Journal and Science. Eleven articles are in the pipeline, and several have either been published or are scheduled for publication. Both the AAAS and the ABA view this initiative as a promising step toward illuminating the interactions and institutional differences that have emerged as the courts attempt to cope with litigation involving scientific and technical facts and uncertainties.

The Budget

The mix of the Association's finances clearly shows the dominance of our publishing activities. Together, *Science* and *Science 81* account for 91 percent of income and 73 percent of outgo. The Association's expenditure budget has grown, reflecting both general inflation and the launch of *Science 81*. In all likelihood, expenditures will not stop at the expected 1982 level of \$31.2 million, but will grow moderately. The "good news" is that after 2 years of large budget deficits resulting from the launching of *Science 81*, we plan a narrowly balanced budget in 1982, barring adverse consequences to AAAS from the economic recession that materialized in the closing quarter of 1981.

Affiliated Organizations

AAAS Council Meeting, 1982

Catherine Borras

The AAAS Council held its 1982 meeting on 7 January in Washington, D.C., in the Monroe Room of the Washington Hilton Hotel, with 62 of its 86 members in attendance at the morning session and 50 at the afternoon session. President D. Allan Bromley presided.

AAAS Activities, 1981

William D. Carey, executive officer, gave a few highlights from his report of 1981 activities, which appears on pages 1063 to 1069 of this issue, and presented the operating budget for 1982 (page 1066).

Carol L. Rogers, head of communications and membership, announced that AAAS membership had reached an alltime high in 1981, with average membership of almost 137,000 for the year-7500 above the 1980 average. A central element in this growth is the generous support offered by AAAS members who nominate colleagues and by the heads of university science departments who place student posters on their bulletin boards twice a year. Another strong membership year is projected for 1982, but the final results will depend to some extent on what happens to the economy.

Allen L. Hammond, editor of *Science* 82, reported that paid, domestic circulation of that magazine had reached 700,000 (including an average of 40,000 newsstand sales) and that overseas circulation—principally in the Italian lan-26 FEBRUARY 1982

guage edition-is about 100,000. Preliminary negotiations for Japanese and German editions are under way. Renewals are remarkably high, and this year the magazine is expected to operate in the black, despite postage increases and a depressed market. In 1981, the magazine won three national awards for science writing and 11 for design and illustration, and began to move into areas of controversy. Through an arrangement with the National Association of Science Teachers, more than 100,000 reprints of the special section on "The Creationists" in the December issue were sent to high school science teachers throughout the country.

Elections

Election of the following Section secretaries, who took office on 9 January, was announced.

Section A (Mathematics): Lynn Arthur Steen

Section J (Psychology): Bert F. Green Section K (Social, Economic, and Political Sciences): David L. Sills

Section L (History and Philosophy of Science): David L. Hull

Section M (Engineering): W. Edward Lear

Section N (Medical Sciences): Leah M. Lowenstein (reelected)

Results of the 1981 general and electorate elections were published in the 4 December 1981 issue of *Science*, pages 1115 and 1116. As new affiliates, the Council elected the American Association of Blacks in Energy, the National Institute of Science, and the Society for Advancement of Chicanos and Native Americans in Science.

The American Association of Blacks in Energy, which was founded in 1978, represents over 400 professionals in policy and technical areas directly related to the energy industry. It has eight active regions, holds yearly conventions, publishes a bimonthly newsletter, and develops policy positions on a cross section of energy-related issues. Its goal is to ensure "that Black Americans and other minorities gain their fair share of representation and participation in the present and future development and implementation of this Nation's activities involving energy."

The National Institute of Science, founded in 1943, has 405 members. It holds an annual meeting at which 75 to 100 research papers are presented, makes several annual awards to students for outstanding research papers, and publishes the NIS Newsletter three times a year and Transactions annually. Its objectives are "to promote scholarly activities in the sciences, including research and science education, to sponsor meetings and conferences for the scientific community, to provide opportunity for student participation on regional and national levels, to provide opportunity for interchange and dissemination of scientific information."

