1989 AAAS Annual Meeting
San Francisco Hilton, 14–19 January

Preliminary Program, Part 1

We’ve done it again! After the roaring success of the Boston Meeting last February, our encore is an even bigger and better Annual Meeting program for San Francisco in ’89.

In fact, the program is so big that we’re presenting the information to you in three separate issues of Science.

This issue presents Part 1 of the preliminary program, a detailed breakdown of our Physical Sciences & Technology lineup. But don’t miss the other issues that detail our agenda for the Life Sciences & Technology (23 September issue) and for the Social Sciences & Science Policy (30 September issue). A brief summary of each follows:

The Physical Sciences & Technology program (described on the following pages) features a six-session treatment of chaos, including dynamical, biological, celestial, and economic systems; an in-depth examination of neural networks and of spatial statistics; an extensive survey of physics (jointly arranged with the American Physical Society [APS] and the American Association of Physics Teachers [AAPT]), with a full 2-day treatment of synchrotron radiation and a two-session treatment of the scanning tunneling electron microscope; a four-session treatment of the frontiers of chemistry, including dynamics, catalysis, inorganic, and bioorganic chemistry; a five-session treatment of ocean processes; a five-session treatment of climate changes, impact, and processes; and much more.

Our program for Life Sciences & Technology will be detailed in the 23 September issue, and will feature seminars on protein folding and on plant molecular biology and genetic engineering, as well as extensive treatments of receptors, developmental biology and gene expression, retroviruses, AIDS, the human genome project, and many aspects of ecology (including the impacts of drought) and agriculture.

Finally, the 30 September issue will bring you full details of our program on Social Science (continued on page 1363).

Plenary Lectures

Saturday, 14 January, 8:30 pm: Keynote Address, Donald Kennedy (Stanford Univ.).


Monday, 16 January, 1:00 pm: Waterman Lecture, Peter Schultz (UC–Berkeley). 1:00 pm: “Plant Molecular Biology and Biotechnology,” Speaker to be announced. 8:30 pm: “Resource Allocations for Science,” Frank Press (National Academy of Sciences).

Tuesday, 17 January, 1:00 pm: Sarton Lecture, “The Politics of the Meter Stick,” John L. Heilbron (UC–Berkeley). 1:00 pm: “Opportunities for Synchrotron Radiation Research,” Arthur Bienenstock (Stanford Synchrotron Radiation Laboratory). 8:30 pm: AAAS President’s Lecture, “From the President of AAAS to the President of the United States,” Walter E. Massey (Univ. of Chicago).


Thursday, 19 January, 1:00 pm: “Superconductivity,” Shoji Tanaka (Univ. of Tokyo). 1:00 pm: “Earthquake Prediction,” Allan G. Lindh (USGS, Menlo Park, CA).

Here’s what you’ll find:

☐ Over 250 sessions: Choose from a full schedule of symposia, seminars, technical sessions, and workshops covering the Physical Sciences & Technology (listed on the following pages), Life Sciences & Technology (23 September issue of Science), and Social Sciences & Science Policy (30 September issue of Science).

☐ Major plenary lectures: Hear 15 world-renowned scientists speaking on a wide range of topics (this page).

☐ Exhibition: Learn about new products and services in exhibits by 100 publishers, software manufacturers, information services, and scientific societies.

☐ Poster sessions: Exchange ideas with interested colleagues in a full series of poster sessions. To participate, see “Call for Contributed Papers” on page 1363.

☐ Science Film Festival: See some 50 science films for students and professionals.

☐ Two meetings for the price of one: As a AAAS Annual Meeting registrant, you will also have full access to all sessions of the concurrent Joint Winter Meeting of the American Association of Physics Teachers (AAPT) and the American Physical Society (APS).

☐ Discounts on travel: United Airlines and Delta Air Lines offer special discount fares to the Annual Meeting in San Francisco (and optionally on to Honolulu) for travel during 10–26 January 1989. The discounts are available only through the airlines’ convention reservation desks. For details call one of these numbers and give the appropriate AAAS convention code:
United: US and Canada: 800-521-4041
(HI & AK: 800-722-5243)
AAAS Code: 9017D

Delta: US (incl. HI, AK, PR): 800-241-6760
(Canada, call Delta locally)
AAAS Code: R0030

☐ Savings on advance registration: The advance registration deadline is 16 December. To obtain the discounted advance registration rate and the low hotel convention rates, use the forms on page 1364.
Physical Sciences & Technology*

Frontiers; Chaos

Frontiers of the Physical Sciences: 1989 (2 sessions, 1/19). Optical astronomy observations; aviation weather hazards; material dating.

Chaos and Dynamical Systems (1/15). Dynamics; knot theory; fractal basin boundaries.

Chaos in Biological Systems: Physiology and Medicine (1/15). Neural-biological systems; structure and function of polypeptides and proteins.

