

History of Science Society

NEWSLETTER

Volume VI, Number 4

October 1977

The Newsletter of the History of Science Society is published in January, April, July, and October, with supplements as necessary containing job information. Regular issues are sent free to individual members. Supplements are sent automatically to about ninety history of science departments and individuals, and will be sent to others on request. Non-members may subscribe to the Newsletter for \$5.00 per year.

IMPORTANT NOTE: Effective January 1, 1978, the Secretary of the History of Science Society will be Dr. Jane M. Oppenheimer, Biology Building, Bryn Mawr College, Bryn Mawr, Pennsylvania 19010. Please send all future news items, written as concisely as possible, to her. The deadline for receipt of news for the January issue is December 10, and **THIS WILL BE THE ONLY CALL FOR NEWS THAT WILL BE ISSUED.**

IDA WALERSTEIN SCHUMAN

The History of Science Society has learned with regret of the death of Ida Walerstein Schuman on June 27 in New York City at the age of 65. Since 1955 the generosity of Mrs. Schuman and of her late husband Henry Schuman has made possible the Schuman Prize awarded annually by the HSS for the best essay in the history of science by a graduate student. This year's Schuman Prize will be awarded by the HSS as a memorial to Mrs. Schuman.

As reported in the A B Bookman's Weekly of September 12, 1977, Mrs. Schuman was a rare book dealer, specializing in the history of science and medicine, for many years with her late husband, and, since his death in 1962, proprietor of Henry Schuman, Ltd.

She was born on May 15, 1912, in St. Louis, Mo. Her parents, who had emigrated around the turn of the century, later settled in Detroit where Ida met Henry Schuman. They were married in 1930. Henry, Jr., was born in 1931, and Daniel was born in 1940.

After an unsuccessful venture in the ball-bearing business, Henry Schuman, who had been a collector, went into the antiquarian book business in 1930, using his own collection as a nucleus and, at first, specializing in first editions and fine press books. After successfully helping to build a collection in the history of medicine for a noted physician-bibliophile, Schuman began to specialize in that field. The Schumans moved to New York City in 1939 and Ida began her involvement in the business in the 1940s. During the early 1950s, when Henry devoted most of his time to scholarly publishing, Ida continued the rare book business. In 1953, the Schuman imprint was sold and survives as Abelard-Schuman. Both Ida and Henry Schuman continued the rare book business together, and after Henry Schuman's death in 1962, Ida carried on alone. The bulk of the stock has been purchased by Argosy Book Store.

A memorial fund for Ida Schuman has been established at the Manhattan School of Music, 120 Claremont Ave., New York, N. Y. 10027, c/o The Dean.

ARNOLD THACKRAY NEW EDITOR OF ISIS

Arnold Thackray, Department of History and Sociology of Science, University of Pennsylvania, Philadelphia 19174, has recently been appointed to succeed Robert P. Multhauf as Editor of ISIS at the conclusion of Dr. Multhauf's term. Professor Thackray has just completed a seven-year term as chairman of his department, and will spend the 1977-1978 academic year on research leave as a visiting fellow of All Souls College, Oxford, England.

REVISED NSF RESEARCH PROPOSAL DEADLINES

NSF Research proposals may be submitted anytime. Processing requires four to six months. To allow time for adequate planning, proposals should arrive no later than November 15 for funds needed in June-July; no later than February 15 for funds needed in September-October; and no later than August 15 for funds needed in January-February. These deadlines are different from those reported in the last Newsletter. For further information about the activities of the History and Philosophy of Science Program, write to Dr. Ronald J. Overmann, Assistant Program Director, History and Philosophy of Science, Division of Social Sciences, National Science Foundation, Washington, D.C. 20550 (phone 202-632-4182).

NEW MEMBERS OF NSF ADVISORY PANEL FOR HISTORY AND PHILOSOPHY OF SCIENCE

Dr. Ronald Overmann, Assistant Program Director, History and Philosophy of Science, National Science Foundation, has announced that the NSF Advisory Panel for History and Philosophy of Science for the 1977-1978 academic year will consist of Joe Burchfield (Northern Illinois University), Ruth Schwartz Cowan (SUNY, Stony Brook), Nathan Reingold (Smithsonian Institution), Merilee Salmon (University of Arizona), Howard Stein (Columbia University), and Linda Wessels (Indiana University).