The Society for Advancement of Chicanos and Native Americans in Science, which has some 150 members, was incorporated in 1974. It publishes *SAC-NAS News*, a quarterly, and symposium and conference proceedings as conditions permit. Its purpose is "to increase the participation of Native Americans

The author is administrative assistant to the Executive Officer, American Association for the Advancement of Science.

and Chicanos in the sciences by: (1) helping to increase the representation of these two minority groups in science and (2) seeking better opportunities for these minority scientists through enhanced participation in all facets of scientific endeavor including research, panel and program review, consulting, and administration, in academia, federal agencies, and private enterprise."

Fellowship

As Fellows of the Association, the Council elected 440 members who had been proposed for that honor by the Section Committees of the 21 AAAS Sections, by groups of three Fellows, and by the Executive Officer. A list of their names accompanies this report. A call for 1982 nominations was published in the 6 November 1981 issue of Science, pages 649 and 650.

Effect of Federal Budget Policies on R&D

Willis H. Shapley, public policy consultant, gave a briefing based on the AAAS report, "Congressional Action on Research and Development in the FY 1982 Budget," which had come off the press on 31 December and of which he. Albert H. Teich, and Jill P. Weinberg are coauthors. Mr. Shapley said that because the 1982 budget is not yet closed and is subject to significant uncertainties, including reductions not yet allocated and corrections for inflation, its full impact on research and development is difficult to assess at this time. Total appropriations for R&D are estimated at \$40 billion, 5.4 percent below the March budget and about 2.2 percent above the recommendations in the September budget. Even with these cuts, estimated funding for defense R&D over the period FY 1980-FY 1982 permits real growth of

22.2 percent. Estimated allocations for nondefense R&D, on the other hand, represent a real decline of 16.1 percent over the same 2-year period. Moreover, the increase in the one is not sufficient to take up the slack in the other. Information about the impact of the 1982 budget on specific agencies is given in the printed report, single copies of which are available without charge from the AAAS Office of Public Sector Programs; the cost of additional copies is \$2 each.

AAAS Initiative in Science Education

Dr. Bromley reminded the Council of the AAAS commitment, announced last vear in Toronto, to devote an appreciable amount of its efforts and resources to the improvement of science and math instruction in the nation's schools.

James Rutherford, chief education officer, noted that, with the federal govern-

AAAS Members Elected as Fellows, 7 January 1982

Douglas E. Abbott Ralph N. Adams Irving Adler Edward L. Aiello Frederick J. Almgren, Jr. Daniel Alpert Norman Lewis Anderson, Jr. George E. Boyd Odin W. Anderson William G. Anlyan Joel A. Appelbaum Richard F. Arens Willis William Armistead Roy G. Arnold Edward R. Arquilla Mary Ellen Avery Louis V. Avioli Daniel L. Azarnoff Pietro Badia Walter S. Baer John D. Baldeschwieler Morton L. Barad A. Clifford Barger Clarence F. Barnett Jonathan Baron Jeremiah A. Barondess Charles A. Barraclough Bodo Bartocha Robert Bau Leo R. Beard Jesse L. Beauchamp David Z. Beckler Jack Belzer Philip L. Bereano John C. Beresford Stanley A. Berger Elemer Bernath Robert M. Berne Daniel S. Bernstein Fred W. Billmeyer Judith Blake Duncan Blanchard John Rogers Blinks

Manuel Blum Morton D. Bogdonoff Otto Herbert Bohnenberger Stuart Bondurant Joseph Bordogna Truman A. Botts James C. Bradbury Howard Brenner Lester Breslow Clark E. Bricker Neal S. Bricker Herbert S. Bridge E. Margaret Burbidge Ernest S. Burch, Jr. Herman Buschke Ewald W. Busse Rodger W. Bybee Nina Byers George F. Cahill, Jr. Daniel Callahan Gloria Vincz Callard Egidio J. Capaldi Joseph F. Caponio Peter A. Carruthers Anne C. Carter Marjorie C. Caserio Jack E. Cermak Robert A. Chahine Francis P. Chinard Rita Kathleen Chow Luther P. Christman Aaron V. Cicourel John L. Cisne John Clarke William A. Cobban Donald Coles Allan H. Conney James Conti John A. D. Cooper Lvnn A. Cooper Fernando Jose Corbato

