Accuracy (27 May, 9:00 a.m., S): Conventional arms, high accuracy, limited nuclear war, dangerous trend.

George Rathjens, William J. Perry, Walter B. La Berge, Michael Klare, Jaspar Welch, Kosta Tsipis, Jonathan Dean.

Verification Issues in Arms Control, Two Cases: Cruise Missiles and Fissionable Material (27 May, 2:30 p.m., S): Technology, strategy, politics, ban feasibility, weapon material, production.

Herbert Scoville, Richard A. Scribner, Richard K. Betts,



Kosta Tsipis, Frank von Hippel, Joseph S. Nye, Jr., George Rathjens, Jane Sharp.

Space and International Security (28 May, 9:00 a.m., S): United States, U.S.S.R., use of space, military activities, congressional viewpoint, current treaties, future possibilities, arms control.

Charles A. Zraket, Richard A. Scribner, Ashton B. Carter, Stephen M. Meyer, Marcia Smith, Robert W. Buchheim, Richard L. Garwin.

Science, Technology, and the Arms Race (29 May, 9:00 a.m., S): Weapons laboratory, space-based weapons, defensive missile shield, role of technology, strategic policy, public policy, chemical weapons.

David L. Hawk, Jay Kappraff, Hugh DeWitt, Richard Garwin, Robert Jastrow, Carl Kaysen, Matthew Meselson, James Schlesinger, Brent Scowcroft.

Long-Term Environmental and Biological Consequences of Nuclear War: Does It Matter? (29 May, 1:30 p.m., H): Smoke, dust, radioactivity, explosions, climatic effects, emission scenarios, agricultural and biological impacts, military implications, reactions, non-combatant nations, nuclear winter scenario.

Stephen H. Schneider, Walter Orr Roberts, Richard P. Turco, David Pimentel, Charles A. Zraket, F. Kenneth Hare.

Workshops

Usefulness of the Marxist Outlook in Science (24 May, 9:00 a.m., S): Logic, internationalist understanding, human development, biotechnology, monopoly, Third World, organizing power, social sciences, Marxist Action Caucus.

Lester Talkington, David B. Adams, James M. Lawler, Angela M. Gilliam, Eli C. Messinger, Issar Smith, Michael J. Parenti.

Essentials for Clear Communications (24 May, 1:30 p.m., S): Visual aids, sensory-impaired audience, effective interviews, hostile audiences.

Sharon L. Campbell, Jonathan Y. Richmond, Gerald R. Campbell, Dodi Schultz, Lewis Freeman.

Scientists and Human Rights: Present and Future Directions (24 May, 9:00 a.m., S): Soviet Union, Eastern bloc, scientific societies, Latin America, Asia, Africa, case study, psychiatric abuse, international arena, mechanisms, American States, communications, Unesco, urgent action, correspondent network.

Kathie McCleskey, Carol Corillon, Lipman Bers, Thomas Edison, Robert Lawrence, Peter Reddaway, Thomas Jabine, Pirjo Pietinen, Cristina Cerna, Amy Young.

STS: A Tutorial Session on Optimum Technologies (24 May, 9:00 a.m., S): Public health, regenerative agriculture, export, less developed world, biotechnologies, guiding choices, scientific research.

Rustum Roy, William F. Williams, John L. McKnight, Richard Harwood, K. Nagaraja Rao, Jonathan King, Nicholas Maxwell, John G. Truxal, Ernst U. von Weizsacker, Marcus Raskin.

Fossils, Genes, and Time: Paleontological versus Macromolecular Approaches to the Study of Higher Primate Phylogeny (26 May, 2:30 p.m., Special Location: Kaufman Theater, American Museum of Natural History, Central Park West and 79th Street): The workshop is a sequel to the symposium of the same title held the morning of 26 May at the New York Hilton. For details, see symposium listing in Category 6 (Biological Sciences).

Schedule of Contributed Papers

The contributed papers will be presented in **poster session format only**; there will be no slide sessions. Abstracts for the individual papers will be found in the *Abstracts of Papers* volume, which is available on site to all registrants. The poster sessions will be held in the Exhibit Hall at the Sheraton Centre Hotel; they are scheduled as follows:

Poster Session I (26 May, 11:30 a.m.–1:00 p.m.).
American Junior Academy of Science:
Research Papers by High School Students.

Poster Session II (26 May, 1:30 p.m.–3:00 p.m.).
Zoology; Botany; Ecology.

Poster Session III (27 May, 11:30 a.m.–1:00 p.m.).
Biomedical Sciences I.

