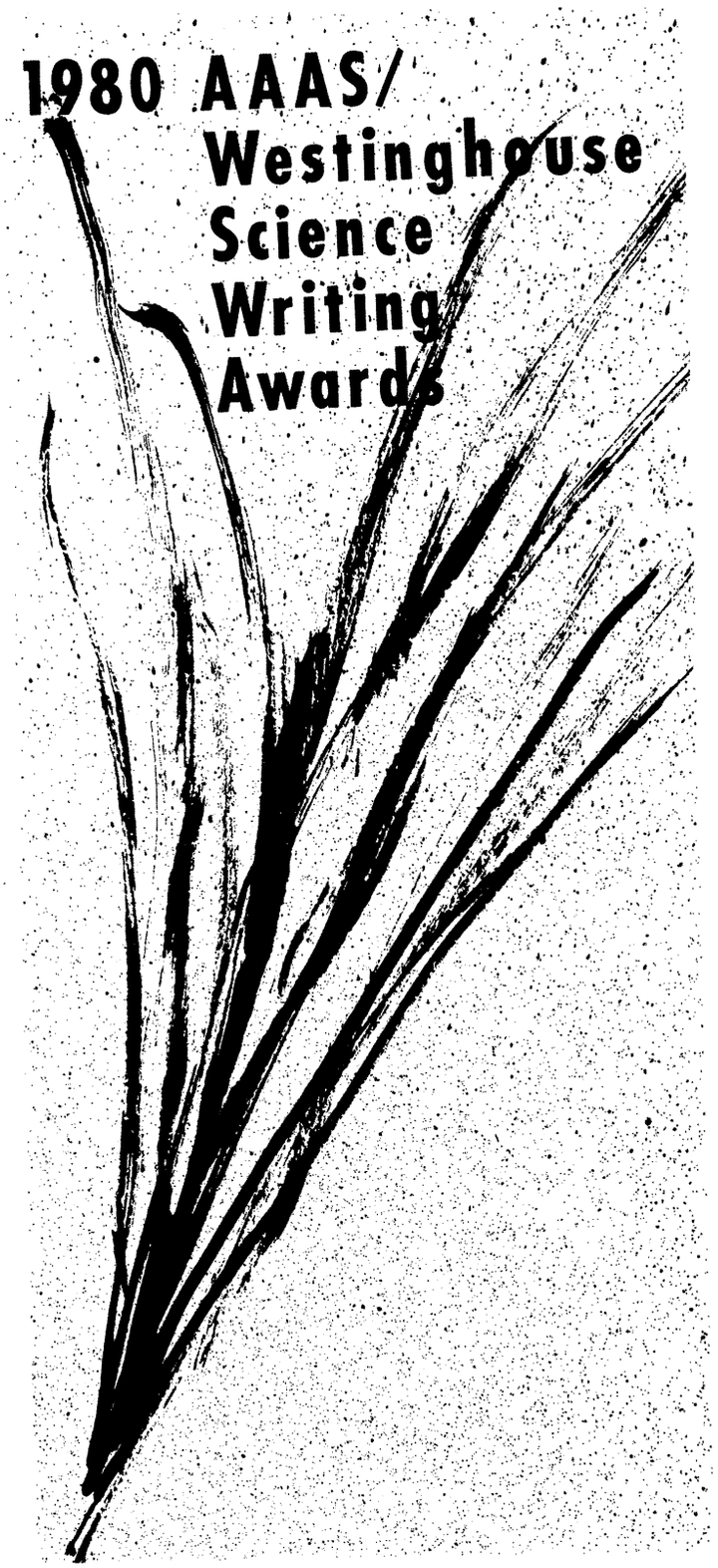
3 October 1980 • Vol. 210 • No. 4465 $1.50

SCIENCE

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



RULES

1) The aim of this competition is to encourage and recognize outstanding writing on the sciences and their engineering and technological application in newspapers and general circulation magazines. The following categories are not eligible: articles on the field of medicine, articles published originally in AAAS publications, articles by employees of the AAAS or Westinghouse Electric Corporation.

2) Each entrant in a newspaper award competition and each entrant in the magazine award competition may submit three entries.

3) An entry for a newspaper competition may be any of the following: a single story; a series of articles; or a group of three unrelated stories, articles, editorials, or columns published during the contest year. A magazine entry may be a single story or series published during the contest year.

4) A completed entry blank must be submitted together with six copies of each entry in the form of tear sheets, clippings, reprints, or syndicate copy (not over 8½" x 11"), showing name and date of the publication. ENTRIES MUST NOT BE ELABORATE.