Mary E. Corning Stephen C. Cowin Susan Crawford Ralph Shelton Crawshaw Roy G. Creech William H. Crosby James E. Dahlberg Kenneth A. Dahlberg Roy G. d'Andrade William H. Danforth Joseph H. Danks Joseph M. Dasbach Florence N. David Leverett Davis, Jr. Martin Davis Melvin S. Day Henry J. Degenkolb Paul Demeny John Manley Dennison John Diebold Russell J. Donnelly Todd Dupont Merlin K. DuVal W. Wesley Eckenfelder, Jr. Lawrence Goldman Robert B. Edgerton Charles Edwards Richard H. Egdahl Henry Ehrenreich Allan Anton Ekdale George L. Engel Christie G. Enke Thelma Estrin James E. Faller Alvan R. Feinstein John D. Ferry Samuel Fillenbaum Alfred P. Fishman Rex J. Fleming Robert C. Fletcher Paul A. Fleury William H. Foege Henry M. Foley

Christopher C. Fordham, III Suzanne Hanchett George K. Fraenkel Daniel X. Freedman Phyllis S. Freier Norbert Freinkel Elisabeth Gantt Robert E. Garrison Paul G. Gassman Theodore H. Geballe Jacob W. Getzels Riccardo Giacconi Hyatt M. Gibbs Eloise R. Giblett Gerhard Giebisch Franklin A. Gifford, Jr. John Gille Paul W. Gilles Walter L. Gillespie Jean Berko Gleason William Goffman Irving H. Goldberg Arthur S. Goldberger Allen Marshall Goldman Eugene Goldwasser Joan Wright Goodman Mildred Gordon Carl W. Gottschalk Paul B. Green Donald R. Griffin Belver C. Griffith John C. Griffiths H. Mark Grove Branko Grünbaum Samuel B. Guze Ward J. Haas Nicholas Hahon Carl W. Hall William W. Hambleton David A. Hamburg Howard B. Hamilton Allen L. Hammond

Robert E. Handschumacher Bruce B. Hanshaw William Happer Katherine S. Harris Harold E. Harrison James West Haviland M. Alfred Havnes Robert L. Heilbroner Murray Heimberg Kenneth R. Heimlich Paul Heller Max Hellmann Catherine Henley Ernest M. Henley Seymour W. Herwald Howard H. Hiatt Harry W. Hind Jules Hirsch Peter V. Hobbs Alan Frederick Hofmann Seymour Holtzman Edward Watson Hook Irving Louis Horowitz Arthur S. House Ann C. Howe Nancy Howell Robert W. Howell Vernon W. Hughes Sidney H. Ingbar Aldon H. Jensen Carl J. Johnson Jean E. Johnson Robert L. Johnson Thomas Johnson Joiner Dale W. Jorgenson Charles Kadushin James S. Kane Stanley A. Kaplan Michael Katz Lloyd Kaufman Herbert B. Keller

ment having virtually withdrawn its support of science and math education, the AAAS role in this area has become greatly magnified. The emphasis will be on bringing quality back to instruction at the junior and senior high school level, where the battle is being lost, and on promoting the general public understanding of science, rather than on producing scientists and engineers.

New activities will be directed toward helping to strengthen the educational system in the years immediately ahead by bringing imaginative and up-to-date resources directly to the teachers. AAAS will start by exploiting its existing resources, primarily *Science 82*, a magazine that presents science as it is happening. AAAS Teacher Notes, being prepared to accompany the magazine each month, will suggest student activities related to one or more of the major articles. Another possibility is modification of *Science Books and Films*, a AAAS journal that reviews science and mathematics books and films for students at all levels, so that it will serve teachers as well as librarians. Efforts will be made to draw more students and teachers to annual meetings of the AAAS, of the regional divisions, and of the affiliated organizations.

