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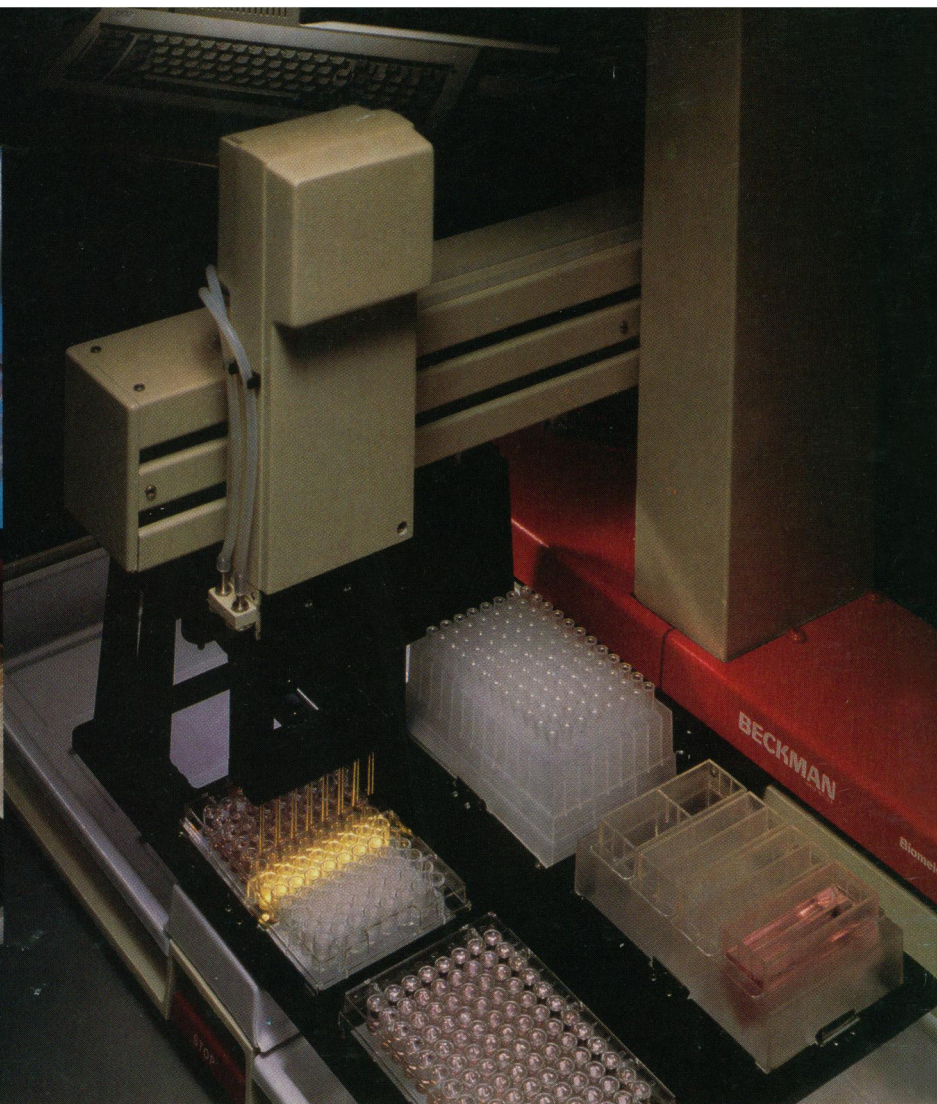
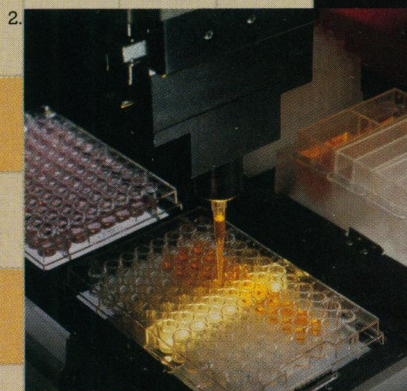
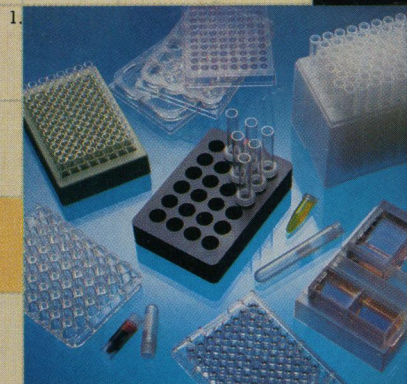
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COVER Chicago, Illinois, site of AAAS Annual Meeting, 14 to 18 February 1987. John David Mooney's "Light Space 77," a seven-night performance sculpture, consisted of 16 carbon-arc searchlights, whose precise, timed movements through their radial and azimuth positions were executed according to visual scores written by the artist. These 6-mile-high beams, emanating both from barges and sites along 8 miles of Chicago's shoreline, created an ephemeral counterpoint to the city's skyscrapers as the first environmental public sculpture ever commissioned by the City of Chicago from a living artist. See page 1429. [© Mooney 1977; photograph by Barbara Jones, Chicago, IL]

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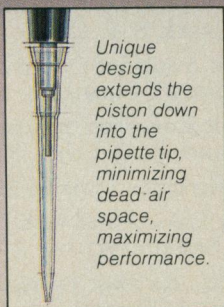
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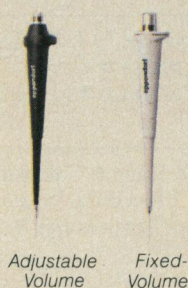
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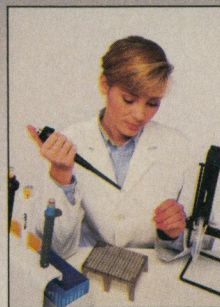


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This Week in **SCIENCE**

Malaria vaccines

HUNDREDS of millions of people in tropical countries have malaria, a parasitic disease transmitted from person to person by mosquitoes (page 1349). Insecticides have helped in controlling mosquitoes and chemotherapies have been useful for treating malaria, but effective vaccines are considered essential for the eventual control and eradication of the disease. In their review of the status of malaria vaccine development, Miller *et al.* point out that the success of a vaccine will depend not only on identifying appropriate sites on the parasite or infected host cells that will induce antibody formation, but also in finding an effective delivery system (adjuvant) that will make such determinants immunogenic. (Adjuvants in use for animal experiments cannot be used in human vaccines.) Vaccines containing a repeating subunit of the sporozoite stage of the parasite have been made with genetic engineering and peptide synthesis techniques and are currently being tested in humans. Other vaccines are in production that would block transmission of the parasite by eliciting antiparasite antibodies that would be carried along into the mosquito with the blood meal where they could react against developing parasites. As additional details are known about the life cycle of the parasite and about the host-parasite relationship, the chances continue to improve for developing effective antimalaria vaccines.

Primate social relationships

SOCIAL relationships among nonhuman primates often resemble those of humans: mothers respond most strongly to the (previously recorded) screams of their own offspring; opponents kiss after fighting and thereafter are reconciled (page 1361). Cheney *et al.* review field observations and laboratory studies of social relationships among nonhuman primates; they assess the functional significance of

these behaviors, whether fitness or reproductive success may be affected by them, how social relationships develop among different types of primates, and what cognitive processes underlie these interactions. Anthropomorphic explanations for nonhuman primate behaviors are obviated by cautious interpretation of observed behaviors. Research goals are suggested that will further the understanding of primate behavioral patterns and will help in differentiating or equating features of the behaviors of nonhuman and human primates.

Gene therapy for infertile mice

NORMALLY infertile hypogonadal mice are able to reach sexual maturity and produce progeny as a result of gene therapy (pages 1366 and 1372). The successful gene transfer experiments are described by Mason *et al.* who identified the cause of the hypogonadal condition—a deletion in the gonadotropin-releasing hormone (GnRH) gene. The normal GnRH gene codes for a peptide hormone that is synthesized in the hypothalamus. GnRH is released in pulses and induces the release of other hormones that are responsible for the development and functioning of mammalian sexual organs. Both male and female mice that had the genetic defect were restored to normal by gene therapy: females had estrous cycles and could conceive and carry healthy litters to term; males engaged in normal mating behavior and were able to father offspring. The gene was expressed in the appropriate neurons in the brain.

Chemical state of Venus' surface

THE surface of Venus appears to be partially oxidized (page 1379). Pieters *et al.* reprocessed data obtained by Venera spacecraft, detecting from the original spectral patterns the effects produced by the planet's dense atmosphere. The resulting

patterns were then compared with patterns obtained for oxidized ferric compounds commonly found in basaltic materials. Reflectance measurements made in the visible region of the spectrum would allow for both ferric (oxidized) and ferrous (relatively reduced) iron on the planet's basaltic surface; measurements in the near infrared region showed that the surface of Venus is in a relatively oxidized chemical state, with a ferric mineral signature. These surface rock and soil reflectance measurements provide data supporting the theory that at some time in its past Venus had an ocean. Today there is little water detectable on the planet; if the water on Venus evaporated, its hydrogen component may have escaped into the atmosphere while its oxygen combined with the planet's rocks.

