Food Through Policy

When we paused in our heroic trek through all of science (see *Science*, 14 February), we were somewhere between the vast depths of outer space and the intimate depths of our innermost selves, engaged in the great quest for habitability. We return now to our story of this quest.

*Agriculture* ♦ *Food Policy*. When last pursuing habitability on our planet, we limited our concerns, more or less, to natural phenomena (see *Geology* ♦ *Ecology*). Now let us see what man hath (or should have) wrought to ensure habitability. Producing food is high on anybody's list, and agriculture is the prime activity for doing this. We first look at some issues in agricultural research and development, including safeguarding our global stock of plant genetic resources, the possibilities of finding beneficial chemicals in plants, and the public health problems raised by the use of antibiotics in raising food animals. We then turn our attention, in four sessions, to the technological, social, economic, and political issues that now face agriculture, looking at both the immediate and long-term prospects for farming as an enterprise.

*Environmental Concerns*. What is happening to our environment is high on our list of concerns about the habitability of this planet and is next on our tour. Beginning with a look at the contamination and restoration of two of the largest estuaries on the East Coast, the Chesapeake Bay and the Delaware River, both near our host city of Philadelphia, we next turn our attention to an "in-house" habitat problem, viz., that by building on geological formations from which radon seeps, we have contaminated our homes. We then look at other technological hazards in home and workplace, from insidious neurotoxic chemicals through the implications of the Three Mile Island incident and the Bhopal disaster to the general problem of managing these hazards.

*Population and Resources*. The availability of food and the contamination of our environment are two aspects of the interrelationships among population, resources, and the environment. Again, we begin with an overview and then proceed to specific issues: refugees, drought, famine, use of irrigation, and the role of biotechnology in health care in the Third World. We then consider some broader issues, such as world food production and the future of our energy resources, before summing up through a look at human ecology in more general terms.

*Anthropology* ♦ *Sociology*. Population, clearly central to any discussion of the habitability of our planet, is also the central subject of these sciences. In this centennial year of the University Museum of the University of Pennsylvania and of the first U.S. graduate anthropology department, we begin this category with a look at anthropology as it is one hundred years later. A strong program then looks at these specific issues: the evolution of culture, archaeology (a particular forte of the University Museum), the family in prehistory, geophagy (common among nutritionally deprived populations), the changing nature of religions in contemporary America, and, as a finale, the study of corporate culture—the ubiquitous culture of America.

*Sociology of Science*. From corporate culture to the culture of science is but a small step, and so we look at the results of turning our scientific canons on science itself. How unbiased is science, particularly when gender is involved? Is there a bias in its methodologies, in the way it formulates hypotheses? And what, more generally, of the research enterprise—how are scientists motivated and their creativity enhanced and how is it all controlled? Should the enterprise be isolated from the "real world"? What of the influence of the role of science in politics? All important questions as we put the culture of science under the microscope.

*History and Philosophy of Science*. From the microscope we move to a broader view, looking at how scientific ideas developed historically and are applied, examining the specific case of fluorine on the centennial of its discovery, and also considering the role of chance in scientific discovery. Our broader view continues with such issues as: whether there is a consensus in the philosophy of science, and whether agreement exists about values in science. Finally, we look at changes in the Third World brought about by our advances in scientific knowledge.

*Science: Education and Public Understanding*. Science is an enterprise and a way of knowing. It has major implications for society, and we must ask how well this scientific knowledge and its implications are communicated to the public and, in particular, to the next generation. We examine what recent developments in cognition imply for teaching methodologies and the role of parents in the education process. We look at professional education in science and engineering, including recent state initiatives. We return to questions about gender and racial bias and move on to ways to encourage new opportunities for the disabled brought about by new technologies. Finally, we ask how well the public is informed: What is the status of scientific literacy? How well do the media report science information?

*Scientific Freedom and Responsibility*. Before leaving the scientific enterprise and its "product," we take a closer look at the interaction between this enterprise and the larger society. We look at the conflict between the need for freedom in the pursuit of science and the restrictions made for reasons of national security and of individual rights, particularly in regard to the guarantees in the First Amendment. We ask such questions as: Who owns the data produced by science? What are the security implications of the international flow of information, primarily to and from the Third World? We look at sessions on human rights: considering ways to determine the extent of the problem and to track violations, and examining the status of refugee scientists from oppressive regimes, especially that of South Africa.