5) Each entry must have been published in a newspaper or general circulation magazine within the United States during the contest year — 1 October 1979 through 30 September 1980. (In the case of a series, more than half of the articles comprising it must have been published during the contest year.) Date on the issue in which an article appeared will be considered as the date of publication. All entries must be postmarked on or before midnight, 15 October 1980.

6) Persons other than the author may submit entries in accordance with these rules. Entries will not be returned.

7) Winners of the 1979 awards are not eligible for the 1980 awards. Persons winning three times are no longer eligible.

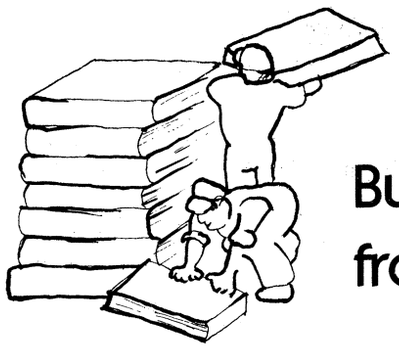
8) The Judging Committee, whose decisions are final, will choose the winners. There are three awards of $1000: for the winning entry in the over-100,000 daily circulation newspapers competition, for the winning entry in the under 100,000 circulation newspapers competition; and for the winning entry in the general circulation magazine competition. For award purposes, newspaper circulation will be sworn ABC daily circulation as of 30 September 1980. The Judging Committee may cite other entries for honorable mention.

9) The awards will be presented at the dinner meeting of the National Association of Science Writers, during the 1980 meeting of the American Association for the Advancement of Science in January 1981. Travel and hotel expenses of the award winners will be paid. Entrants agree that, if they win, they will be present to receive their awards, unless prevented by circumstances beyond their control.

Grayce A. Finger

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

1515 Massachusetts Avenue, N.W. Washington, D.C. 20005



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3 October 1980

Volume 210, No. 4465

SCIENCE

SCIENCE is published weekly on Friday, except the last week in December, by the American Association for the Advancement of Science, 1515 Massachusetts Avenue, NW, Washington, D.C. 20005. Second-class postage (publication No. 484460) paid at Washington, D.C., and at an additional entry. Now combined with **The Scientific Monthly®**. Domestic individual membership and subscription (51 issues): $38. Domestic institutional subscription (51 issues): $76. Foreign postage extra: Canada $14, other (surface mail) $17, air-surface via Amsterdam $45. First class, airmail, school-year, and student rates on request. Single copies $1.50 ($2 by mail); back issues $2.50 ($3 by mail); classroom rates on request. **Change of address:** allow 6 weeks, giving old and new addresses and seven-digit account number. **Postmaster:** Send Form 3579 to *Science*, 1515 Massachusetts Avenue, NW, Washington, D.C. 20005. *Science* is indexed in the *Reader's Guide to Periodical Literature* and in several specialized indexes.

COVER

Lost City fireball, peak magnitude −12, which fell in January 1970. Fireballs brighter than this occasionally produce reports of anomalous sounds heard simultaneously with their observed passage and quite distinct from the normal sonic booms heard later. The 1978 New South Wales fireball of estimated magnitude −16 produced both types of sounds. See page 11. [NASA, Washington, D.C.]

monsoon in southwestern United States. The advent of this moist-air intrusion from the gulfs of California and Mexico greatly increases the flux of thermal radiation to the earth's surface in a readily predictable manner (another of my background papers, now "in press" in *Water Resources Research*) and significantly raises surface air temperatures. Finally, the third experiment makes use of the monthly variation in mean near-surface air temperature caused by the monthly variation in solar radiation reception at more than 100 stations in the United States (the last of my "in preparation" papers).

Consider the differences among these three situations. Different atmospheric constituents are involved (dust and water vapor), as well as different regions of the electromagnetic spectrum (solar and thermal wavelengths), different time scales (hours to many months), and different magnitudes of forcing functions. Yet all situations yield essentially the same value for the near-surface air temperature response function—except for the last approach, where a dozen stations on the Pacific Coast yielded a result that was only half as great; I took that value to be an upper limit for the world's ocean surfaces. Thus, although the data base I worked with was admittedly not global, the good agreement among the results of such diverse experiments suggests that the atmospheric response function thus elucidated may be globally applicable. Obviously, more experiments of this nature would be helpful in establishing the validity of this supposition.