Runaway greenhouse unlikely

IN the earth's past, after the major accretion had taken place, greenhouse effects occurred, but it is unlikely that they were ever so extensive that the earth's surface water at any time completely evaporated (page 1383). This contrasts with what may have taken place on Venus to boil away the ocean that may once have been on that planet. Kasting and Ackerman describe a climate model in which they test the possibility of a "runaway greenhouse effect" whereby the entrance of excessive amounts of carbon dioxide into the earth's atmosphere would produce an attendant rise in the earth's temperature and a shift of all of the earth's water into steam or clouds. The model is used to assess how increases in carbon dioxide pressure would affect the earth's surface temperature, its light reflectance, and the partitioning of water between the lower and upper atmosphere, the oceans, and the soil. The calculations indicate that it is unlikely that ancient oceans ever completely boiled away or that contemporary ones ever will, even if a huge excess of carbon dioxide (above current values) were present in the atmosphere.

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Scienceless to Homeless

America's homeless crisis began in 1963 when deinstitutionalization became law through enactment of the Mental Retardation Facilities and Community Mental Health Centers Act. Hundreds of thousands of disabled patients with schizophrenia, affective disorders, alcoholism, and severe personality disorders were released from large institutions to the streets. Once deinstitutionalized, these individuals created their own communities of isolation, alienation, hopelessness, and despair. By law, the former residents of structured institutions became the homeless.

This situation occurred because a social welfare movement, based on virtually no scientifically gathered data, became public policy. Remarkably, only one controlled pilot study performed in England was available at the time the law was passed. The country undertook a noble, but unfeasible, and ultimately unjustifiable project because the essential research had not been done. Once the decision to deinstitutionalize was in place, a sense of urgency prevailed. Patients became caught on colliding tectonic plates, pushed and stretched in all directions by psychiatrists, unions, nurses, psychologists, and social workers. The legal system, legislators, and the media all thought they knew—or at least gave the impression that they knew—what was wrong with our mental health system. Few, however, were able or willing to provide the requisite care.

There is no reason to believe that our current concerns for the homeless, and our inadequately conceived solutions, will not create new problems. Again, inexplicably, there are essentially no controlled studies to show us how to handle the problem.

Designing well-controlled studies for evaluating community programs is difficult. Such studies do not fit into a traditional paradigm. It was not until last year that the first approximation of a controlled study of widespread community care was published.* Schizophrenic patients, after discharge from psychiatric hospitals, were followed in Vancouver, British Columbia, and Portland, Oregon, cities with decidedly different aftercare profiles: Vancouver has many aftercare facilities; Portland's are fewer, and they are less well staffed and coordinated. Schizophrenic patients in Vancouver had fewer relapses, a greater sense of well-being, and a higher degree of employment than those in Portland. Although there are problems with the study—it examined fewer than 60 people and those from Portland may have been more severely ill—it shows that such studies can be performed.

We must ameliorate the miseries of our homeless mentally ill. But in doing so we must not make the situation worse. Today, it is inconceivable that a new medication would be introduced before large-scale clinical trials were conducted among diverse patient populations. Furthermore, once the drug became widely available we would continue to monitor its effectiveness and potential toxicity. If the new medication turned out to be less effective or more toxic than originally thought, it would be removed from the market, or at least its usage would be narrowed. Controlled clinical trials of medications limit the risk to a few.

Why do we not have similar criteria for our social experiments? In the case of deinstitutionalization, no large-scale efficacy trials were performed. Toxicity and adverse consequences were not monitored. We are only now beginning to identify who the homeless mentally ill are. Well-designed and replicated controlled experiments are necessary. Without such studies we will repeat our mistakes. And we are certain to cause new, unforeseeable hardships. Before we prematurely institute new public policies, we should collect the necessary data to rationally initiate social welfare system changes. By calling for careful studies, we do not advocate inaction until all the answers are known; we must deal with today's difficulties today. But unless we invest time, energy, money, and our good minds toward a solution, today's problem will remain for tomorrow.—RICHARD JED WYATT, *Chief, Neuropsychiatry Branch, National Institute of Mental Health, and Intramural Research Program at St. Elizabeths Hospital, Washington, DC 20032*; EVAN G. DERENZO, *director of admissions, Collingswood Nursing Center, Rockville, MD 20850*

*M. Beiser, J. H. Shore, R. Peters, E. Tatum, *Am. J. Psychiatry* **142**, 1047 (1985).

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REFERENCES

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Peace and Virtue

A few comments are in order concerning Charles C. Price's letter (24 Oct., p. 411), which promoted participation in the "First International Peace Week of Scientists." Im-

plicit in this letter and underlying the staging of this event is the idea that peace, in and of itself, is to be desired, and that militarization, termed the "arms race," is to be deplored. I would like to dispute this.

The dictionary tells us that peace is the state characterized by harmony, freedom from discord, absence of mental conflict, or that condition attained at the conclusion of a war. We might surmise that the peace is far more pleasant for the victor of the war than for the defeated. In this case, peace is a desirable condition for those with the upper hand.

Several specific examples of the undesirability of peace are apparent. For instance, a corpse can be said to be in a state of peace. Also, slaves, be they modern or historical, experience many of the characteristics of a peaceful existence. Perhaps the Union of Concerned Scientists is lobbying for increased numbers of slaves and corpses. In the late 1930's, as Nazi Germany was swallowing up portions of Europe, many Western leaders argued that appeasing Hitler would preserve the peace.

Peace is only one of a gamut of virtues; in many cases, one cannot be favored without adversely affecting the others. There is one

virtue that is cherished by many living in democratic societies but is often ignored by promoters of peace, and that is freedom. In a world in which there are many who would squelch that freedom, it may be necessary to fight to protect it. For a society to abandon the option of war, be it waged with muskets or MIRV's, is to invite attack by evil men, of which, sadly, there is presently no shortage.

Price's letter is, in essence, an advertisement for an event espousing a particular political point of view. Political advertisements should not appear in the Letters section of *Science*.

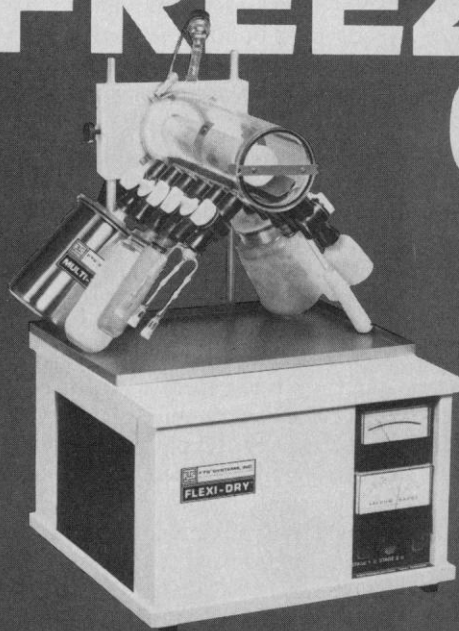
BRADLEY T. WERNER

Division of Physics, Mathematics and
Astronomy, California Institute of Technology,
Pasadena, CA 91125

Erratum: In the article "R&D budgets: Congress leaves a parting gift" (News & Comment, 31 Oct., p. 536), the 1987 appropriation for the National Aeronautics and Space Administration was incorrect. Total funding for the agency is \$10.4 billion, not \$7.95 billion, as stated. The budget includes money to cover construction of a new space orbiter and shuttle operations. Research and development funding stands at \$3.1 billion, as reported.

Erratum: The listing in the 3 October Books Received (p. 94) for *Reinventing Technology* (p. 97) was incorrectly printed as *Reinvesting Technology*.