Poster Session IV (27 May, 1:30 p.m.–3:00 p.m.).
Biomedical Sciences II.

Poster Session V (28 May, 11:30 a.m.–1:00 p.m.).
Physical Sciences; Mathematics; Social Sciences.

Poster Session VI (28 May, 1:30 p.m.–3:00 p.m.).
Neuroscience; Behavior; Cognition.

Meeting Information

This year's Annual Meeting activities will take place in two hotels that are located within one city block of each other.

New York Hilton (H), Avenue of the Americas (6th Avenue) at 53rd Street: Public lectures (evening) and symposia; business meetings and social functions; registration, information, and ticket desks; resource rooms for disabled and for minority registrants; Science Film Festival; newsroom, speakers' room, and employment information.

Sheraton Centre (S), 7th Avenue at 52nd Street: Public lectures (midday), symposia, and workshops; exhibits and poster sessions (contributed papers); business meetings and social functions.

Hotel Reservations

The AAAS has reserved hotel rooms at special, reduced rates at the New York Hilton and the Sheraton Centre hotels. **These reduced rates are guaranteed only when reservations are made through the AAAS Housing Department before 1 May 1984.** Please read and fill out carefully the hotel reservation form on page 1399 in this issue. Room assignments will be delayed if any information is omitted from the form. The Housing Department cannot accept reservations by telephone.

Do not be a "No-Show"! If you have made a reservation and find that you cannot keep your commitment, write to the Housing Department or call the hotel and cancel.

Advance Registration

Registration categories and applicable fees are listed on the advance registration form on page 1398 in this issue.

Register in advance; you will save money and avoid standing in line at the on-site registration desk. You can charge the registration fee to your VISA or MasterCard.

On-site registration fees will be higher: AAAS members, $46 (with spouse, $63); non-members, $58 (with spouse, $75); student or emeritus, $27 (with spouse, $44).

Advance registrants, please note: In mid-April, we will mail to you an expanded preconvention program, your badge and registration receipt together with a voucher for your registration packet. Present the voucher at the Advance Registrants' desk in the New York Hilton (Promenade, second floor) to receive the program book, condensed program (foldout), and abstracts volume. The registration area will be open during the following hours:

Thursday, 24 May	12 noon–6:00 p.m.
Friday through Monday, 25–28 May	8:00 a.m.–6:00 p.m.
Tuesday, 29 May	8:00 a.m.–12 noon

Registration Refunds

The AAAS will refund advance registration fees for all cancellations received by letter or telegram before 18 May 1984. **No refunds will be made on cancellation notices received after that date.** Refunds will be mailed from the AAAS offices in Washington after the Annual Meeting.

Tax Deductions for Educational Expenses

U.S. Treasury regulation §1.162-5 allows an income tax deduction for educational expenses (registration fees, cost of travel, meals, and lodging) incurred to (i) maintain or improve skills required in one's employment or other trade or business or (ii) 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 that leads to a degree.

Air Travel to New York

The AAAS has arranged with Delta Air Lines and United Airlines to make special discount air fares available to those attending the Annual Meeting. For details, see page 1400 in this issue.

Ground Transportation

Airport-to-Hotel: New York City is served by three major airports from which various modes of transportation to the city center are available. The prices quoted below were in effect at press time and may be subject to change. *John F. Kennedy International Airport (15 miles):* By taxi, about 45–60 minutes (depending on traffic) and $22–25; by airport bus to the Eastside Terminal, $6; by public transit bus, 75¢, and subway, 75¢; by helicopter to E. 34th at East River, $39. *La Guardia Airport (8 miles):* By taxi, about 30 minutes and $10–15; by airport bus to Eastside Terminal, $4.50; by helicopter to E. 34th at East River, $30. *Newark International Airport (16 miles):* By taxi, approximately 60 minutes and about $30 plus tolls; by airport bus to the Port Authority Terminal, $4; by train to Penn Station, 75¢; by helicopter to E. 34th at East River, $44.

Rail: The *Grand Central Terminal* (East Side) is served by Amtrak from upstate New York and by other railroads for commuter service within 100 miles of the city. *Pennsylvania Station* (West Side) is served by Amtrak from all other points.

Taxi Rates: $1 at flag drop; 10¢ each additional 1/9 mile; 50¢ surcharge at night.

Public Transit: The Metropolitan Transit Authority (MTA) operates buses and subways throughout the five boroughs. Fare is 75¢, exact change or token required; bus transfers are free.