Chaos (4 sessions, 1/16–1/17). Quantized systems; turbulence; global affairs; celestial systems.

Mathematics, Statistics & Computing

Statistical Description and Modeling of Spatial Variability: Theory and Applications (3 sessions, 1/15–1/16). Interpolation; geostatistics; agroecosystems; geographic information systems.

Logic Today (1/18). Nonstandard mathematics; computer programming; semantics.

The Next Generation of Neural Nets (1/18). Modularity; computational learning theory.

Computational Neural Networks for Perception and Behavior (1/19). Neural mapping; mapping sensory-motor coordination; visual-acoustic fusion.

Psychobiological Models of Parallel Processing in the Perception of Time, Space, and Number (1/19). Mathematical and information-processing models; animal cognition.

Physics


The Role of Precision Measurements in Physics (1/15). Single ion; neutral atoms; parity violation; hydrogen.

Synchrotron Radiation (4 sessions, 1/16–1/17). Accelerator physics facilities; x-ray diffraction and absorption studies; medical imaging.

Scanning Tunneling Microscopy (2 sessions, 1/17). Metals; three-dimensional imaging; semiconductor interfaces.

Monte Carlo Methods and Statistical Mechanics (1/17). Simulated annealing; quantum dynamics; stochastic relaxation; field theories.

Physics of the Atmosphere (1/18). Lightning; optical phenomena; clouds; precipitation.

New Perspectives in High Temperature Superconductivity (1/19). Chemistry and physics of metallic oxides.

Feynman Memorial (2 sessions, 1/18). Arranged by APS and AAPT.

Inertial Confinement Fusion: Stellar Conditions in the Laboratory (1/19). Lasers; ion beams.

Chemistry

Frontiers in Chemistry (4 sessions, 1/16–1/17). Chemical dynamics; organometallic chemistry; inorganic and bioorganic chemistry.

Astronomy; Planetary Science

Pulsars: Young and Old (1/16). Binary and millisecond pulsars.

The Farthest Things in the Universe (1/16). Quasars; background radiation; distant galaxies.

The Path of Life: From the Big Bang to the Big Brain (2 sessions, 1/17). Nucleosynthesis; extraterrestrial organic matter; terrestrial life; fossil records.

Apollo Plus 20: The New Moon, the Earth, and the Universe (1/19). Geology; time; cosmic records; moon’s origin.

Geology; Oceanography

The Circum-Pacific Map Project: A Success Story of International Cooperation (1/17). Energy resources; tectonics; computer-based graphics.

The Nature of Large Earthquakes: Cooperative Research Between U.S. and Chilean Scientists (1/18). Seismic potential; high resolution mapping.

The Arctic: A New Key to World Climate and Resources (2 sessions, 1/19). Untapped natural resources; atmosphere-ocean-ice dynamics.

The Comparative Oceanography of Pacific Eastern Boundary Currents (1/17). Benthic and pelagic ecology; Humboldt current system; circulation and upwelling.

*The AAAS Annual Meeting Preliminary Program is being presented in three separate issues of Science:

1—Physical Sciences & Technology (this issue)

2—Life Sciences & Technology (23 September)

3—Social Sciences & Science Policy (30 September)
Mechanisms of Biological/Physical Interactions in Ocean Processes (4 sessions, 1/18-1/19). Turbulence; microscale and mesoscale linkages; food chain; remote sensing; in situ observations; models.

Atmospheric Science; Climate

Potential Impacts of Climate Change in California (1/15). Ozone; agriculture; water management.

Effects of Global Change on Vegetation and Crops (1/15). Elevated CO2; crop production; modelling global vegetation.

Policy Implications of Climate Change (1/16). Impact mitigation, prevention, and adaptation.

Climate Change and U.S. Water Resources (1/16). Irrigated agriculture; urban water systems.


Engineering & Technology

New Technology for People with Disabilities (1/16). Use of electrical brain signals; robotic hand; verbal communication aid.


The New Hypersonics: Can an Airplane Fly to Orbit? (2 sessions, 1/19). Technical difficulties; aerodynamics and propulsion; applications.

Popular Science

Science for the Naked Eye; or, The Physics of Everyday Experience, XVI (2 sessions, 1/15).

Chemistry Is Fun! (1/18). Interactive exhibits; pre-high-school chemistry.

The Science and Technology of Winemaking in California (1/18). Sensory perception and chemistry of taste; climate and soil; economics; fermentation technology.

(continued from page 1361)

ces & Science Policy, which features an in-depth treatment of risk, issues in arms control, competitiveness, and neurobehavior, along with psychology, anthropology, sociology, economics, and history and philosophy of science, including issues related to ethics and values in science, outreach to women and minorities, and many facets of problems in science and technology education.