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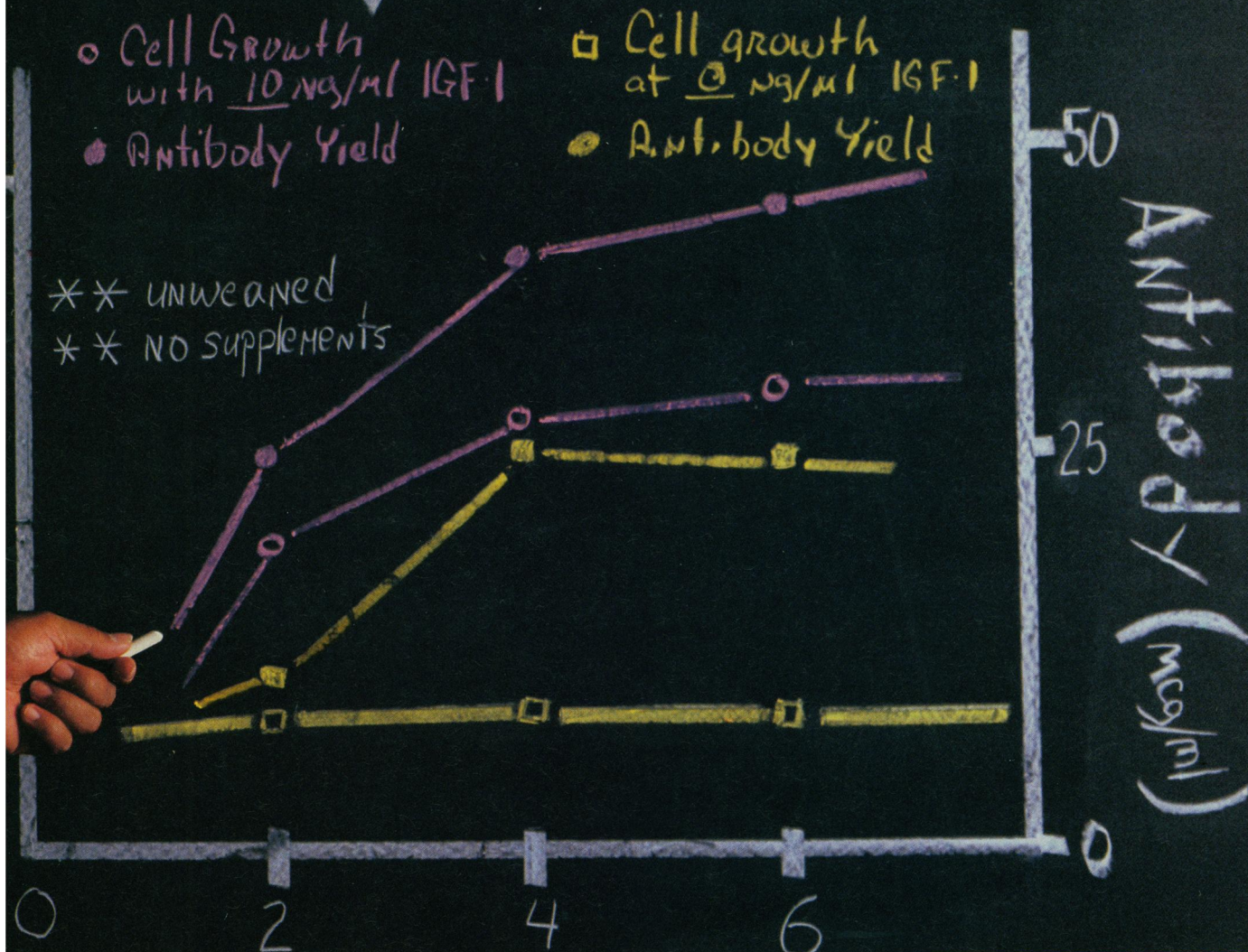
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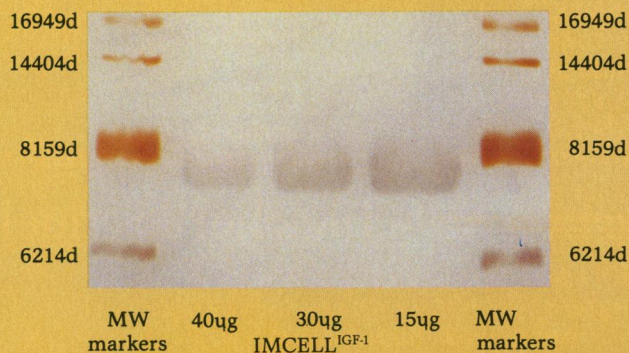
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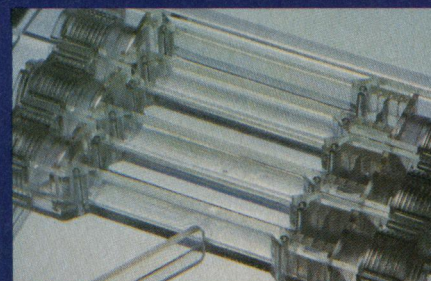
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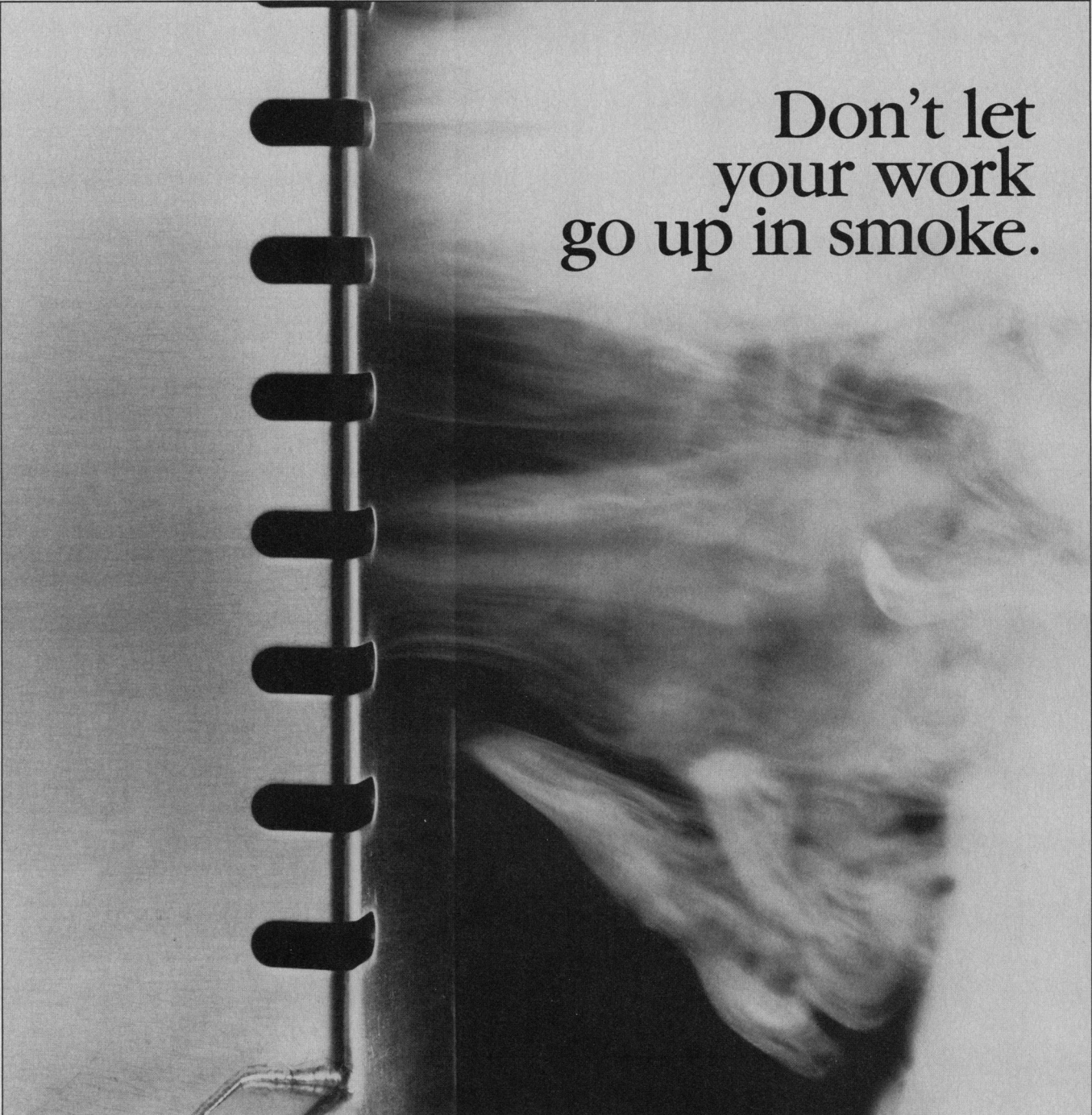
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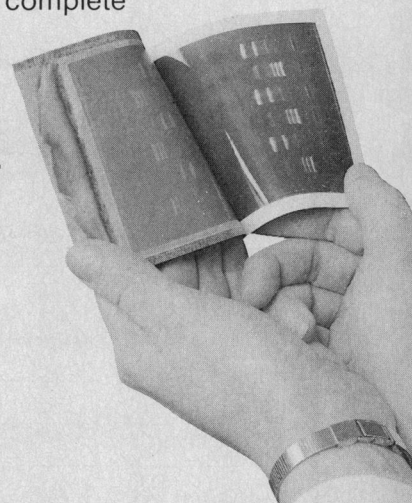
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HYBRIDOMA: Zenon Steplewski, Hilary Koprowski, Joseph Davie

KEYNOTE ADDRESS (Sunday p.m.) Stephen Goff, Columbia University, Alexander Rich, M.I.T.

ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS)

Chairman: Erling Norrby, Karolinska Institutet, Stockholm, Sweden

(Monday a.m.)

IMMUNOPATHOPHYSIOLOGY OF AIDS

Luc Montagnier, Paris

HTLV-III AND OTHER FACTORS IN THE ORIGIN OF AIDS AND ASSOCIATED MALIGNANCIES

Robert C. Gallo, Bethesda

IMMUNOLOGIC AND MOLECULAR FEATURES OF HIV INFECTION

Jay A. Levy, San Francisco

MOLECULAR BIOLOGY OF IMMUNOSUPPRESSIVE RETROVIRUS

Simon Wain-Hobson, Paris

DEFINING THE VIRAL GENES FOR HTLV-III REPLICATION AND CYTOPATHOGENICITY

Flossie Wong-Staal, Bethesda

(Monday p.m.)

MOLECULAR BIOLOGY OF THE AIDS VIRUS

William Haseltine, Boston

RELATIVE IMMUNOGENICITY OF HTLV-III, HTLV-IV, AND STLV-III PROTEINS

Myron Essex, Boston

ENVELOPE PROPERTIES OF HIV

Robin Weiss, London

TARGETS FOR IMMUNE ATTACK IN RETRO VIRUSES ASSOCIATED WITH AIDS

Dani P. Bolognesi, Durham

USE OF VACCINIA VECTORS TO STUDY EXPRESSION AND IMMUNOGENICITY OF RETROVIRAL PROTEINS

Bernard Moss, Bethesda

DNA SESSIONS

CHROMATIN (Monday p.m.)

Chairman, Gary Felsenfeld

TRANSCRIPTION (Tuesday a.m.)

Chairman, George Khoury

INTRACELLULAR PROTEIN TARGETING (Tuesday p.m.)

Chairman, Harvey Lodish

NEUROBIOLOGY (Wednesday a.m.)

Chairman, James L. Roberts

DEVELOPMENTAL BIOLOGY (Wednesday p.m.)

Chairman, Peter Grüss

HYBRIDOMA SESSIONS

TRANSGENIC MICE AS TOOL IN IMMUNOLOGY (Tuesday a.m.)

Chairman, Davor Solter

ANTI-IDIOTYPE VACCINES (Tuesday p.m.)

Chairman, J. Donald Capra

THE USE OF HYBRIDOMAS IN DETERMINING CYTOKINE STRUCTURES AND FUNCTIONS (Wednesday a.m.)

Chairman, Robert Schreiber

ANTI-CARBOHYDRATE MAB'S IN THE STUDY OF GLYCOLIPID-MEDIATED CELLULAR EFFECTS (Wednesday a.m.)

Chairman, Jan Thuring

SUMMARY

Chairman, Joseph Davie

Working Group Meetings will meet in closed sessions. The consensus reached by working groups will be presented to the whole Congress.

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Chairman, Michael Mastrangelo

IMMUNODIAGNOSIS

Chairman, Edgar Haber

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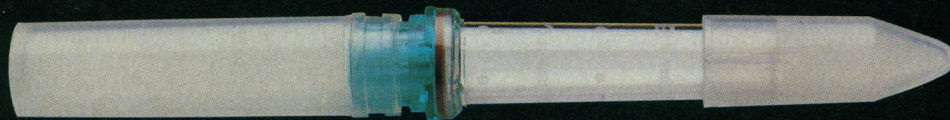
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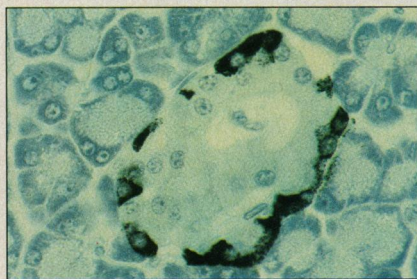
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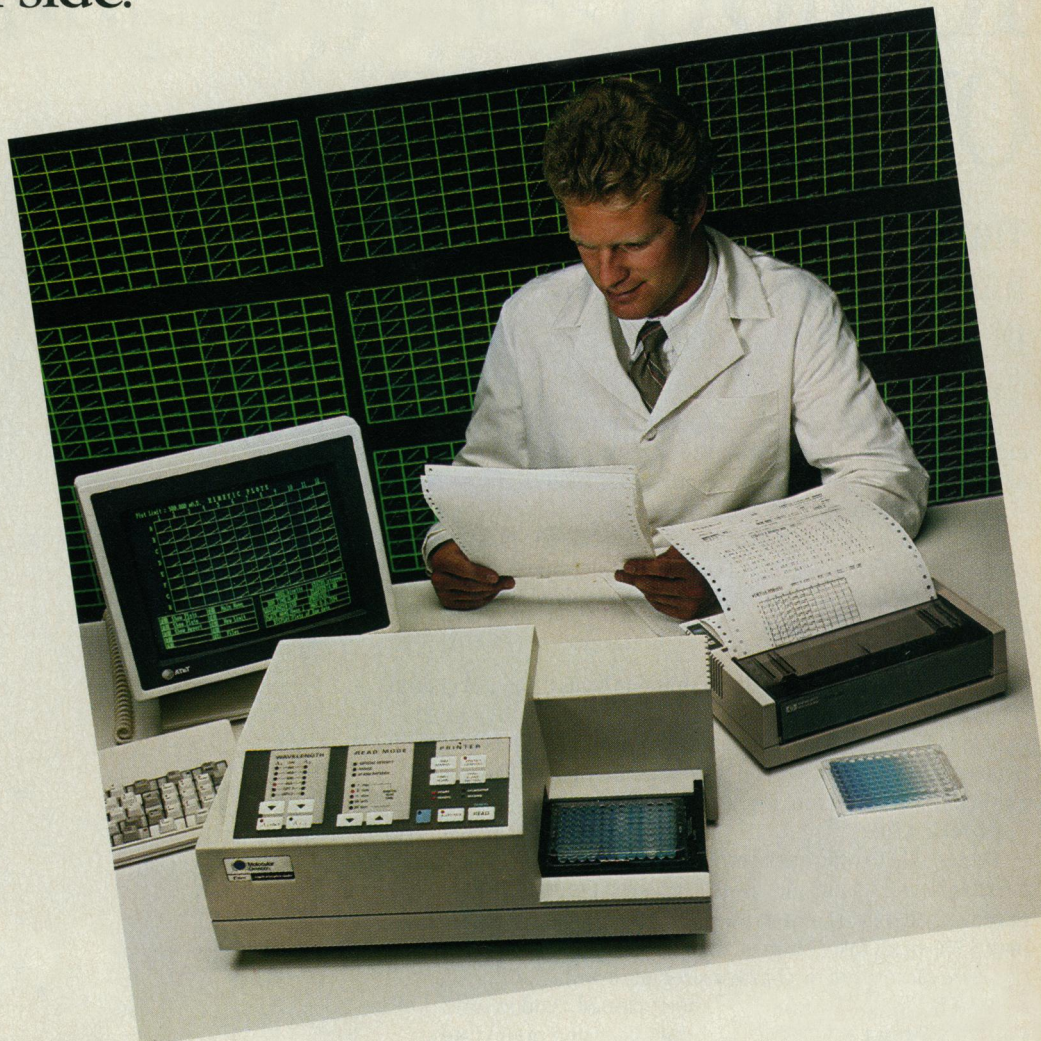
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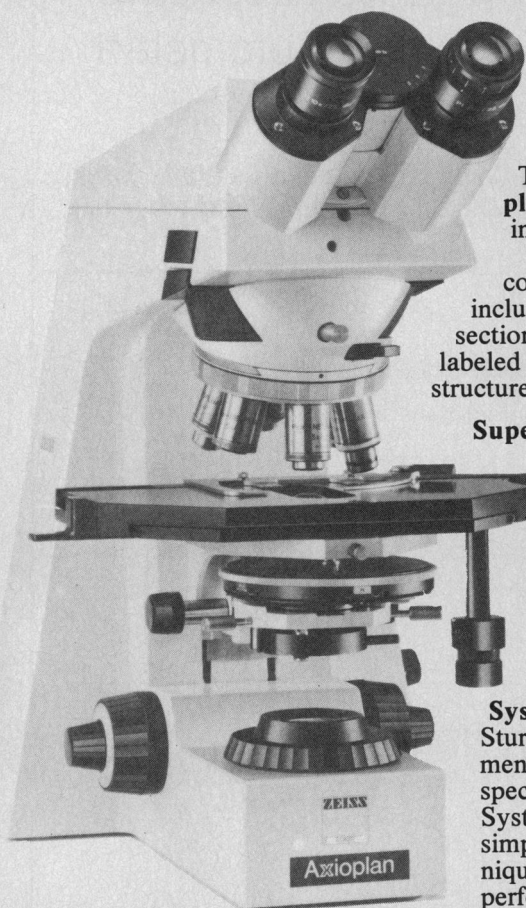
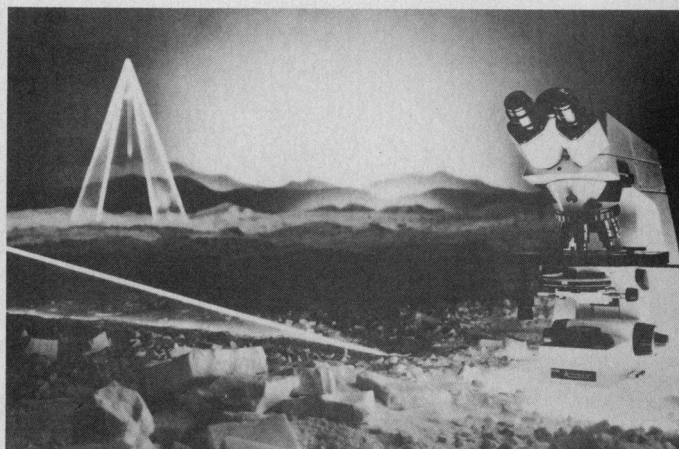
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Anyone wishing to submit an abstract for presentation may contact Congress Chairman Gerald L. Hawk, PhD, Zymark Corporation, Zymark Center, Hopkinton, MA 01748 (617) 435-9501. (Deadline December 1st).