It also remains for future experiments to establish the validity of applying a relatively short-term response function, such as I have measured, to a long-term problem, such as the CO_2-climate connection. Even now, however, long-term global temperature records can be searched for a response to the already significantly increased atmospheric CO_2 content. Indeed, Ramanathan himself has just published one such study in *Science* (15 Aug., p. 763), wherein he concludes that "the surface warming due to increased carbon dioxide which is predicted by three-dimensional climate models should be detectable now." However, he states in the next sentence that "it is not." Thus, both the experimentally observed response characteristics of the real atmosphere and real climatic history cast doubts upon predictions of general circulation models that yield mean global temperature increases of 2 to 4 K for a doubling of the atmospheric CO_2 content.

A final question of Schneider *et al.* and practically the entire content of Leovy's communication have to do with the work of Newell and Dopplick (*4*). I would hate to rob the latter two investigators of the opportunity to speak for themselves, as indeed they will shortly (*5*) in reply to the criticism of their work by Watts (*6*). It should be obvious, however, that my conclusions do not depend in any way upon theirs, and that each will stand or fall on its own.

SHERWOOD B. IDSO
U.S. Water Conservation Laboratory,
4331 East Broadway,
Phoenix, Arizona 85040

References and Notes

1. J. Gribbin, *New Sci.* **79**, 541 (1978).
2. S. B. Idso and P. C. Kangieser, *J. Geophys. Res.* **75**, 2179 (1970).
3. S. B. Idso and A. J. Brazel, *Nature (London)* **274**, 781 (1978).
4. R. E. Newell and T. G. Dopplick, *J. Appl. Meteorol.* **18**, 822 (1979).
5. R. E. Newell, personal communication, 3 September 1980.
6. R. G. Watts, *J. Appl. Meteorol.* **19**, 494 (1980).

Animals in the Classroom

The first and the last paragraphs in the briefing, "Science teachers to ban testing harmful to animals" (News and Comment, 15 Aug., p. 791) are misleading. The National Association of Biology Teachers adopted revised "Guidelines for the use of live animals at the preuniversity level" (*1*) because of better scientific understanding of animal perception and behavior, not in response to pressure from animal welfare groups. Our original guidelines, published in 1960 (*2*), became outdated because of advances in the fields of animal husbandry and experimentation.

In the last paragraph, two statements I made during a telephone interview with author Marjorie Sun are correctly quoted. However, I was responding to the question "How much are animals *used* in the classroom?" rather than "abused," as reported. I replied that animal use in biology instruction has decreased, due partly to a dearth of animal care courses for teachers, but mostly to school budget cuts. Animal abuse, to my knowledge, has never been a problem among biology teachers.

WAYNE A. MOYER
National Association of Biology Teachers,
11250 Roger Bacon Drive,
Reston, Virginia 22090

References

1. *Am. Biol. Teach.* **42**, 426 (1980).
2. *Ibid.* **22**, 478 (1960).

3 October 1980, Volume 210, Number 4465 **SCIENCE**

Social, Economic, and Political Leadership

Engineers, mathematicians, and natural scientists with demonstrated technical and scientific achievements do, at various stages in their careers, become social, economic, and political leaders. But measured by the needs of society and by the potential of the talent pool, the numbers that do so are very small. I applaud those who make this transition and worry about the fact that they number so few.

What can professional societies do to encourage individuals to consider and to achieve career transitions? What can academic institutions do to encourage and to enable students of science and technology to evaluate a wide variety of career options, including career transitions, in their own career planning?

Engineers, mathematicians, and natural scientists are unique in their capacity to comprehend the capabilities and the limitations of the natural sciences and technology to serve the needs of society on both a short-term and a long-term basis. This comprehension of the capabilities and limitations of science and technology is essential for realistic social, economic, and political action and planning.

We now understand that every technological innovation, regardless of how great its positive impact on society, also brings with it a negative impact on society—not necessarily on the same segment of society and not necessarily in the same time frame, but a negative impact nonetheless. This is characteristic of all change. Technological innovations are the fruition of technological options created through the use of scientific knowledge and technological capabilities. Scientists and engineers are in the business of extending knowledge and creating technological options. In doing so, scientists and engineers create the opportunity to choose among a variety of options in the continuing search for technologies to serve the public good and to minimize the negative impacts of technology on society. An understanding of both the short-term and the long-term potential impact of each technological option is essential for realistic choices.

Decisions are made in the social, economic, and political context of society. Many decisions are made through the political process. The decisions affect the social, economic, and political structure of society. Leadership in these matters is desperately needed and should arise from all segments of society—including the scientific community. In recognition of this need, the AAAS established the Congressional Science and Engineering Fellows Program and the Mass Media Science Fellows Program. At the AAAS annual meeting in Toronto next January, a panel of engineers and natural scientists, who are now recognized social, economic, and political leaders, are to address the question, "Can we educate for leadership?"