SPECIAL ISSUE OF PHILOSOPHY OF SCIENCE ON PHILOSOPHY OF PSYCHOLOGY

Kenneth F. Schaffner, Editor-in-Chief of Philosophy of Science, announces a special issue of the journal, tentatively scheduled for December 1978, to be devoted to issues concerning the philosophy of psychology. This theme will be interpreted broadly to include, for example, evaluations of experimental paradigms, issues in psycho-linguistics, philosophical discussions of statistical techniques, problems of internal representation, psychoanalytic issues, theoretical treatments of perception, motivation, or behavior, as well as psychologically oriented aspects of epistemological or metaphysical problems. Contributors should follow standard instructions for submissions printed inside the back cover of the June 1977 issue of the journal. Essays must be received no later than May 1, 1978, to permit time for review. Manuscripts should be sent to Professor Kenneth F. Schaffner, 314 Loeffler Building, Department of History and Philosophy of Science, University of Pittsburgh, Pittsburgh 15260.

SCAIFE FOUNDATION GRANT TO UNIVERSITY OF PITTSBURGH CENTER FOR PHILOSOPHY OF SCIENCE

Rachel Laudan, Assistant Director, Center for Philosophy of Science, University of Pittsburgh, Pittsburgh 15260, has announced that the Scaife Foundation has recently awarded a three-year grant in the amount of \$135,000 to the Center. The grant will be used to sponsor workshops, aid faculty research, support visiting scholars, and extend the other activities of the Center.

NATIONAL ENDOWMENT FOR THE HUMANITIES ESTABLISHES NEW PROGRAM
TO SUPPORT PUBLICATION COSTS OF HUMANITIES TEXTS

The National Endowment for the Humanities, for the first time, will support the publication costs of some humanities texts. Announcement of the new program was made by Robert J. Kingston, Acting Chairman of the Humanities Endowment. This departure from past policy will allow both commercial and non-profit presses to apply for assistance towards the

(Continued on page 6)

HISTORY OF SCIENCE SOCIETY 1977 BALLOT

The HSS 1977 Ballot, compiled by the 1977 Nominating Committee under the chairpersonship of Professor Ruth Schwartz Cowan, is given below. Please return this Ballot immediately, but not later than December 15, 1977, to Dr. Roger H. Stuewer, School of Physics and Astronomy, University of Minnesota, Minneapolis 55455, by simply folding and mailing this page. The results will be announced at the 1977 Annual Meeting and published in the January Newsletter. The biographical information has been excerpted from the 1977 Directory of Members and is in no case complete.

I. COUNCIL, TERM EXPIRING DECEMBER 31, 1980. (Vote for 5 of the 10 below.)

- ___ Toby Anita Appel, National Portrait Gallery, Washington, D.C. Princeton Ph.D. 1975. 19c biology and medicine.
- ___ Joe D. Burchfield, Department of History, Northern Illinois University. Johns Hopkins Ph.D. 1969. 19-20c geology and physics.
- ___ Audrey B. Davis, Division of Medical Sciences, Smithsonian Institution. Johns Hopkins Ph.D. 1969. 17-20c biology, medicine, and chemistry.
- ___ Joseph S. Fruton, Department of Biochemistry, Yale University. Columbia Ph.D. 1934. 19-20c chemistry and biology.
- ___ Mary Jo Nye, Department of History of Science, University of Oklahoma. Wisconsin Ph.D. 1970. 17-20c science.
- ___ Paul D. Sherman, History of Science, Pace University. London Ph.D. 1972. History of science in teaching.
- ___ Nancy Stepan, Department of History, Yale University. U.C.L.A. Ph.D. 1971. Science in Latin America.
- ___ Roger H. Stuewer, School of Physics and Astronomy, University of Minnesota. Wisconsin Ph.D. 1968. 19-20c physics.
- ___ Joan Warnow, Center for History of Physics, American Institute of Physics. 20c physics archives.
- ___ Harry Woolf, Institute for Advanced Study, Princeton. Cornell Ph.D. 1955. Physical sciences.

II. NOMINATING COMMITTEE, TERM EXPIRING DECEMBER 31, 1978.

A. Council Members. (Vote for 3 of the 6 below.)

- ___ Joan Bromberg, U.S. Energy Resources and Development Agency, Washington, D.C. Wisconsin Ph.D. 1967. 19-20c physics.
- ___ Sandra S. Herbert, Department of History, University of Maryland-Baltimore County. Brandeis Ph.D. 1968. 19c geology and biology.
- ___ Thomas P. Hughes, Department of History and Sociology of Science, University of Pennsylvania. Ph.D. 1953. Technology since 1750.
- ___ Camille Limoges, Institute of History and Sociopolitics of Science, University of Montreal. Paris doctorate. 19-20c biology.
- ___ A. I. Sabra, Department of History of Science, Harvard University. London Ph.D. 1955. Islamic science and philosophy.
- ___ Alan E. Shapiro, School of Physics and Astronomy, University of Minnesota. Yale Ph.D. 1970. 17c scientific revolution.