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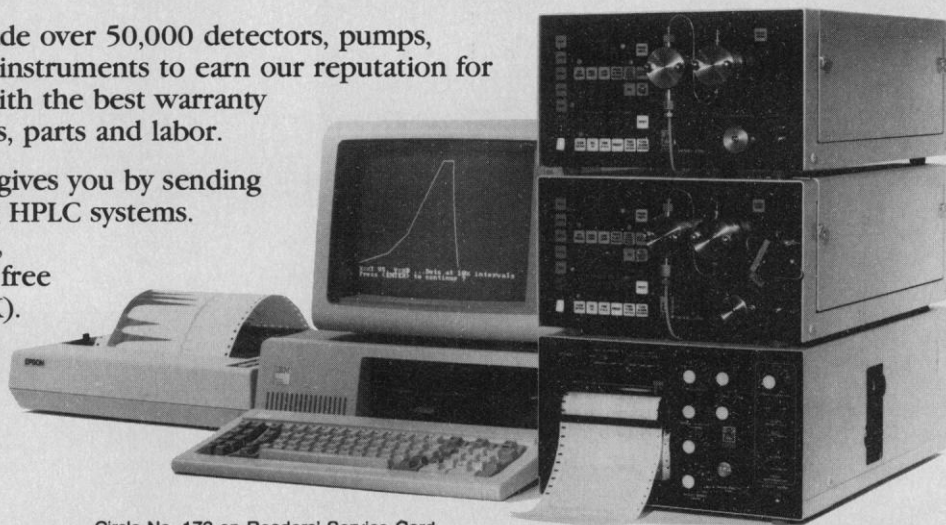
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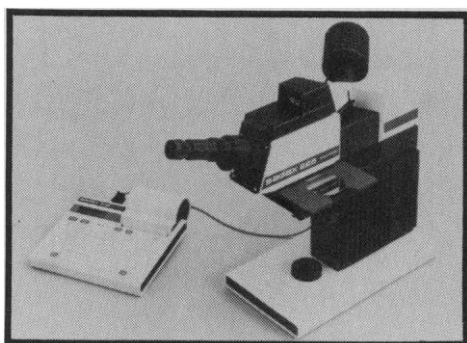
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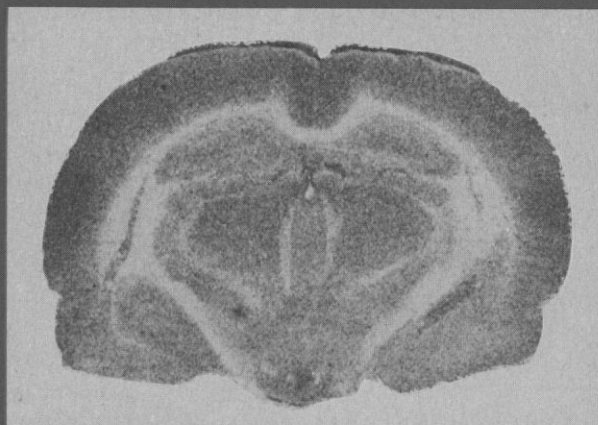
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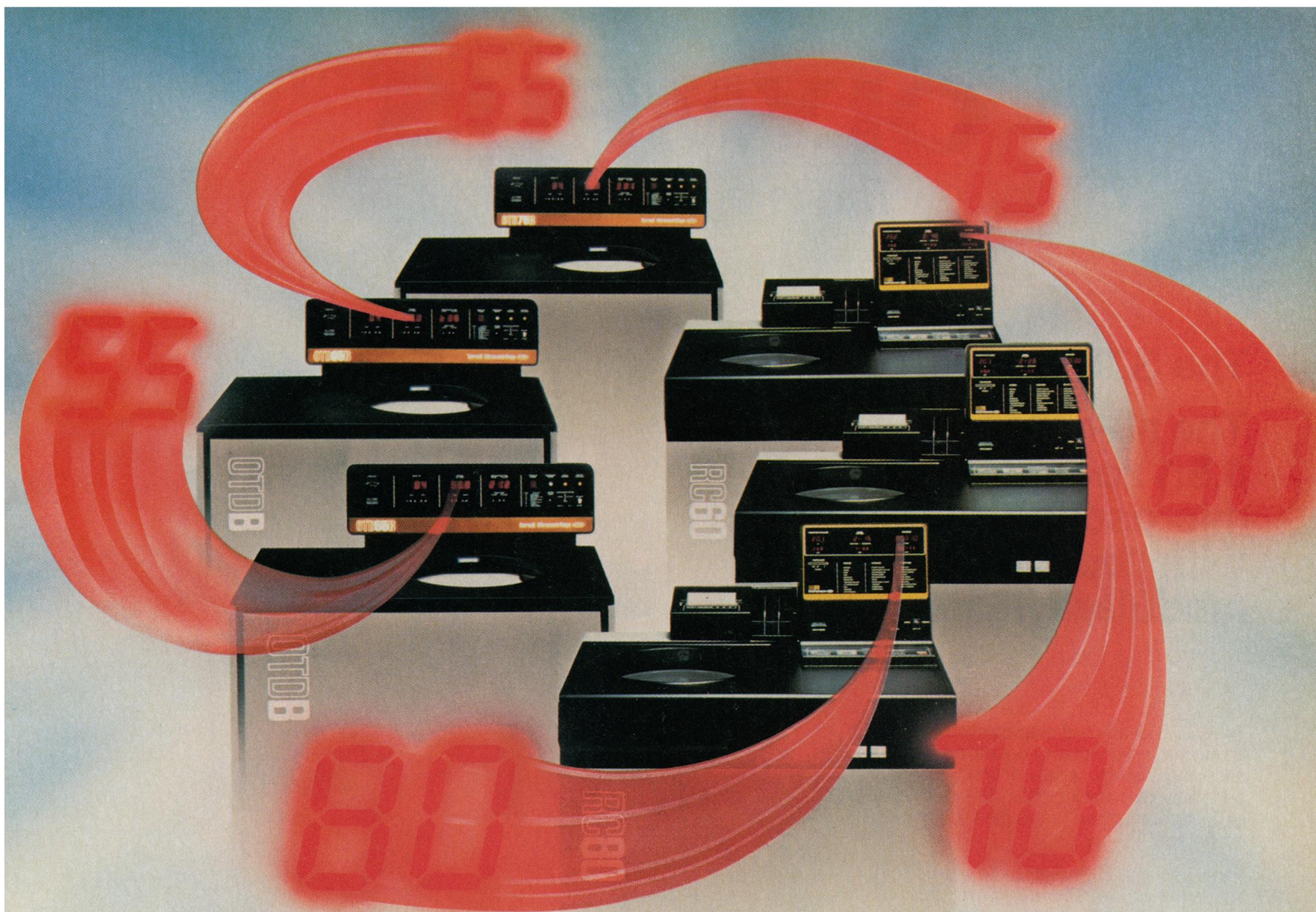
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These symposia are free, but attendance is limited and advance registration is required. To reserve a place for yourself and your colleagues at one of these symposia, please telephone 415/570-6667 or 800/874-9868 (in California, 800/831-3582), extension 8836.