*Science, Arms Control, and National Security*. After this extended excursion into the nature of the scientific enterprise and its interrelation with society, we return to our leitmotif with the
question: What hath science wrought regarding global habitability? We survey the balance of terror: United States and Soviet missile defenses, antisatellite weapons, antisubmarine warfare, and biological warfare. Finally, we are led to arms control: the Soviet approach, our negotiations in Geneva, and the prospects for verification of arms control agreements.

**International Science and Technology.** The obverse to what science hath wrought is what science can do to improve the international situation. We begin by looking at the status of science in the Caribbean (with a report from the newest AAAS Division) and of recent developments in China. Next, we consider transfer of technology in international trade, the status of scientists and engineers "abroad," and finally, international cooperation in science as a way of building essential connections among nations.

**Science and Technology Policy.** The final chapter in our story of the quest for habitability and the special role of science and engineering in that quest focuses on policy. Vannevar Bush's classical vision published in his *Endless Frontier* is updated and followed by a look at the impact of the new information technologies, the role of government in managing technological change, the impact of our rising support for national defense, the virtues of sharing research facilities, and the importance of state (as opposed to federal) science initiatives. We sum up with a session that looks at the larger question of matching our intellectual resources with our global needs, accompanied by a coordinated special debate between former AAAS president Kenneth E. Boulding and the acting science adviser to President Reagan, John P. McTague, on "The Responsibility of the Scientist Toward the World, the Nation, and the Future of Science."

This brings us to the end of our journey through some 150 wide-ranging symposia awaiting you in May. We have traveled from the universe to our inner selves, from institutions to the nature of science, from what we have done to our planet to what we can do for our planet and its habitability. Now that I have piqued your interest, you certainly will want to experience this feast of science firsthand. Run, do not walk, through the next few pages to the registration forms and send yours in today! You will thank me when we meet in Philadelphia. • Arthur Herschman

### Preliminary Program, II

#### 11. Agriculture Research and Policy

**11-1. New Frontiers in Agricultural Research** (26 May). Organized by Shu-I Tu and Thomas Kumosinski ([U.S. Department of Agriculture–Agricultural Research Service](http://science.sciencemag.org/)).

**11-2. Seeds and Sovereignty: Debate over Control of Plant Genetic Resources** (28 May). Organized by Jack Kloppenburg, Jr. ([University of Wisconsin](http://science.sciencemag.org/)).

**11-3. Public Health Impact of Subtherapeutic Use of Antibiotics in Food Animals** (27 May, 2 sessions). Organized by Virgil W. Hays ([University of Kentucky](http://science.sciencemag.org/)) and Gerald B. Guest ([U.S. Food and Drug Administration](http://science.sciencemag.org/)).

#### 12. Environmental Concerns

**12-1. Chesapeake Bay Fisheries and Contaminant Problems** (26 May). Organized by Lenwood W. Hall, Jr. ([Johns Hopkins University](http://science.sciencemag.org/)).

**12-2. Ecology and Restoration of the Delaware River Basin** (26 May). Organized by Dean A. Rosebery ([Northeast Missouri State University](http://science.sciencemag.org/)).


**12-4. Evaluating the Neurotoxic Risk Posed by Chemicals in the Workplace and Environment** (27 May). Organized by John

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**AAAS Annual Meeting • Philadelphia • 25–30 May 1986**

Meeting activities are scheduled in three downtown Philadelphia hotels: Franklin Plaza, Hershey Philadelphia, and Holiday Inn — Center City. Free shuttle busses will be available.

Discounted room rates and registration fees are available to those who use the official AAAS housing and registration forms (see p. 1020).

More information will appear in these issues of *Science*: 14 March, Tours and ticket order forms; 28 March, Preconvention Program and events schedule; 11 April, last-minute information, housing and registration forms.

Housing and registration forms may also be obtained by calling 202/326-6450.
13. Population and Resources


13-2. The Uses of Social Science Data: Assessing the Survey Research on Southeast Asian Refugees (28 May). Organized by DAVID W. HAINES.


13-5. World Food Production and Distribution as a Factor in Geopolitics (27 May). Organized by DAVID R. WALKER (Utah State University) and JAMES W. ROWE (AAAS).

13-6. Potential of New Biotechnologies for Health Care in Developing Countries (26 May, 2 sessions). Organized by JAMES W. ROWE (AAAS) and RAMIRO MARTINEZ (Pan American Health Organization).


14. Anthropology ♦ Sociology


14-3. Archaeology: The Role of the University Museum (27 May). Organized by ROBERT DYSON (University of Pennsylvania Museum).


