

SCIENCE ENGINEERING AND DIPLOMACY FELLOWSHIP

Applications Invited

The American Association for the Advancement of Science (AAAS), in cooperation with the Department of State, is seeking applicants for two Science, Engineering, and Diplomacy Fellowships. Fellows will spend 1 year, beginning 1 September 1982, working as staff officers in appropriate Bureaus of the Department of State, for example, the Bureau of Oceans and International Environmental and Scientific Affairs.

Potential assignments may include assisting in developing and negotiating procedures with coastal nations for the conduct of marine scientific research, working on various international aspects of energy and/or nuclear nonproliferation, assisting in monitoring and examining bilateral scientific and technical agreements, performing analysis in politico-military areas such as strategic forces questions, or helping to carry out new Department of State responsibilities for coordinating the international science and technology activities of more than 29 federal agencies.

Prospective fellows must demonstrate exceptional competence in some area of science or engineering, be flexible, have some experience and/or a strong interest in applying knowledge toward the solution of problems in the area of foreign affairs, and have a Ph.D. or equivalent in years of experience.

Salary will be at the GS 11 or GS 12 level depending on education and experience. (For reference, GS 12, step 1 salary level is approximately \$25,000.) A *secret* security clearance process will be initiated by the Department of State after selection. The *secret* level clearance must be obtained before a selectee can begin work in the Department.

Deadline for receipt of application is 19 February 1982. For application details and materials write:

**Science, Engineering, and
Diplomacy Fellows Program
AAAS**

**1776 Massachusetts Ave., NW
Washington, D.C. 20036**

If the nation does not approach air pollution control on this basis, we will risk spending more than is necessary to meet our air quality goals, and limited resources will be diverted from more productive uses. We believe the 1-gram-per-mile automobile NO_x standard will produce no significant benefit and is thus a poor bargain for the consumer.

BETSY ANCKER-JOHNSON
*Environmental Activities Staff,
General Motors Corporation,
General Motors Technical Center,
Warren, Michigan 48090*

Important Distinction

In his Nobel lecture (10 July, p. 172) on studies in histocompatibility, George D. Snell mentions the association between H-2 haplotypes and responsiveness to the induction of cleft palate by glucocorticoids in mice and notes that the susceptible A strain has a relatively high spontaneous rate of the same defect. This is incorrect. The spontaneous malformation that A mice have is cleft lip, which may or may not be accompanied by cleft palate (1), whereas the corticoid-induced defect is cleft palate, and it never occurs together with cleft lip (2). The distinction is important because the conditions are different in numerous respects—etiology, genetics, epidemiology, embryology, morphology, and pathology—in both mice and people (3). I thank Snell for making a complex subject lucid and for providing this favorable occasion for recalling the facts.

H. KALTER
*Children's Hospital Research
Foundation, Cincinnati, Ohio 45229*

References

1. H. Kalter, *Teratology* 20, 213 (1979).
2. F. G. Biddle, *Adv. Stud. Birth Defects* 1, 88 (1979).
3. J. Warkany, *Congenital Malformations* (Year Book, Chicago, 1971); A. Burdi *et al.*, *Teratology* 6, 255 (1972).

The condition to which Kalter refers was originally described by Reed and Snell (1) under the title "Harelip, A new mutation in the house mouse." Kalter is correct in stating that, in the spontaneous form, cleft lip can occur without cleft palate. In the particular strain we were studying, however, a derivative of the Bagg albinos that was not highly inbred, it was observed alone only once in a good many cases. In all the other cases, some degree of cleft palate was present.

With respect to the genetics of the trait, the induced form is clearly dependent on the H-2 genotype (2). Because of

this, I ventured to ask, in connection with the cleft lip locus identified by Reed and Snell, "Could this have been the first identification of H-2?" Subsequently, Gasser *et al.* (3), using congenic lines with H-2 differences on different genetic backgrounds, showed that the spontaneous form, unlike the induced form, is independent of H-2. The speculation implied in my question is thus not substantiated, and the difference between the spontaneous and induced forms stressed by Kalter is further emphasized.

My thanks to Kalter for raising these points.

GEORGE D. SNELL
*Jackson Laboratory,
Bar Harbor, Maine 04609*

References

1. S. C. Reed and G. D. Snell, *Anat. Rec.* 51, 43 (1931).
2. J. J. Bonner and H. C. Slavkin, *Immunogenetics* 2, 213 (1975).
3. D. L. Gasser, L. Mele, D. D. Lees, A. S. Goldman, *Proc. Natl. Acad. Sci. U.S.A.* 78, 3147 (1981).

Education and Industry

D. Allan Bromley (Editorial, 10 July, p. 159) appears to place the burden on industry for correcting a problem brought about by the educational establishment's failing to keep its own house in order. It is not industry that has forced the costs of education up and kept faculty salaries low; it is an interest in research to the exclusion of education at "better" colleges and universities and a sad lack of interest in devoting money or manpower to improving the quality and efficiency of the educational system. For example, how extensive is the commitment of leading "educational" institutions to programs such as the following:

- Taking advantage of the new personal computer technology to provide quality computer-aided instruction for background material so that classroom time across the country can be more effectively used for personal interaction.