TOPICS TO BE COVERED WILL INCLUDE:

Non-Radiolabeled Dideoxy (Sanger) DNA Sequencing
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Report on Mutagenesis Studies of Synthetic DNA
Hydrogen-Phosphonate Chemistry Update
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LOCATIONS and DATES

San Diego, California	Monday, January 19, 1987
Los Angeles, California	Wednesday, January 21, 1987
Seattle, Washington	Friday, January 23, 1987
Houston, Texas	Wednesday, February 4, 1987
Raleigh-Durham, North Carolina	Friday, February 6, 1987
Miami, Florida (Held to coincide with the Miami Winter Symposium)	Sunday, February 8, 1987
Chicago, Illinois	Monday, February 23, 1987
Ann Arbor, Michigan	Wednesday, February 25, 1987
St. Louis, Missouri	Friday, February 27, 1987
San Francisco, California (Held to coincide with the DNA/Hybridoma Congresses)	Thursday, March 5, 1987
Boston, Massachusetts	Tuesday, March 24, 1987
New York/New Jersey	Thursday, March 26, 1987
Washington D.C. (Held to coincide with FASEB 87 Show)	Sunday, March 29, 1987

Each symposium will be from 9:00 a.m. until 3:00 p.m., with a *DNA Synthesizer users meeting* to follow. In addition, an Applied Biosystems DNA Sequencer, DNA Synthesizer and DNA Extractor will be demon-

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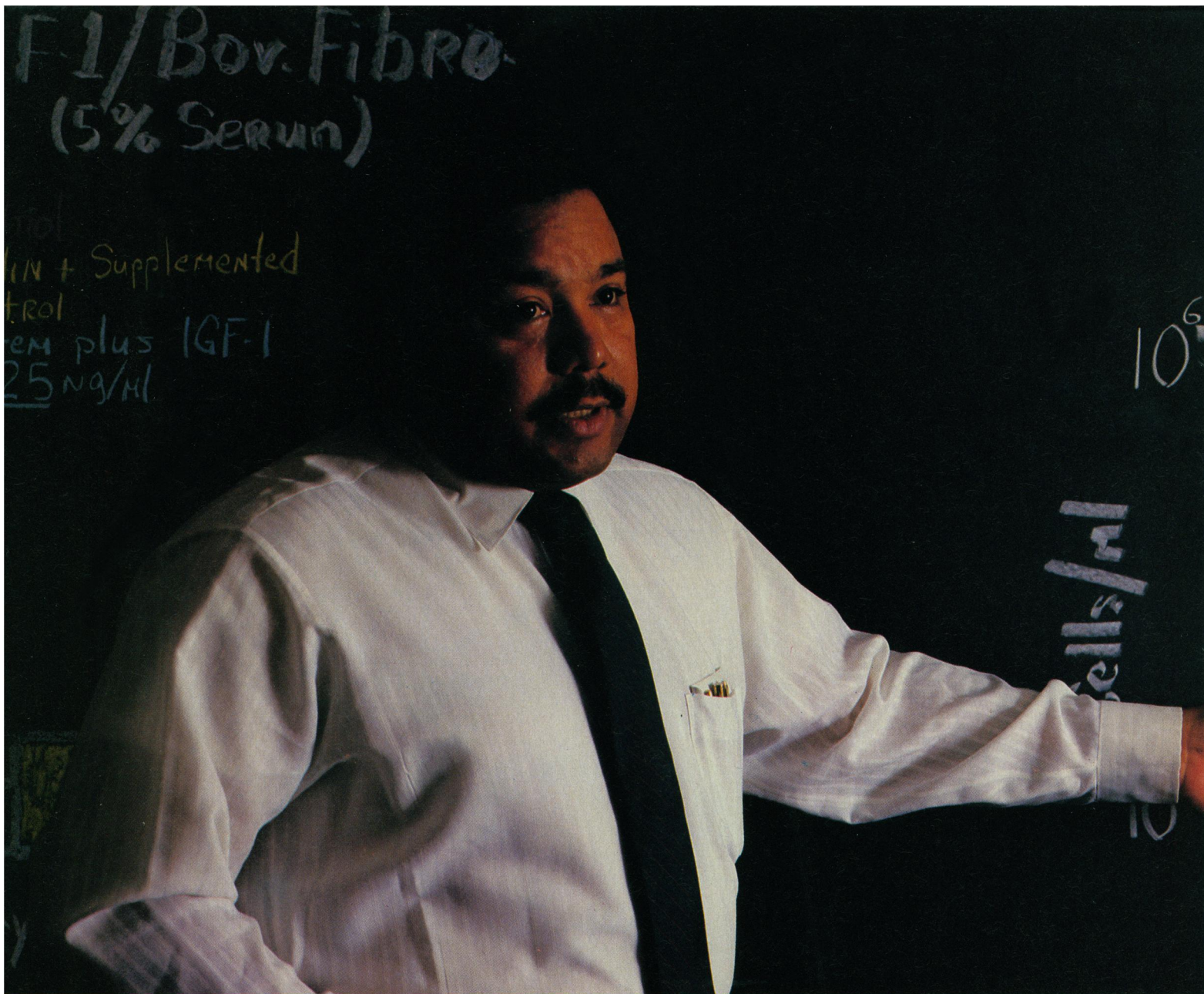
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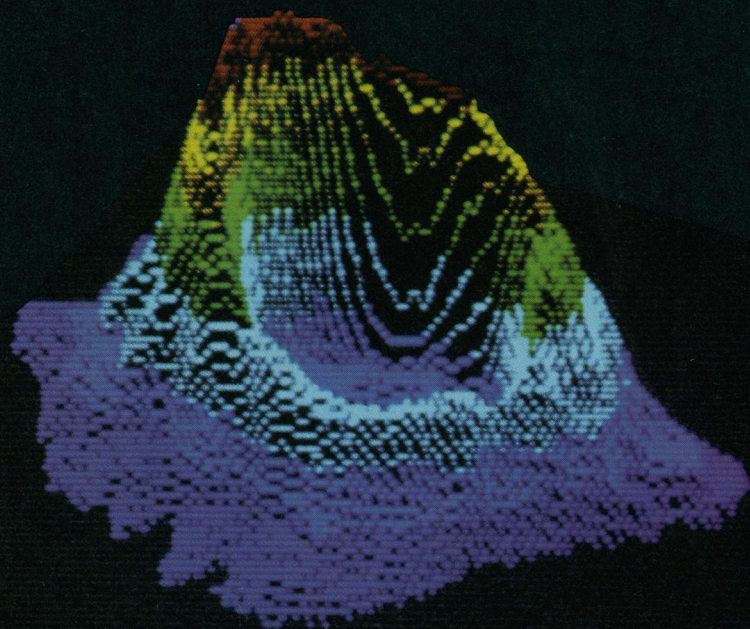
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Turku, Finland / June 10-12

Scientific Organization: M. Parvinen (SF)

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Modena, Italy / August 31 - September 4

Scientific Organization: G.P. Trentini (I), A. Oksche (D) and P. Pèvet (F)

Cell-to-Cell Communication in Endocrinology

Florence, Italy / October 8-9

Scientific Organization: L. Martini (I), M. Serio (I) and C.W. Bardin (USA)