Parking

The New York Convention and Visitors Bureau recommends that visitors do not bring their cars into the city. Parking space in midtown Manhattan is scarce and, when available, very expensive. We encourage those who live within driving distance of New York City to travel by train or bus and use public transportation while in the city.

Resources for Disabled Registrants

The AAAS, in cooperation with the New York Advisory Committee, is 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 services will be provided through the Resource Room located in the New York Hilton Hotel: transportation to and from airports, train stations, and bus terminals; interpreters for the hearing-impaired at all public lectures, and for other sessions on request; special tour and sight-seeing information; audiotaped program highlights for the visually impaired; assistance in movement within and between hotels; and emergency repair for wheelchairs.

Persons needing special accommodations and services are strongly urged to so indicate on the registration and housing forms. *Your early response will help us to plan and serve you better. For additional information, contact Virginia*

Stern, AAAS Project on the Handicapped in Science, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036 (telephone, 202/467-4497).

Child Care

Gilbert Child Care (212/744-6770) will provide baby-sitting or companion care services at the rates listed below plus sitter's transportation cost (before 8:00 p.m., $2; after 8:00 p.m., $4):

Infant to 2 months	$6.00/hr. (4 hrs. min.)
2 months to 9 months	$5.10/hr. (4 hrs. min.)
9 months and up	$4.25/hr. (4 hrs. min.)

The agency accepts calls Mondays through Fridays between 9:00 a.m. and 5:00 p.m. and requests 24 hours advance notice. Since the Annual Meeting extends over the Memorial Day weekend, it is recommended that parents complete child-care arrangements well before the weekend.

Message Center

AAAS will operate a message center throughout the Annual Meeting, open during registration hours. Telephone messages may be left during those hours by calling the New York Hilton, **212/586-7000**, and asking for the AAAS Message Center. Messages will be posted on a message board located in the registration area.

AAAS
Science Film Festival

The Science Film Festival continues to be a popular feature of the AAAS Annual Meeting. The Festival presents a unique collection of recent educational and entertaining films that deal with the natural and social sciences, the technologies derived from them, and the social issues they raise. The 1984 Festival includes a wide variety of productions in each of these subject areas.

The Science Film Festival will run from 10:00 a.m. to 4:00 p.m., Friday, 25 May, through Sunday, 27 May, and from 10:00 a.m. to 3:00 p.m., Monday, 28 May, in the Mercury Ballroom of the New York Hilton. Admission is free.

Detailed information about the films presented at the Festival will be printed in the Annual Meeting Program.

Friday, 25 May

10:00 a.m.	Australia's Animal Mysteries
11:02 a.m.	Computer: Tool for the Future
11:28 a.m.	Inventors and the American Industrial Revolution
11:45 a.m.	The Great Horseshoe Crab Field Trip
12:16 p.m.	Mzima: Portrait of a Spring
12:47 p.m.	The Mysterious Manatee
1:05 p.m.	Pinkfoot
1:27 p.m.	The Laser Beam
1:50 p.m.	The First Inch
2:21 p.m.	An E.E.G. Is Not An Egg
2:37 p.m.	Palace of Delights

Saturday, 26 May

10:00 a.m.	The Miracle of Life
11:02 a.m.	The Impossible Bird
11:30 a.m.	The Garden of Eden
12:01 p.m.	1984 Revisited
12:44 p.m.	Brittle Bones
1:09 p.m.	Born To Run
1:38 p.m.	Fossils: Clues to the Past
2:04 p.m.	The Piano
2:35 p.m.	Among the Wild Chimpanzees

Sunday, 27 May

10:00 a.m.	Reef Communities: Making Use of 400 Million Years of Evolution
11:02 a.m.	Sandra and Her Kids
11:33 a.m.	Birth of a Brain
12:11 p.m.	Intimate Companions
12:31 p.m.	The Fragile Mountain
1:30 p.m.	Code Gray: Ethical Dilemmas in Nursing
2:02 p.m.	Seabirds
2:22 p.m.	DES: The Timebomb Drug
2:53 p.m.	Eyes Over China

Monday, 28 May

10:00 a.m.	The Making of a Continent: The Price of Gold
11:02 a.m.	The Double Life of the Whooping Crane
11:21 a.m.	Celestial Earth
11:35 a.m.	New Alchemy: A Rediscovery of Promise
12:12 p.m.	Living On Our Changing Planet
12:38 p.m.	Nuclear Strategy for Beginners
1:40 p.m.	Short-Eared Owl
2:00 p.m.	Asbestos: A Lethal Legacy