Also under way, with support from Phillips Petroleum Company, is "Challenge of the Unknown," a major project to attack the inadequacy of math instruction in the middle grades by teaching students to understand mathematical concepts, to think mathematically, and to use mathematics for practical purposes. Materials are to be produced by J. C. Crimmins & Co., Inc., under the terms of the grant.

Other proposed activities are the formation of a consortium of affiliated societies to join with AAAS in working toward the improvement of science and math education, and the convening of science education policy conferences. The first such conference would investigate a variety of aspects of the decline of study of the physical sciences in the schools of the United States.

Bylaw Amendments

T. Neil Davis, executive secretary of the AAAS Alaska Division, reported that the Division's membership, by a large majority, had voted to change the Division's name to "Arctic Division" to indicate better its geographic extent and to promote greater participation by Canadians in Division affairs. The Council voted to approve enabling amendments to the Division's bylaws.

AAAS Bylaw Articles I, III, IV and XI were amended by the Council to recognize formally the composition and function of the "Nominating Committees" of the Section Committees; to change their

John L. Kelley John D. Kemper Johannes H. B. Kemperman George A. Keyworth, II Kenneth K. Kidd Gordon S. Kino Robion C. Kirby Murray S. Klamkin John R. Klauder H. Douglas Klemme Edward B. Knipling Herbert R. Koller Robert M. Kosanke Richard M. Krause Julius R. Krevans Klaus Krippendorff Joseph B. Kruskal A. Krishna Kumaran Donald H. Kupfer Henry E. Kyburg, Jr. William Wilson Lambert Bernard Robert Landau Hans H. Landsberg Arthur Landy William W. Lang Donald N. Langenberg Joseph Larner Joel S. Lawson, Jr. Robert B. Leachman Alexander Leaf Joshua Lederberg David M. Lee Irving Lefkowitz Norman G. Levinsky Abraham M. Lilienfeld Shin Lin Gillian Lindt Bernard J. Liska Benjamin Y. H. Liu Carl F. Long Ruth Watson Lubic Edith H. Luchins Arien Mack Anthony P. Mahowald Steven F. Maier Robert W. Mann

Paul A. Marks George M. Martin Walter E. Massey Frank R. Mayo M. Gabrielle Maze Helen M. McCammon Daniel J. McCarty Alan McClelland Harden M. McConnell Elizabeth McFall William D. McHugh Douglas L. Medin Jane Menken Thomas Robert Mertens Walter E. Meyerhof Claude J. Migeon John Schoff Millis Sidney Millman Charles W. Misner S. K. Mitra Nell I. Mondy G. Edward Montgomery James M. Moran, Jr. Cathleen Synge Morawetz Lloyd N. Morrisett Irving Morrissett Lincoln E. Moses Arno G. Motulsky R. E. Munn John W. Murdock Franklin D. Murphy John F. Murray Joseph James Murray, Jr. Yoichiro Nambu Juan M. Navia Larry A. Nelson Russell A. Nelson Leo R. Newfarmer Tetsuji Nishikawa David L. Nius Robert Novick James F. O'Connell William H. Oldendorf Jack H. Oppenheimer Raymond L. Orbach Frank Aram Oski

Elliott F. Osserman Thomas M. Ostrom Dhun B. Patel Lee D. Peachev Robert M. Pearlstein Russel A. Peppers Vernon G. Perry Klaus Peters Sheila M. Pfafflin Winfred M. Phillips Joram Piatigorsky Elliot S. Pierce Milton Pikarsky Francis M. Pipkin David B. Pisoni Henry C. Pitot, III Ruth B. Pitt Donald L. Plucknett Frederik Pohl James Pollack Frank D. Popp Hans Popper Mary C. Potter Robert G. Potter, Jr. John M. Prausnitz Carroll W. Pursell, Jr. Paul A. Putnam Edward James Quilligan Mitchell T. Rabkin Judith A. Ramaley Oscar D. Ratnoff John R. Rice Frederic M. Richards Frederick C. Robbins Hugh G. Robinson Leon E. Rosenberg Herman Rubin Ruth Sager Philip Salapatek I. Richard Savage Ernest Welton Saward John F. Schafer Andrew V. Schally Robert Tod Schimke Rudi Schmid Richard L. Schowen