Fundamentally, endeavors such as these serve to explore and to modify our traditional concepts of the careers appropriate to those who elect as students to pursue academic programs in engineering, mathematics, and the natural sciences. This reevaluation is part of evolutionary processes appropriate to a mature technological society. I believe that many young people are attracted to a broader concept of the roles appropriate to engineers and scientists and that, in time, a broader spectrum of individuals will be attracted to engineering, mathematics, and the natural sciences with career plans that make feasible transitions leading to positions of social, economic, and political leadership. The roles of social, economic, and political leaders well grounded in science and engineering and the roles of scientific and technical leaders are complementary. Each enhances the other. Both are essential to society; both are creative; both can be personally rewarding.—ANNA J. HARRISON, *Carr Laboratory, Department of Chemistry, Mount Holyoke College, South Hadley, Massachusetts 01075*

IT'S BACK.
THE TV ADVENTURE SERIES STARRING SCIENCE, TECHNOLOGY, HISTORY, AND SERENDIPITY.

"Connections." Presented by the Bell System.

When "Connections" appeared in the United States over PBS stations last year, the critics acclaimed the program.

Jeff Greenfield of CBS called it "a model of what public television should do." Peter Schuyten of The New York Times noted, "...the series is an important undertaking..." Graham Chedd, a Science 80 writer, described the production as "brilliant television, beautifully filmed, skillfully constructed, often sumptuously staged and presented by an engaging host, James Burke."

The featured stars in the series are science and technology and the people and places surrounding them.

"Connections" presents the process and problems of technology and shows how the advances people take for granted today often stem from seemingly unrelated and sometimes accidental events.

While each episode focuses on a specific invention, the breadth of the program is as large as human history.

This brief summary of the 10 programs will give you an idea of the diverse subjects "Connections" covers.

1. The Trigger Effect. Man's dependence on complex technologies, the New York City power blackout of 1965 and its beginning on the Nile River.

2. Death in the Morning. Precious metals, magnetism, atomic energy and the effect of Hiroshima, 1945.

3. Distant Voices. Global telecommunications that begin with the Battle of Hastings.

4. Faith in Numbers. Systems—political, economic, mechanical and electronic—and how some of them began with a prayer.

5. The Wheel of Fortune. Computers, our link to the future, and their ancestor: astrology.

6. Thunder in the Skies. The 13th century freeze that changed the course of history.

7. The Long Chain. Materials that were discovered through little accidents but triggered big changes.

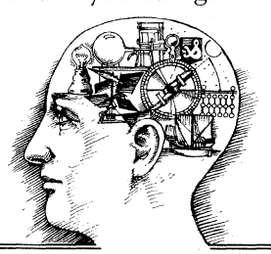
8. Eat, Drink and Be Merry. Switzerland, 1476, and the first steps that led to landing on the moon.

9. Countdown. The incredible events that led to Thomas Edison's remarkable inventions.

10. Yesterday, Tomorrow and You. Moments from the previous programs and then a challenging look at the future.

Check local listings for time and channel.

In this complex world, you can use all the connections you can get.



CONNECTIONS

An alternative view of change

Closed-captioned for the hearing impaired.

Bell System

Annual Meeting
Toronto
3-8 January 1981

Tours

For the Annual Meeting Program, please see the Preliminary Program in the 12 September issue of *Science*, pages 1221–1233. Tours are limited to Meeting Registrants only.

Tours

1. Ontario Science Centre, Tour A: Sunday, 4 January, 1:30 pm.–5:00 p.m.

Trip to Centre which includes 570 exhibits, most of them participational, demonstrations, mini-theatres, films, and workshops designed to stimulate the interest of the public in science.

2. Centre for Forensic Sciences: Monday, 5 January, 8:30 a.m.–12:00 noon.

Tour will provide an opportunity to view the workings of a modern "crime laboratory." Visits to some of the laboratories in forensic chemical-toxicology, biology, photography, firearms identification, and document examination will be included as well as illustrations of actual cases.

3. TVOntario: Monday, 5 January 1:30 p.m.–5:30 p.m.

Includes demonstrations of Telidon, a computer communications system, Program Evaluation Analysis Computer, Anik B Satellite Experiment, FAST FOWARD, a new television series dealing with technology, and a tour of the master control and studio facilities.

4. Gulf Oil Refinery and Research and Development Laboratories: Tuesday, 6 January, 8:30 a.m.–4:00 p.m.

Refinery utilizes hydrogen treatment process for the manufacture of superior lubricants from Canadian crude oils. Tour of Gulf Research and Development Centre will feature laboratories involved in analytical product development, specialty products, engine testing a pilot plant. Box lunch included.