- Videotaping the best lecturers in action so that faculty time can be saved and additional dollars made available for graduate or upper-class student assistants.

- Arranging with large corporations to pay the tuition of students selected, say, at the end of their sophomore year who would agree to work for that corporation for some period after graduation.

- Improving utilization of summer vacations or long academic breaks to increase overall financial efficiency.

- Finding ways to safeguard academic

freedom without a tenure system that effectively prevents many schools at all levels from keeping up with changing times.

It should come as no great surprise that many of the most capable teachers are leaving universities, colleges, and secondary schools for more rewarding jobs in industry. Having been compelled to go into industry because of the job market in academic physics and astronomy in the early 1970's, I would not now return to the academic community even though I love teaching. This is partly due to the financial rewards and the more challenging environment of industry and partly due to the lack of any real interest (reflected in hiring, promotions, and salary) on the part of universities in providing the product which is so desperately needed—quality education at a reasonable price. That educational programs are as good as they are in the face of institutional disinterest is a credit to the strong personal commitment of many faculty members. It is largely up to the college and university administrators themselves to find solutions to problems which they have in large part created.

JAMES R. WERTZ

*Defense and Space Systems Group,
TRW Inc., 1 Space Park,
Redondo Beach, California 90278*

Space Shuttle:

Remote Manipulator Arm

The article "Shuttle launch expected soon" (News and Comment, 9 Oct., p. 160) by R. Jeffrey Smith contains a description of the remote manipulator arm that requires elucidation. Smith describes the arm as having three joints. Technically speaking, the arm has six joints: shoulder yaw, shoulder pitch, elbow pitch, wrist pitch, wrist yaw, and wrist roll.

The \$100 million (Canadian dollars) for the development of the remote manipulator arm was contributed entirely by Canada to the U.S. Space Shuttle Program. The National Aeronautics and Space Administration will procure the next three arms for only \$25 million (Canadian dollars) each.

BENJAMIN J. BOURGEOIS

*Houston Astronautics Division,
McDonnell Douglas Technical Services
Company, Inc., 16441 Space Center
Boulevard, Houston, Texas 77058*

Erratum. In the report entitled "Autoimmune encephalomyelitis: Simultaneous identification of T and B cells in the target organ" by U. Traugott *et al.* (11 Dec., p. 1251), the name of the fourth author should have been S. H. Stone.

ENVIRONMENTAL SCIENCE AND ENGINEERING FELLOWSHIPS

Applications Invited

The American Association for the Advancement of Science (AAAS) invites applications for summer environmental science and engineering fellowships. Applications are invited from postdoctoral to mid-career scientists, engineers, and other appropriate professionals. Six such fellowships are available for the summer of 1982. *The deadline for applications is 1 February 1982.* The 10-week appointment begins approximately 1 June 1982 and lasts until approximately 15 August 1982. The awards will be announced prior to 15 April 1982.

The persons selected will work closely with the Environmental Protection Agency's Office of Strategic Assessment and Special Studies (OSASS) and assist it in identifying and assessing the significance of long-range environmental problems and opportunities. The award consists of a taxable stipend of \$550 per week and a nominal additional amount for temporary relocation expenses and travel in connection with the fellowship.

Each awardee will undertake a focused, future-oriented research project of mutual interest to the Fellow and one of EPA's research or program offices and prepare a report at the completion of the summer's work. The selection of projects and research approach will be designed to meet the purpose of the program stated above as well as to fit the individual Fellow's professional goals. Broad areas of research interest within EPA include mobile source air pollution; oxidants, gases, and particles; hazardous municipal wastewater and spills; drinking water; solid hazardous waste; chemical testing and assessment; pesticides; radiation; and energy.

Candidates are expected to be postdoctoral to mid-career professionals, to be critical thinkers, articulate, adaptable, and able to work with a variety of people from different professional backgrounds. Persons may apply from any physical, biological, or behavioral science or any field of engineering or any other relevant professional field.

Persons interested in further information and details on selection criteria and requirements should write to: **Environmental Science and Engineering Fellowship Program, American Association for the Advancement of Science, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036.**

FILMS IN THE SCIENCES

Reviews and Recommendations

Compiled and edited by
Michele M. Newman and
Madelyn A. McRae

This indispensable reference reviews nearly 1,000 films from all areas of science. It provides detailed summaries, evaluations, and complete ordering information for films appropriate to students, teachers, professionals, and general audiences. The reviews are grouped by Dewey decimal category. Subject-title and film distributor indexes also make them easy to use. A must for the librarian, the science teacher, or the curious browser.

182 pages 1980
Cloth: ISBN 87168-304-7 \$14.00

American Association for the Advancement of Science, Dept.
FL3S, 1515 Massachusetts Avenue, N.W., Washington, D.C.
20005