Martin P. Schreibman Douglas W. Schwartz Sylvia Scribner Nevin S. Scrimshaw A. Richard Seebass Lee A. Segel Henry A. Selby John Wendell Severinghaus Cecil G. Sheps Jesse H. Shera John F. Sherman David A. Shirley Mary La Salle Shoaf Victor M. Showalter Anthony E. Siegman Robert E. Sievers Charles J. Sih David L. Sills Eric C. Silverberg Leon Singer S. Jonathan Singer Edward Aaron Smuckler Richard C. Snyder Solomon H. Snyder Arthur A. Socolow David H. Solomon Gabor A. Somorjai E. John Staba John A. Starkweather Lynn A. Steen George Louis Steffens Arthur P. Stern James B. Stoltman James H. Street David H. P. Streeten Robert Stuckenrath Clarence G. Stuckwisch Albert J. Stunkard George W. Sutton Kendall L. Svendsen Lawrence E. Swabb, Jr. Igor Tamm Armen H. Tashjian, Jr. Carl Ernest Taylor S. Marsh Tennev Audrey A. Terras

Robert D. Terry Paul W. Thayer Carl E. Thoresen Robert I. Tilling Daniel C. Tosteson Sol Triebwasser Leon Trilling Virginia Louise Trimble Christy G. Turner, II George E. Uhlenbeck William Upthegrove Peter R. Vail Robert L. Van Citters T. Nejat Veziroglu Ivan M. Viest Charles J. Vitaliano Heinz Von Foerster Mary L. Voorhess Virginia Walbot John E. Warme James V. Warren Marx W. Wartofsky Louis R. Wasserman Kenneth N. Weaver Irwin M. Weiner Carol H. Weiss Sherman Morton Weissman Gerald Weissmann Joseph Weneser Gunther K. Wertheim Stanford Wessler Virginia Peeples White Grant R. Wilkinson Martha E. Williams Norman Dale Williams T. Franklin Williams Marjorie P. Wilson Fred H. Wilt Albert I. Winegrad David M. Young, Jr. Jack P. Young Vernon L. Youngs Marshall C. Yovits Arnold Zellner John Michael Ziman Leonard Zusne

name to "Steering Groups" to avoid confusion with the Nominating Committees of the Electorates, which have a different function; and to give them the new responsibility of taking action on any policy matters that may arise between meetings of the Section Committees. Continuing duties are to select nominees for fellowship, for the office of Section secretary, and, in the event of vacancies, for other Section positions. Each Steering Group is composed of the Section chairperson, retiring chairperson, chairperson-elect, secretary, and four members-at-large.

Resolutions

Six resolutions were adopted by the Council, as follows:

1) The Catastrophe of Thermonuclear War, submitted by AAAS Section W (Atmospheric and Hydrospheric Sciences):

Whereas there is worldwide increasing anxiety of the possibility of large-scale nuclear warfare, and

Whereas recent studies have shown that nuclear warfare would inevitably cause death, disease, and human suffering of epidemic proportion without any adequate medical intervention possible, and

Whereas severe trauma to biological and ecological systems would be extended far beyond the immediate bomb impact areas by virtue of transport of lethal radioactive debris by air and water, and

Whereas the only effective impediment to such an impending epidemic is the prevention of nuclear warfare,

Therefore be it resolved that the Council of the AAAS supports national and international efforts directed toward the prevention of nuclear warfare, and

Be it further resolved that the Council of the AAAS supports Concurrent Resolution 44 which was recently submitted to the United States Senate by Senate Majority Leader Howard Baker of Tennessee. That resolution expresses the conviction of Congress "that the United States government should not base its policies or weapons programs on the belief that the United States can limit, survive, or win a nuclear war."

Be it further resolved that a symposium be held at the next Annual Meeting on the general subject of "The Effects of Thermonuclear War."