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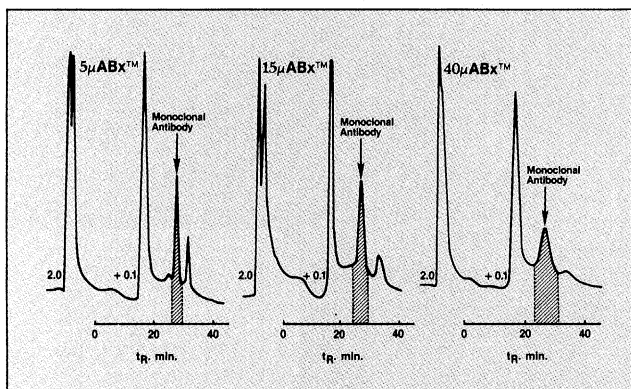
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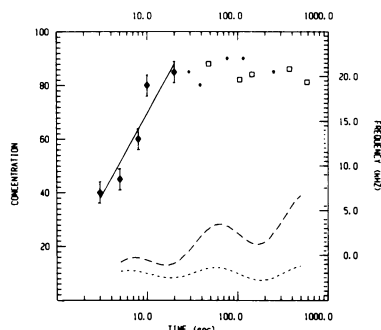
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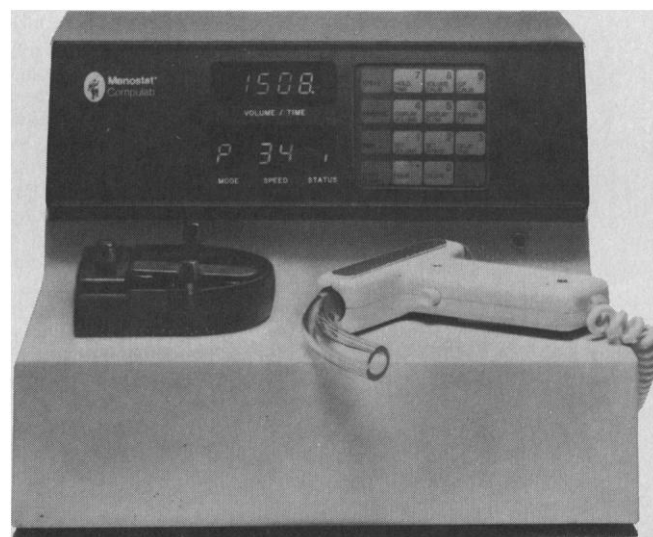
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G. ALLEN GREB, WILLIAM DURCH, MICHAEL T. KLARE, LEONARD RIESOR, ARTHUR SINGER, JR.

W-2. Hispanics in Science and Engineering: Past, Present, and Future (Sat., p.m.). Medicine: Puerto Rican influences; Spain; engineering; interventional programs.

ERIC MUNOZ, WALLACE C. KOEHLER, JR., MARCELO ALONSO, ENRIQUE MENDEZ, JR., JUAN BONNET, ANGEL JORDAN, JOSE MARTINEZ

W-3. Communicating Science to the Public: Writing Strategies for Scientists and Engineers (Sun., a.m.). Writing about science for the print mass media; strategies that enhance; reader understanding; packaging information; actual practice under an experienced writer.

SHARON L. DUNWOODY, CAROL L. ROGERS

W-4. How Computer Technology Affects Social and Economic Issues for the Disabled (Sun., p.m.). Disabled groups aid; aiding to obtain employment; transportation problems; independent living; rehab services.

HERBERT W. HOFFMAN, THOMAS SHWORLES, CHARLES SCHMIDT, JOHN KOSLOWSKI, KENT JONES, KATH YANNYAN, NARCA BRISTO, JOE HOLZER, SUE SUTER, BONNE FERNEAU, ZENA NAIDITCH

W-5. Communicating Science to the Public: Strategies for Television, II (Sun., p.m.).

JONATHAN WARD

W-6. Microcomputers as Decision Aids (Mon., a.m./p.m.). Decision-aiding software; multiple dimensions; multiple missing information; multiple alternatives; conflicting constraints; need for simplicity; handouts; hands-on experience to participants. [Requires separate registration and additional fee. See page 1445.]

STUART S. NAGEL

W-7. Workshop on Verification Technologies (Tue., p.m.).

DEE R. WERNETTE, KENNETH LERNER



Lindheimer Observatory: Evanston campus. (Courtesy of Northwestern University.)

Science Books & Films presents

The SB&F Science Film Festival

Regency Ballroom, Hyatt Regency, Chicago

THE SB&F SCIENCE FILM FESTIVAL OFFERS AN IMPORTANT collection of films and videos for all age groups dealing with a range of the natural and social sciences. Come and see programs on physics, astronomy, biomedical sciences, chemistry, anthropology, AIDS, biology, and much more. Expected times are shown below; exact times and a detailed program will be available in the Annual Meeting Program and at the door. Admission is free.

Sunday, 15 February

- 10:00 a.m. Dwellings
- 10:20 a.m. It's a Frog's Life
- 11:25 a.m. Mud Creek Clinic
- 11:55 a.m. Search for the Disappeared
- 12:55 p.m. Growing Pains
- 1:55 p.m. Nuclear Winter: A Growing Global Concern
- 2:20 p.m. Tornado
- 3:20 p.m. Not Crazy Like You Think

Monday, 16 February

- 10:00 a.m. Being an Astronaut
- 10:35 a.m. My CAT Scan
- 10:50 a.m. Principles of Technology: Power
- 11:55 a.m. Ladybug, Ladybug
- 12:10 p.m. Weave and Spin
- 12:25 p.m. What Einstein Never Knew
- 1:25 p.m. Mathematics of Choice and Chance: Statistics
- 2:00 p.m. Cheating Death
- 2:35 p.m. Aurora
- 3:40 p.m. Native Land: Nomads of the Dawn

Tuesday, 17 February

- 10:00 a.m. AIDS: What Everyone Needs to Know
- 10:20 a.m. Welcome Home Jellybean
- 10:55 a.m. All Things Animal
- 11:20 a.m. Cycle
- 11:30 a.m. Solar House
- 11:45 a.m. Copan
- 12:10 p.m. Global Weather
- 12:25 p.m. Weather Systems in Motion
- 12:45 p.m. Immunodeficiency: A Disease of Life
- 1:10 p.m. Holography: Memories in Light
- 1:35 p.m. Ethiopia
- 2:10 p.m. Energy: The Alternatives
- 2:40 p.m. Water, Birth, The Planet Earth: Water and Land

Wednesday, 18 February

- 10:00 a.m. Acid Rain: In Search of Solutions
- 10:15 a.m. Chemistry Matters
- 10:35 a.m. Hackers
- 11:05 a.m. Growing Up with Rockets
- 12:05 p.m. Another Africa: Wildlife and People in Conflict
- 12:35 p.m. Imprinting
- 1:05 p.m. Cooperation Across Boundaries: The Acid Rain Dilemma
- 1:40 p.m. Realm of the Alligator

Tours

Tours are limited to Annual Meeting registrants only; they depart from and return to the Hyatt Regency at the times indicated. Prices include transportation costs and any admission fees.

Tickets will be mailed in mid-January. Orders received **after 30 January** will be held at the AAAS Ticket Desk at the Hyatt Regency. Refund requests must be made by letter or telegram to the AAAS Meetings Office **before 6 February** and will be honored after the meeting. No refunds will be made on cancellations received after this date.

Disabled registrants who need advance tour information or assistance should so indicate on the order form or contact *Virginia Stern, AAAS Project on Science, Technology, and Disability, 1333 H Street, NW, Washington, DC 20005 (202/326-6667)*.

Please note: Tours No. 3, 4, 8, and 12 are of facilities which contractually operate under restrictions. Participants in these tours must submit in advance: full name, address, institution of affiliation, and country of citizenship (fill in appropriate space on the ticket order form). Proof of identity will be required on entering the premises; foreign nationals must show their passports.

1. **The University of Chicago.** Sun., 15 Feb., 10:30 a.m.–1:30 p.m. (tickets: \$8; limit: 90 persons).

Tour highlights include the site of the first controlled self-sustaining nuclear chain reaction, the Enrico Fermi and James Franck Institutes, the Crerar Library, the Oriental Institute Museum, and Frank Lloyd Wright's Robie House. Brunch will be served.

2. **Chicago Architecture Foundation Highlights.** Sun., 15 Feb., 1:00 p.m.–5:00 p.m. (tickets: \$15; limit: 45 persons).

This 30-mile tour includes major areas of Chicago architecture: the Loop, the Gold Coast, Hyde Park, three historic districts, and three university campuses, including Mies van der Rohe's IIT campus and Frank Lloyd Wright's Robie House.

3. **Argonne National Laboratory.** Mon., 16 Feb., 12:30 p.m.–5:45 p.m. (tickets: \$7; limit: 45 persons).

Located 25 miles southwest of Chicago, the Argonne National Laboratory is one of the nation's largest centers of energy research and related studies.

4. **Amoco Research Center/Fermi National Accelerator Laboratory.** Mon., 16 Feb., 12:30 p.m.–6:30 p.m. (tickets: \$10; limit: 45 persons).

The first stop is the Amoco Research Center in Naperville, which includes the R&D and technical service activities and long-range corporate research efforts of Amoco Corp. and its two major subsidiaries, Amoco Chemicals Co. and Amoco Oil Co. Then a tour of Fermi Lab. in Batavia, whose proton synchrotron uses beams of subatomic particles to study the "world of the small."

5. **Northwestern University.** Mon., 16 Feb., 12:30 p.m.–4:45 p.m. (tickets: \$8; limit: 90 persons).

Highlights of the campus tour include the University Library on the shore of Lake Michigan; the Center for Catalysis and Surface Science, one of the world's premier facilities of its kind; and research laboratories in biochemistry, molecular biology, and cell biology. Cocktails will be served.