This blockbuster of a meeting, with over 250 sessions, features the cutting edge of science in all of its aspects. Register now and reap savings, and while you're at it, take advantage of this opportunity to present your poster-session paper on one of these many topics.

Come to San Francisco, home of the cable car and the Golden Gate Bridge, and of Fisherman's Wharf and the Cannery; a marvelous city for walking about and just looking, for sampling a host of different cuisines and fine wines, and for enjoying the mild California climate in mid-January. Come to San Francisco and bask in its marvelous ambience while experiencing the intellectual ferment that is the AAAS Annual Meeting. — Arthur Herschman

Call for Contributed Papers

The privilege of submitting a poster paper is open only to AAAS members and fellows, but they need not be authors of the papers they endorse. Presenters of papers must be registered for the Meeting (see registration form, overleaf) and must submit abstracts prior to the deadline. Each accepted paper will be assigned a 4' x 6' bulletin board for 1/2 hours. Abstracts prepared in the correct format and received by AAAS before the deadline will be published in a book supplied to all registrants.

Topics: Papers should relate to Meeting session topics (see this issue and the 23 and 30 September issues of Science). We particularly welcome student papers, which are eligible for a series of prizes for best papers, to be awarded by AAAS and its Pacific Division. (Indicate with submission whether paper is to be judged.)

Abstracts: Copy must be typed on white paper to fit within a 5" square. Use only a typewriter or letter-quality printer. Indent, space, underline, and capitalize as in the example; do not double-space the body of the text. Use reproducible black ink for all hand-lettering. Do not box abstract or cut and paste it onto another piece of paper.

Submissions: Above the 5" square, type the name of the broad discipline that encompasses the subject matter and provide 3 index words to describe the area within the discipline. Below, type the name, affiliation, and signature of the member or fellow endorsing the paper, and the full name, address, and phone number of the person to be contacted regarding scheduling. Send original plus 1 copy of the abstract no later than 1 November 1988 to:

Contributed Papers, AAAS Meetings Office 1333 H Street, NW, Washington, DC 20005.

Deadline for Poster Session Abstracts: 1 November 1988
Advance Registration Form
AAAS Annual Meeting ♦ San Francisco
14–19 January 1989

Name of registrant
(First & initial) (Last)

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

Institution/Company
Registrant
(To be printed on badge)

Mailing address
(Spouse registrant)

Convention address
(Hotel and/or telephone number)

Check days on which you will attend the Meeting: Sat Sun Mon Tue Wed Thu

☐ Check here if you need special services due to a handicap. We will contact you before the Meeting.

16 December deadline: For registrations received by this date, we will mail registration badge, receipt, preliminary program, and voucher for the full program and abstracts. For registrations received after this date, we will hold all materials at the Advance Registrants Desk at the San Francisco Hilton. Registrations postmarked after 16 December will be charged at the onsite rate. Refund requests must be made by letter or telegram to the address below by 5 January and will be honored after the Meeting. No refunds will be made for cancellations received after 5 January. Fees: ☐ Nonmember fee includes introductory 6-month membership with 25 issues of Science. ☐ Student rates apply to full-time undergraduate and graduate students and retirees. ☐ Seminar space is limited; late registrations cannot be guaranteed.

Mail to: AAAS, Annual Meeting Registration, Room 830
1333 H Street, NW, Washington, DC 20005

AAAS Hotel Reservation Form
AAAS Annual Meeting ♦ San Francisco
14–19 January 1989

Send confirmation to:

Name
(First & initial) (Last)

Mailing address
(Street)

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 ____________________________

Reservations must be sent to the San Francisco Hilton Hotel on this official form by 16 December 1988.
Reservations received after this cut-off date are conditional on space availability.
If the room rate requested is no longer available, the next available higher rate will be confirmed.
Reservation changes and cancellations must be sent directly to the hotel.
Rollaway beds or additional adult in room, $20.
Children stay free of charge in same room with parents if no extra bed is required.

San Francisco Hilton Hotel Rates

Check appropriate box for type of room desired. Add 11% tax to rates shown.

<table>
<thead>
<tr>
<th>Choice</th>
<th>Single</th>
<th>Double</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>$89</td>
<td>$105</td>
</tr>
<tr>
<td>Superior</td>
<td>$99</td>
<td>$115</td>
</tr>
<tr>
<td>Deluxe</td>
<td>$109</td>
<td>$125</td>
</tr>
<tr>
<td>Suites</td>
<td>$200 &amp; up</td>
<td></td>
</tr>
</tbody>
</table>

Arrival date ________ Time ________

Departure date ________ Time ________

Please list definite arrival and departure dates and times. If you will arrive after 6:00 pm, this reservation must be accompanied by a deposit (room rate for one night plus tax); check or major credit card accepted.

Mail to: AAAS Reservations
San Francisco Hilton
1 Hilton Square
San Francisco, CA 94102-2189