5. Ontario Hydro's Pickering Generating Station: Tuesday, 6 January, 1:30 p.m.–5:00 p.m.

Ontario Hydro operates four nuclear generating stations. CANDU reactor is highlighted in tour of the Nuclear Communications centre and Pickering Generating Station.

NOTE: Name and affiliation is required in advance of the tour from each person. Regulations do not permit visitors under 18 years of age. They are welcome, however, in the visitors' centre and exhibit area.

6. Research Facilities Sheridan Park: Wednesday, 7 January, 8:30 a.m.–2:00 p.m.

Includes Atomic Energy of Canada Limited (AECL) which supports design engineering of CANDU reactors, repair, installations and development programs. Visit to Ontario Research Foundation, a multi-disciplinary resource for industry, consultants, and government. Areas of major emphasis are energy, environment, materials, products and processes, and resources. Box lunch included.

7. Resource Exploration and Environmental Sciences: Wednesday, 7 January, 1:30 p.m.–5:00 p.m.

Includes tours of Barringer Research Limited and Scintrex Limited, which concentrate on the development and manufacture of devices for measuring natural force fields, physical and chemical properties of the solid earth and its atmosphere.

8. Medical Sciences Building—University of Toronto: Thursday, 8 January, 8:30 a.m.–12:00 noon.

Tour will visit several laboratories to illustrate some of the research activities in the field of medicine in the Toronto area.

9. Ontario Science Centre, Tour B: Thursday, 8 January, 1:30 p.m.–5:00 p.m.

See description for tour No. 1.

Special Post-Meeting Tour

10. Canada Centre for Inland Waters and Niagara Falls: Friday, 9 January, 8:30 a.m.–5:00 p.m.

Includes Canada Centre for Inland Waters' facility for Great Lakes research, Niagara Falls, and hydroelectric power plant. Lunch available.

As part of the activities at the forthcoming AAAS Annual Meeting, tours provide an opportunity for the meeting participants to explore some of the outstanding facilities in Greater Toronto focusing on the areas of science and technology. Using the reservation form that follows, please make advance reservations as soon as possible; space is limited and early commitments must be made to the host organizations. Reservations received after 15 December will be returned. Tickets will be available at the Ticket Desk in the Meeting Registra-

Please be sure to make your reservations early—space is limited.

tion area, Concourse Lobby, in the Sheraton Centre Hotel. Reserved tickets should be picked up by noon of the day preceding the day of the tour(s) selected. Reserved tickets not picked up by this deadline will be released to others up to one half hour before tour departure. A nominal charge will be made to help defray transportation and lunches (when provided). Handicapped persons who need assistance for the tours (or any Meeting function) should consult the staff at the Resource Centers for Disabled Registrants (Wentworth Room, second floor of the Sheraton Centre or the New Brunswick Room, Main Mezzanine of the Royal York Hotel). All tours depart from and return to the Richmond Street entrance of the Sheraton Centre at the respective times listed for each tour.

Annual Meeting
Toronto
3-8 January 1981

Reservation Form for Tours

AAAS Meeting registrants who wish to reserve tickets for any of the tours should complete the coupon below and return it to AAAS as soon as possible—space is limited. Reservations received after *15 December* will be returned. Reserved tickets will be held at the Ticket Desk in the Meeting Registration area, Concourse Lobby, in the Sheraton Centre Hotel. *Tickets should be picked up by noon of the day preceding the day of the tour.* Reserved tickets not picked up by this time will be released to others up to one half hour before the tour departs. *Do not send any remittance with this coupon*; it is a reservation form only. Please note that tours are limited to Meeting registrants only.

Tour	No. of Tickets
1. Ontario Science Centre, Tour A [Sun., 4 Jan., 1:30 p.m.–5:00 p.m.]	_____
2. Centre for Forensic Sciences [Mon., 5 Jan., 8:30 a.m.–12:00 noon]	_____
3. TVOntario [Mon., 5 Jan., 1:30 p.m.–5:30 p.m.]	_____
4. Gulf Oil Refinery, R & D Labs [Tues., 6 Jan., 8:30 a.m.–4:00 p.m.] Lunch included.	_____
5. Pickering Generating Station [Tues., 6 Jan., 1:30 p.m.–5:00 p.m.]	_____
6. Sheridan Park [Wed., 7 Jan., 8:30 a.m.–2:00 p.m.] Lunch included.	_____
7. Resource Exploration [Wed., 7 Jan., 1:30 p.m.–5:00 p.m.]	_____
8. Medical Sciences Building [Thurs., 8 Jan., 8:30 a.m.–12:00 noon]	_____
9. Ontario Science Centre, Tour B [Thurs., 8 Jan., 1:30 p.m.–5:00 p.m.]	_____
Special Post-Meeting Tour	
10. Canada Centre for Inland Waters, Niagara Falls [Fri., 9 Jan., 8:30 a.m.–5:00 p.m.]	_____
Total Number of Tickets Reserved	_____