14-5. Geophagy: Current Views on a Worldwide Practice (30 May). Organized by DONALD E. VERMEER (Louisiana State University) and SOLOMON H. KATZ (University of Pennsylvania).


14-7. Studying Corporate Cultures (28 May, 2 sessions). Organized by WILLIS E. SIBLEY (Cleveland State University).

15. Sociology of Science


15-5. Enhancing Creativity in Federal Laboratories (27 May, 2 sessions). Organized by DAVID ATLAS (University of Maryland) and NOEL HINNERS (NASA–Goddard).

15-6. Qualitative and Quantitative Data Sources in the Social Study of Science (30 May). Organized by CHARLES U. LOWE (National Institutes of Health).


Symposium Proposals for AAAS Chicago Meeting

The 1987 Annual Meeting will be held 14–19 February in Chicago, less than 9 months after the Philadelphia Meeting. It is not too early to send in your symposium suggestions (deadline: 15 April 1986). See "Call for 1987 Symposium Proposals" in the 17 January and 21 February issues of Science, or contact the AAAS Meetings Office (1333 H Street NW, Washington, DC 20005; telephone, 202/326-6448) for proposal forms.
Workshops

A special feature of the 1986 AAAS Annual Meeting is a number of workshops held on Saturday and Sunday (24 and 25 May) before the Meeting begins. For detailed information about any of these workshops, please contact the responsible AAAS office.

AAAS-ITT Workshop on Professional Responsibility and the Professional Societies. [No. 22-1; two days, 24 and 25 May; requires a separate registration fee.] Organized by ROSEMARY CHALK (AAAS). Contact: Committee on Scientific Freedom and Responsibility, 202/326-6793.

Workshop on Conservation and Survival. [No. 22-2; two days, 24 and 25 May.] Organized by BRIAN SPOONER (University of Pennsylvania Museum). Contact: Secretary of Section H (Anthropology), 202/326-6653.

Conference in Conjunction with the Trilateral Research Project Proposal. [No. 22-3; one-half day, 25 May.] Organized by CYRUS MCKELL (NPI, Inc.). Contact: Secretary of Section H (Anthropology), 202/326-6653.

15-8. The Effect of Nobel Prizes on Science, Scientists, and the U.S. Public (26 May). Organized by JONATHAN WARD (NBC News), SANDRA WALKER (KCTS, Seattle), and PATRICIA CURLIN (AAAS).

16. History and Philosophy of Science

16-1. One Hundred Years of Fluorine: From Isolation to Industrial Applications (28 May). Organized by JEFFREY L. STURCHIO (Center for History of Chemistry).

16-2. Emerging Consensus in the Philosophy of Science (30 May). Organized by C. WADE SAVAGE (University of Minnesota).

16-3. The Role of Chance and Serendipity in Science (26 May, 2 sessions). Organized by PATRICK J. HANNAN (U.S. Naval Research Laboratory) and RUSTUM ROY (Pennsylvania State University).

16-4. Perspectives on Values (29 May, 2 sessions). Organized by JOHN A. DILLON, Jr. (University of Kentucky).

16-5. The Knowledge Revolution, Transnationals, and the Third World (30 May). Organized by ARISTIDE H. ESSER (Association for the Study of Man-Environment Relations) and WILLIAM H. VANDERBURG (University of Toronto).

17. Science: Education and Public Understanding

17-1. Recent Advances in Learning Theory and Implications for Science Education (29 May). Organized by JOSEPH D. NOVAK (Cornell University) and KATHLEEN FISHER (University of California–Davis).


17-8. The Unreported Stories: Mass Media and Science in Developing Countries (29 May). Organized by JAMES CORNELL (Smithsonian Institution).

18. Scientific Freedom and Responsibility


Organized by Rosemary Chalk (AAAS) and Miron Straf (National Research Council).


19. Science, Arms Control, and National Security


19-3. Strengthening the Prohibition Against Biological Warfare (27 May). Organized by Everett Mendelsohn (Harvard University) and Susan Wright (University of Michigan).


19-5. STARTs, Stops, and Talks: A Conversation with the Chief Negotiator in Geneva, Max Kampelman (28 May). Organized by Richard A. Scribner (AAAS) and Rodney W. Nichols (Rockefeller University).

19-6. Arms Control Verification: Challenges for the 1990s (29 May). Organized by Richard A. Scribner (AAAS) and Sidney Graybeal (System Planning Corporation).


20. International Science and Technology


20-5. International Impacts of Technology (28 May). Organized by Alan L. Porter (Georgia Institute of Technology).