6. **The Art Institute of Chicago: John Singer Sargent Exhibit.** Mon., 16 Feb., 1:45 p.m.–4:30 p.m. (tickets: \$10; limit: 90 persons).

The Art Institute is one of the world's leading museums, displaying art from 40 centuries of civilization. The special exhibition of Sargent's work is the first full-scale retrospective since 1927, and will include some 160 of his paintings, watercolors, lithographs, drawings, and mural studies. Refreshments will be served.

7. **Chicago Mercantile Exchange.** Tue., 17 Feb., 10:00 a.m.–11:30 a.m. (tickets: \$4; limit: 45 persons).

Established in 1919, the CME now accounts for about half of the world's futures and options trading volume. The tour includes an explanation of trading floor activity and an overview of futures and options as a part of world finance.

8. **Amoco Research Center/Fermi National Accelerator Laboratory.** Tue., 17 Feb., 12:30 p.m.–6:30 p.m. (tickets: \$10; limit: 45 persons).

Repeat of Tour No. 4.

9. **Field Museum of Natural History/John G. Shedd Aquarium/Adler Planetarium.** Tue., 17 Feb., 12:45 p.m.–4:30 p.m. (tickets: \$8; limit: 90 persons).

The Field Museum specializes in anthropology, botany, geology, and zoology. Visitors will take a behind-the-scenes tour of the scientific research departments and view current exhibits. They will then see the world's largest indoor aquarium—displaying fresh and saltwater species from all over the world—and the planetarium with its multimedia Sky Shows which "travel" through our solar system and to distant stars and galaxies.

10. **Chicago Architecture Foundation Highlights.** Tue., 17 Feb., 1:00 p.m.–5:00 p.m. (tickets: \$15; limit: 45 persons).

Repeat of Tour No. 2.

11. **Museum of Science and Industry.** Wed., 18 Feb., 12:30 p.m.–4:00 p.m. (tickets: \$8; limit: 90 persons).

The museum's collection includes numerous artifacts from the U.S. space program. Following a special introduction to the museum, visitors will view the exhibits and see a film that simulates a space shuttle's take-off and landing. The movie was taken on Super 70mm film, the largest film format in existence.

12. **Argonne National Laboratory.** Wed., 18 Feb., 12:30 p.m.–5:45 p.m. (tickets: \$7; limit: 45 persons).

Repeat of Tour No. 3.



**To order Chicago tour tickets,
use form on page 1445.**

Visit the AAAS Science & Technology Exhibition

- Discover new products & services.
- Learn about the latest state-of-the-art technology.
- See exhibits by 70 leading organizations.
- Meet your suppliers.
- Examine new textbooks and resource materials.
- Find out what's happening in science.

Saturday, 14 February 6:00pm-8:00pm
Sunday, 15 February 10:30am-2:30pm & 5:00pm-7:00pm
Monday, 16 February 10:30am-2:30pm & 5:00pm-7:00pm
Tuesday, 17 February 10:30am-2:30pm

Wacker Exhibition Hall
Hyatt Regency Chicago

Hotel Reservation Form ♦ Hyatt Regency Chicago
AAAS Annual Meeting ♦ Chicago ♦ 14 – 18 February 1987

Mail to: Reservations, Hyatt Regency Chicago, 151 East Wacker Drive, Chicago, IL 60601

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 _____

Arrival date _____
Time _____ ☐ a.m. ☐ p.m.

Departure date _____
Time _____ ☐ 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.

Hyatt Regency Hotel Rates: Add 10.1% state and city sales tax. Check appropriate box for type of room desired.

Room Category	Single	Double or Twin	Parlor + 1 Bedrm.	Parlor + 2 Bedrms.
Standard	<input type="checkbox"/> \$79	<input type="checkbox"/> \$96	<input type="checkbox"/> \$300 & up	<input type="checkbox"/> \$379 & up
Club Level	<input type="checkbox"/> \$102	<input type="checkbox"/> \$118		

■ Reservations must be submitted to the Hyatt Regency (address above) on this official form by **23 January 1987**. Reservations received after this cut-off date are conditional on space availability. ■ Make any changes or cancellations directly with the hotel, which will also confirm your reservations.

■ Rollaway bed or extra person in room: \$15.

■ Children to age 18 free of charge in same room with parents.

Discount Air Fares to the AAAS Annual Meeting

14 – 18 February 1987 ♦ Chicago

AAAS has made special arrangements with United Airlines and with Delta Air Lines to obtain the following discounts for your travel to and from the AAAS Annual Meeting:

40% off any *regular* coach fare (no minimum stay or advance purchase required)

5% off any *discounted* or *promotional* fare (subject to availability or qualifying conditions)

These special savings are available for travel from 10–22 February 1987. To make reservations for these or any other promotional fares, call one of the toll-free numbers below and give the appropriate AAAS convention account number.



UNITED AIRLINES

AAAS Convention Account Number: 7018D
Call toll-free: 800-521-4041
(7 days a week, 8:00 a.m.-11:00 p.m. Eastern time)



DELTA

AAAS Convention Account Number: R0030
Call toll-free: 1-800-241-6760
(7 days a week, 8:30 a.m.-8:00 p.m. Eastern time)

Please note that the special AAAS discounts are only available through the
airline convention desks at the numbers indicated above.

Advance Registration Form ♦ 1987 AAAS Annual Meeting

\$5

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

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

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

(Spouse registrant)

Mailing address _____
(Street)

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

Convention address _____
(Where you can be reached) (Hotel and/or telephone number)

Check days on which you will attend meeting: Sat Sun Mon Tue Wed

☐ 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 early January. ■ Registrations received after 30 January will be held at the Advance Registrants' Desk at the Hyatt Regency Hotel. ■ Refund requests must be made by letter or telegram to the above address before 6 February 1987 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.

Mail to: AAAS Meetings Office, Annual Meeting Registration, 1333 H Street, NW, Washington, DC 20005

Annual Meeting
Regular ☐ \$65 ☐ \$90 \$ ____
Student, Retired,
Spouse, or
HS Teacher ☐ \$35 ☐ \$45 \$ ____

Frontiers of Neuroscience — Special Seminar
Regular ☐ \$60* ☐ \$85* \$ ____
Graduate Student .. ☐ \$30* ☐ \$45* \$ ____

*Note: Registrants for this seminar must also register for the AAAS Annual Meeting (see above). If you have already registered for the Meeting, please check here ☐.

Join AAAS — save with member rates
Regular Membership † ☐ \$65 \$ ____
Student or
Retired Membership † ☐ \$40 \$ ____
Membership without *Science*
(Spouse or Retired only) .. ☐ \$17 \$ ____
† includes 51 weekly issues of *Science*.

TOTAL ALL LINES \$ ____

☐ Check enclosed ☐ VISA ☐ MasterCard
(no other cards accepted)

Card number _____ Expires _____

Signature _____

Tour/Workshop Order Form ♦ 1987 AAAS Annual Meeting

Please Print

Name: _____ Phone (____) _____

Institution/Company: _____
(If part of mailing address)

Address: _____

City/State/Zip: _____

Citizenship (for tours 3, 4, 8, and 12): _____

Indicate any special requirements due to a handicap _____

No. Tours:	Price	No. of Tickets
1. University of Chicago (2/15)	\$ 8.00	_____
2. Chicago Architecture (2/15)	\$15.00	_____
*3. Argonne National Lab (2/16)	\$ 7.00	_____
*4. Amoco Res. Ctr. / Fermi Lab (2/16)...	\$10.00	_____
5. Northwestern University (2/16).....	\$ 8.00	_____
6. Art Institute of Chicago (2/16)	\$10.00	_____
7. Chicago Mercantile Exchange (2/17) ..	\$ 4.00	_____
*8. Amoco Res. Ctr. / Fermi Lab (2/17)...	\$10.00	_____
9. Field Museum / Shedd Aquarium / Adler Planetarium (2/17)	\$ 8.00	_____
10. Chicago Architecture (2/17).....	\$15.00	_____
11. Museum of Science & Industry (2/18).....	\$ 8.00	_____
*12. Argonne National Lab (2/18)	\$ 7.00	_____

Special Workshop: Price No. of Tickets
Microcomputers as Decision-Aids \$20.00 _____

Total Number of Tickets Ordered _____

Total Cost of Tours and Workshop \$ _____

Please check one:

☐ Check Enclosed ☐ VISA ☐ MasterCard
(no other cards accepted)

Card No. _____ Expires _____

Signature _____

*Tours 3, 4, 8, and 12 require that you indicate full name, address, institution of affiliation, and country of citizenship.

Mail to: AAAS Meetings Office, Tour/Workshop Tickets, 1333 H Street, NW, Washington, DC 20005
12 DECEMBER 1986

AAAS MEETINGS 1445