Indicate any special requirements due to a handicap: _____

_____

Name _____

Affiliation _____

Address _____

City _____ State _____ Zip _____

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The Niagara Falls during the winter—Niagara Falls, Ontario. [National Film Board of Canada]

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 dealing with the natural and social sciences, the technologies derived from them, and the social issues they raise. The 1981 Festival includes many productions from Canadian filmmakers and producers in each of these subject areas.

The *Science Film Festival* will run from 10:00 a.m. to 4:00 p.m. Sunday and Monday, 4 and 5 January; and from 10:00 a.m. to 3:00 p.m. Tuesday and Wednesday, 6 and 7 January in the Cinema II theatre at the Sheraton Centre. Admission is free.

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

Sunday, 4 January

10:00 a.m. From the Ocean to the Sky
10:51 a.m. Mammals
11:04 a.m. Mirrors on the Universe
11:33 a.m. Herzberg
11:50 a.m. Galaxy
11:58 a.m. Now the Chips Are Down
12:51 p.m. Legacy
12:56 p.m. Our Hidden National Product
1:21 p.m. Left Brain/Right Brain
2:21 p.m. Energy and Morality
2:55 p.m. The Invisible Flame

Monday, 5 January

10:00 a.m. The Wolf and the Whitetail
10:27 a.m. The Wheel of Fortune
11:27 a.m. The Power to Change
11:55 a.m. Beluga Baby
12:09 p.m. The Invisible World
1:09 p.m. Continents Adrift
1:26 p.m. Burnout
1:52 p.m. The Social Life of Small Urban Spaces
2:48 p.m. Why Me?
2:58 p.m. Bears and Man
3:24 p.m. Infinity's Child
3:46 p.m. Dinosaur

Tuesday, 6 January

10:00 a.m. Living Machines
10:58 a.m. Growth Dilemma
11:19 a.m. Osprey
11:54 a.m. Booom
12:05 p.m. The Silent Witness
1:00 p.m. Log House
1:29 p.m. Last Stand in Eden
2:29 p.m. The Solar Promise

Wednesday, 7 January

10:00 a.m. Einstein's Universe
12:01 p.m. The Fastest Animal on Earth
12:10 p.m. Oh Brother, My Brother
12:25 p.m. Curious Cat
1:16 p.m. Wild Babies
1:43 p.m. Patterns of Pain
2:12 p.m. Sharing the Experience with Peter
2:40 p.m. Nails

Annual Meeting

Toronto

3-8 January 1981

ADVANCE REGISTRATION FORM (B)

NAME OF REGISTRANT: _____
(Last Name) (First and Initial)

NAME OF SPOUSE REGISTRANT: _____
(Last Name) (First and Initial)

REGISTRANT'S MAILING ADDRESS: _____
[For receipt of program(s), badges(s), and *Science* (for new applicants)] (Street)

_____
(City/State or Province) (Zip Code)

ADDITIONAL REGISTRANTS: _____
(With same mailing address. Use new form if address differs.)

_____

REGISTRANT'S INSTITUTION OR COMPANY: _____

_____ (Zip Code)
(City) (State or Province)

CONVENTION ADDRESS: _____ Check days attending: Sat ☐ Sun ☐ Mon ☐ Tue ☐ Wed ☐ Thu ☐
(Where you can be reached) (Hotel or Street Address, and/or Phone No.)

☐ **Please check here if you need special services due to handicap. We will contact you prior to the meeting.**

- Please check appropriate boxes, complete remainder of form (type or print), and **enclose payment.**
- Preconvention Program, badge, and voucher for full Program and Abstracts will be mailed to registrants in early December.
- Full Program and Abstract Volume can be picked up at *Advance Registrants' Desks* at the Sheraton Centre or the Royal York.
- **Registrations received after 12 December will be held at the AAAS Information Booth at the Sheraton Centre.**
- **Refund** requests for registration fees must be made by letter or telegram prior to 26 December 1980 and will be honored after the Annual Meeting. **No refunds are made on cancellation notices received after this date.**
- Special one-day attendance registration will be available at on-site Registration Desks only.