20-7. Scientists and Engineers Abroad (26 May). Organized by Dorothy S. Zinberg (Harvard University) and Albert H. Teich (AAAS).

Join us at the

AAAS Science & Technology Exhibition

Franklin Plaza Exhibit Hall  
26-29 May

Featured exhibitors include:

Academia Book Exhibits  
American Industrial Hygiene Association  
American Society of Mechanical Engineers  
American University Press Services  
Atomic Industrial Forum  
BioSciences Information Service  
Bureau of the Census  
Calorie Control Council  
Conference Book Service  
DIALOG Information Services, Inc.  
Discover Magazine/Time Inc.  
Elsevier Science Publishers  
Encyclopaedia Britannica USA  
IEEE Spectrum Magazine  
Imported Publications, Inc.  
Institute for Scientific Information  
National Diabetes Research Interchange  
National Geographic Society  
New Scientist Magazine  
OMNI Publications International, Ltd.  
The Publishers Book Exhibit  
Publishers’ Showcase  
Sigma Xi, The Scientific Research Society  
U.S. Geological Survey  
Veterans Administration  
Walter Reed Army Medical Center

21. Science and Technology Policy


Advance Registration Form

AAAS Annual Meeting ♦ Philadelphia ♦ 25–30 May 1986

Mail to: AAAS Meetings Office, Dept. R, 1333 H Street, NW, Washington, DC 20005

Please type or print clearly

Name of registrant ________________________________ (Last) ________________________________ (First & initial)

Name of spouse registrant ________________________________ (Last) ________________________________ (First & initial)

Institution/Company ________________________________ (To be printed on badge) ________________________________ (Registrant)

(Mailing address) ________________________________ (Spouse registrant)

(City/State) ________________________________ (Zip code) ________________________________ (Telephone number)

Convention address ________________________________ (Hotel and/or telephone number)

(Where you can be reached)

Check days on which you will attend meeting: ☐ ☐ ☐ ☐ ☐ ☐

☐ Check here if you need special services due to a handicap; we will contact you before the meeting.

Name(s) of new member(s): ________________________________

・ Your registration badge, receipt, and voucher for full Program and Abstracts will be mailed to you in mid-April.

・ Registrations received after 9 May will be held at the Advance Registrants' Desk at the Franklin Plaza Hotel.

・ Refund requests must be made by letter or telegram to the above address before 16 May 1986 and will be honored after the meeting. No refunds are made on cancellations received after this date.

・ Student registration fees apply to full-time undergraduate or graduate students only.

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Advance Registration Fees:

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Hotel Reservation Form

AAAS Annual Meeting ♦ Philadelphia ♦ 25–30 May 1986

Mail to: Philadelphia Convention Bureau, AAAS Housing Dept., 3 Penn Ctr. Plaza, Suite 2020, Philadelphia, PA 19102

Send confirmation to:

Name ________________________________ (Last) ________________________________ (First & initial)

Mailing Address ________________________________ (Street)

(City/State) ________________________________ (Zip code) ________________________________ (Telephone number)

Other occupant(s) of room: ________________________________ (Name) ________________________________ (Name)

Indicate special housing needs due to a handicap: ☐ wheelchair accessible room; other ________________________________

Charge my major credit card (card type): ________________________________

Card No. ______________________________________ Expires ______

Signature ________________________________

Hotel Rates (Add 9%. 6% sales and 3% occupancy tax). Indicate 1st, 2nd, and 3rd choice of hotel; check appropriate box for type of room desired.

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Arrival date ___________________________ ☐ a.m. ☐ p.m.

Departure date ___________________________ ☐ a.m. ☐ p.m.

Be sure to list definite arrival and departure dates and times. Reservations will be held only until 6 p.m. unless accompanied by 1 night's deposit or major credit card guarantee.

・ Reservations must be submitted to the Housing Department (address above) on official form by 2 May 1986. Reservations received after this cut-off date are conditional on space availability.

・ Confirmations will come directly from the hotel. Cancellations must be sent to the Housing Department until cut-off date. Make name and date changes (and cancellations after 2 May) directly with the hotel.

・ Rollaway beds or extra person in room: Franklin Plaza, $10; Hershey, $10; Holiday Inn, $7.

・ Children accommodated free of charge in same room with parents: Franklin Plaza, to age 14; Hershey and Holiday Inn, to age 18.
AAAS Annual Meeting Philadelphia, 25-30 May 1986
ARTHUR HERSCHMAN

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