2) Forced Teaching of Creationist Beliefs in Public School Science Education (a composite of resolutions drafted by D. Allan Bromley, Edward M. Brunner, Anna J. Harrison, and Glynn Isaac), submitted by the Board of Directors as a joint resolution of the Board and Council:

Whereas it is the responsibility of the American Association for the Advancement of Science to preserve the integrity of science, and

Whereas science is a systematic method of investigation based on continuous experimentation, observation, and measurement leading to evolving explanations of natural phenomena, explanations which are continuously open to further testing, and

Whereas evolution fully satisfies these criteria, irrespective of remaining debates concerning its detailed mechanisms, and

Whereas the Association respects the right of people to hold diverse beliefs about creation that do not come within the definitions of science, and

Whereas Creationist groups are imposing beliefs disguised as science upon teachers and students to the detriment and distortion of public education in the United States,

Therefore be it resolved that because "Creationist Science" has no scientific validity it should not be taught as science, and further, that the AAAS views legislation requiring "Creationist Science" to be taught in public schools as a real and present threat to the integrity of education and the teaching of science, and

Be it further resolved that the AAAS urges citizens, educational authorities, and legislators to oppose the compulsory inclusion in science education curricula of beliefs that are not amenable to the process of scrutiny, testing, and revision that is indispensable to science.

3) *Endangered Species Act*, submitted by AAAS Section G (Biological Sciences):

Whereas the authorization for appropriations under the Endangered Species Act of 1973 expires on September 30, 1982, and

Whereas the Act is an important authority for the protection of endangered and threatened plants and animals,

Therefore be it resolved that the American Association for the Advancement of Science urges the Administration and the Congress to reenact the Endangered Species Act, preserving intact its key features.

4) Denial of Scientific Basis for Statutory Finding on Beginning of Human Life, submitted by Mary L. Moller, Dorothy Skinner, and Ethel A. Tsutsui:

Whereas the recently submitted U.S. Senate Bill 158 states that "the Congress finds that present day scientific evidence indicates a significant likelihood that actual human life exists from conception," and

Whereas the statement on the interpretation of scientific evidence, as contained in this bill, misrepresents the ability of science to define the beginning of personhood, and

Whereas science cannot define the beginning of personhood, as is stated in S. 158, Therefore be it resolved that the AAAS expresses great concern that the Congress should attempt to use science to support a position which is not in the competency of science to affirm or deny.

5) AAAS Endorsement of Immediate Ratification of the Genocide Treaty, submitted by the AAAS Committee on Scientific Freedom and Responsibility:

Whereas American scientists are becoming more attentive to the plights of scientists and others who are victims of human rights violations and are becoming more aware of the importance of international standards to address such violations, and

Whereas the AAAS Board of Directors voted on December 7, 1979, to support U.S. ratification of the United Nations Convention on the Prevention and Punishment of the Crime of Genocide (the Genocide Treaty), and

Whereas the Board urged the U.S. Senate to give its advice and consent to ratification of this important instrument for enhancing the human rights of all people, and

Whereas the continued lack of U.S. ratification of the Genocide Treaty contributes to the political isolation of the United States from the international community of nations which have supported the Treaty and detracts from our nation's formal commitment to the support of international standards for resolving human rights violations,

Therefore be it resolved that the AAAS Council affirms the 1979 action by the AAAS Board of Directors and urges immediate Senate ratification of the Genocide Treaty, and

Be it further resolved that the AAAS Council urges the President of the United States to support ratification of the Genocide Treaty, and

Be it further resolved that the AAAS Council encourages the societies and academies of science affiliated with AAAS to lend their support to U.S. ratification of the Genocide Treaty.

6) National Security and Secrecy, submitted by the AAAS Committee on Scientific Freedom and Responsibility:

Whereas freedom and national security are best preserved by adherence to the principles of openness that are a fundamental tenet of both American society and of the scientific process,

Be it resolved that the American Association for the Advancement of Science opposes governmental restrictions on the dissemination, exchange, or availability of unclassified knowledge.

The Council also approved a motion calling on the AAAS President to appoint an *ad hoc* committee to broaden and improve the participation of the Sections in the selection and organization of programs for the Annual Meeting.