Registration Category	Regular				Student† or Retired			
	Single		Double		Single		Double	
	$US	$CAN	$US	$CAN	$US	$CAN	$US	$CAN
☐ AAAS Member	☐ 30	☐ 35	☐ 45	☐ 52	☐ 15	☐ 17	☐ 23	☐ 26
☐ Non-Member:								
☐ Meeting registration only	☐ 38	☐ 44	☐ 53	☐ 61	☐ 19	☐ 22	☐ 27	☐ 31
☐ Register and join: Single membership*	☐ 68	☐ 95#	☐ 83	☐ 112#	☐ 42	☐ 64#	☐ 50	☐ 73#
☐ Registration and join: Double membership**			☐ 95	☐ 125#			☐ 62	☐ 86#

†Fulltime undergraduate or graduate students only.

*Specify name of new member _____

**Registrant and spouse double membership includes single subscription to *Science* (51 issues per year).
#Canadian dollar rates are for Canadian membership, including additional postage.

NOTE: 1980 Membership Dues: Regular Member $US 38; $CAN 60#. Student or Emeritus, $US 27; $CAN 47#. Spouse or Emeritus without *Science*, $US 12; $CAN 13#. For other countries, please inquire.

Mail to: American Association for the Advancement of Science, Dept. R, 1515 Massachusetts Ave., NW, Washington, D.C. 20005

SURVEY OF ATTENDANTS

Annual Meeting, Toronto, 3–8 January 1981

Your answers to the following questions will help us to plan future Annual Meetings. Please complete the form and either return it with your registration form or send in separately (to the same address) if you wish to respond anonymously (the two forms will be processed separately).

Principal Professional Interest
11 ☐ Physical, mathematical
12 ☐ Biological, medical
13 ☐ Engineering
14 ☐ Social, behavioral
15 ☐ Science policy
16 ☐ ..... (other)

Principal Professional Activity
21 ☐ Teaching, education
22 ☐ Health practice
23 ☐ Other practice, consulting
24 ☐ Research, development
25 ☐ Administration
26 ☐ ..... (other)

Institutional Affiliation Type
31 ☐ University, 4-year college
32 ☐ Other educational
33 ☐ Industrial, commercial
34 ☐ Other Private
35 ☐ Government
36 ☐ ..... (other)

Highest Educational Level
41 ☐ Doctoral Degree
42 ☐ Master's Degree
43 ☐ Other professional
44 ☐ Bachelor's Degree
45 ☐ ..... (other)

Age
51 ☐ Under 26 years
52 ☐ 26 to 35 years
53 ☐ 36 to 45 years
54 ☐ 46 to 55 years
55 ☐ 56 to 65 years
56 ☐ Over 65 years

Number of Past AAAS Meetings Attended
61 ☐ None
62 ☐ One
63 ☐ Two
64 ☐ Three
65 ☐ Four
66 ☐ Five or more

Distance Traveled to Meeting
71 ☐ Under 51 miles
72 ☐ 51 to 150 miles
73 ☐ 151 to 400 miles
74 ☐ 401 to 1000 miles
75 ☐ 1001 to 3000 miles
76 ☐ Over 3000 miles

HOTEL RESERVATIONS

Annual Meeting
Toronto
3-8 January 1981

Conference Air Services (CAS) has been selected as the official travel coordinator for the AAAS Annual Meeting in Toronto. *CAS* will handle all housing and travel arrangements. Please take note of the housing information below and the travel information on the back of this page.

- All housing reservations must be submitted to *CAS* in writing (use housing form below).
- Reservations must be received by *Conference Air Services* **not later than 12 December 1980;** reservations received after that date are conditional upon space availability at the hotels.
- Rooms are assigned on a first come, first served basis. If room rate requested is no longer available, the next available higher rate will be assigned.
- Confirmation will come directly from *Conference Air Services (CAS).* All changes and cancellations must be made in writing through *CAS*.

ROOM RATES IN CANADIAN DOLLARS*

Hotels	Single	Double & Twin	Parlor + 1 Bedrm.	Parlor + 2 Bedrms.	Parking (rates subject to change)
SHERATON CENTRE 123 Queen Street West *(No. of rooms: 1000)*	$52 56 64	$66 70 78	$128 and up	$192 and up	$5.50 per 24 hours; no in-and-out privileges. Inquire for hourly rates.
ROYAL YORK HOTEL 100 Front Street West *(No. of rooms: 800)*	$53 58 63	$67 72 77	$125 and up	$203 and up	$5.25 per 24 hours with in-and-out privileges.
HOTEL TORONTO 145 Richmond Street West *(No. of rooms: 100)*	$58	$68	$150 and up	$210 and up	$5.00 per 24 hours with in-and-out privileges.

*$ *(Can)* 1.00 = $ *(US)* 0.86, with slight daily fluctuations; **there is no room tax.**
Charges for roll-away beds: Sheraton Centre and Hotel Toronto, $15; Royal York Hotel, $12.
Children are accommodated free of charge in same room with parents; age limits are as follows: Royal York, 14 and under; Sheraton Centre and Hotel Toronto, 18 and under.

Please type or print! **AAAS HOUSING FORM** ***Please type or print!***

SEND CONFIRMATION TO:

Name _____ Street _____

City _____ State _____ Zip _____ Phone No. _____

OTHER OCCUPANTS OF ROOM:

Name _____ Name _____

Name _____ Name _____

CHOICE OF HOTEL: First _____ Second _____ Third _____

ROOM: ☐ Single ☐ Double ☐ Twin **SUITE:** ☐ 1 Bedroom ☐ 2 Bedrooms **PREFERRED RATE: $**_____

PLEASE INDICATE SPECIAL HOUSING NEEDS DUE TO A HANDICAP:

Wheelchair accessible room ☐ Other: _____

ARRIVAL DATE: _____ TIME: _____ ☐ a.m. ☐ p.m.

DEPARTURE DATE: _____ TIME: _____ ☐ a.m. ☐ p.m.

Be sure to list definite arrival and departure date and time. Hotel reservations will be held only until 6 p.m. unless otherwise specified.

Mail to: AAAS Housing Bureau
c/o CONFERENCE AIR SERVICES
1911 N Ft. Myer Drive
Arlington, Virginia 22209

Annual Meeting

Toronto

3-8 January 1981

AIR TRAVEL RESERVATIONS

Because of the constant increase in air fares, the AAAS is attempting to provide the attendants of its 1981 Annual Meeting in Toronto with the lowest air fares available. Thus, the Association has selected ***Conference Air Services (CAS)*** as the official travel coordinator for the Toronto Meeting. *CAS* will endeavor to arrange groups from among those traveling to Toronto from other cities on the same day, thereby offering these travelers group fare savings. *CAS* guarantees booking of airline space at the best rates available, consistent with travelers' requirements, using group and super saver fares whenever possible.

Please take note of the travel information below and the housing information on the preceding page. We urge you to purchase your tickets through *CAS*, and to do so early, since air fares are increasing constantly. Volume ticket purchases will enable *CAS* to form groups at key departure points, thus providing the lowest air fares possible.

SAMPLE ROUNDTRIP AIR FARES TO TORONTO*

City	Coach Fare	Special Group Fare	City	Coach Fare	Special Group Fare
Atlanta	$299.00	$221.00	Los Angeles	$531.00	$348.00
Boston	180.00	126.00	Miami	349.00	299.00
Chicago	174.00	121.00	New York	160.00	112.00
Cleveland	116.00	98.00	New Orleans	355.00	251.00
Dallas	349.00	255.00	St. Louis	241.00	168.00
Denver	345.00	243.00	San Francisco	547.00	387.00
Detroit	121.00	96.00	Seattle	517.00	358.00
Houston	387.00	274.00	Washington, D.C.	180.00	143.00

***Note:** These fares were in effect in July 1980 and are most definitely **subject to change.** Only sample cities have been listed above. Please call *CAS* for applicable airfares and possible group departure schedules from your home area. Persons for whom group flights cannot be arranged will be booked on the best air fare available.

For assistance with travel reservations call toll-free
800-336-0227
9:00 a.m. to 6:00 p.m.—Monday through Friday
(In Virginia call collect 703/528-0114)

If you are interested in a post convention skiing weekend or vacation in the Laurentian Mountains or at Blue Mountain, Ontario call *CAS* at the above toll-free number.

Please type or print! **AAAS AIR TRAVEL RESERVATION FORM** ***Please type or print!***

SEND TICKET(S) TO:

Name _____ Street _____

City _____ State _____ Zip Code _____ Phone No. _____

ADDITIONAL PASSENGERS:

Name _____ Name _____

Please make the following flight reservations to Toronto:

Departing from _____ (Airport) on _____ (Date)

Returning from Toronto on _____ (Date), based on: ☐ 1st Class ☐ Coach ☐ Group Fare*

I prefer the following specific flights, times, stopovers: _____

_____

I will pay for my airfare by: ☐ **Check based on invoice from *CAS*** ☐ **Credit Card****

Name of Card _____ Number _____ Expiration Date _____

Authorization (Signature of Cardholder): _____

*Persons for whom group flights cannot be arranged will be booked on the best air fare available.
**Persons providing credit card information will be fare-protected at the time of booking.

Mail to: AAAS Travel Bureau
c/o CONFERENCE AIR SERVICES
1911 N Ft. Myer Drive
Arlington, Virginia 22209