B. Non-Council Members. (Vote for 2 of the 4 below.)

- ___ Frederick B. Churchill, Department of History and Philosophy of Science, Indiana University. Harvard Ph.D. 1967. 19-20c biology and medicine.

____ Caroline Hannaway, Institute for the History of Medicine, Johns Hopkins University. Johns Hopkins Ph.D. 1974. 18c medicine.

____ Carolyn Iltis, Natural Sciences Interdisciplinary Program, University of San Francisco. Wisconsin Ph.D. 1967. 17c scientific revolution.

____ William Provine, Department of History, Cornell University, Chicago Ph.D. 19-20c biology.

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Dr. Roger H. Stuewer
School of Physics and Astronomy
University of Minnesota
Minneapolis, Minnesota 55455

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1977 ANNUAL MEETING OF THE HSS IN DALLAS (DECEMBER 28-30)

The 1977 Annual Meeting of the HSS will be held with the American Historical Association in Dallas, Texas, December 28-30, in the Hotel Adolphus. The Local Arrangements Chairman is Professor Claude Albritton, Dean of Libraries, Southern Methodist University, Dallas, Texas 75275. The Program Chairman is Professor Frank N. Egerton, Division of Social Sciences, University of Wisconsin-Parkside, Kenosha, Wisconsin 53140. Pre-registration and hotel reservations forms are provided below, and the Program is given beginning on page 7. Travelers arriving at the Dallas/Fort Worth International Airport should allow about one and one-half hours between time of deplaning and time of arrival at the Hotel Adolphus. It is important that individuals expecting to arrive at the hotel later than 6:00 P.M. indicate on the hotel reservation form whether or not theirs is a guaranteed reservation. There will also be materials at the registration desk describing plays, city tours, and other entertainment in Dallas; people will be available to assist registrants in making reservations for these activities.

PRE-REGISTRATION FORM
1977 HSS ANNUAL MEETING, DALLAS, TEXAS (DECEMBER 28-30)

Name _____
Affiliation _____
or
Mailing Address _____

_____ Enclosed is \$5.00 registration fee (students \$2.00).

_____ Also enclosed, \$6.60 for HSS luncheon on Thursday, December 29.

Checks should be made out to the History of Science Society and mailed together with this form to: Isis Editorial Office, Smithsonian Institution, Washington, D.C. 20560.

HOTEL RESERVATION FORM
1977 HSS ANNUAL MEETING, DALLAS, TEXAS (DECEMBER 28-30)

As soon as possible please send the completed form to: Reservationist, Hotel Adolphus, Box 2340, 1321 Commerce Street, Dallas, Texas 75221.

Name _____
(Last) (First) (Middle Initial)
Address _____
(Street) (City) (State) (Zip code)

I wish to reserve: 1 double bed, 1 person @ ___ \$19.00 ___ \$20.00 ___ \$21.00
1 double bed, 2 persons @ ___ \$25.00 ___ \$26.00 ___ \$27.00
2 single beds, 2 persons @ ___ \$25.00 ___ \$26.00 ___ \$27.00

for the following nights: Dec. 27 ___ Dec. 28 ___ Dec. 29 ___ Dec. 30 ___

Arrival time _____ Departure time _____

FOR TRAVELERS ARRIVING AFTER 6:00 P.M.: Is this a guaranteed reservation? ___ Yes ___ No

(NEH, continued from p. 2)

publication of major humanities texts when the initial cash-flow is insufficient to allow publication presently to be considered, or where it seems evident that intolerable losses would otherwise be suffered. Applications are being accepted for the publication of research materials which have resulted directly from NEH grants, after such materials have been declared acceptable to a commercial or university press by its normal standards of review. The first proposal deadline was July 1, 1977; another deadline of December 1, 1977, has also been established. For further information please contact Publications Program, Division of Research Grants, MS 350, National Endowment for the Humanities, 806 15th Street, NW, Washington, D.C. 20506 (phone 202-382-5857).

Isis Editorial Office
Smithsonian Institution
Washington, D.C. 20560

Reservationist
Hotel Adolphus
Box 2340
1321 Commerce Street
Dallas, Texas 75221

1977 HSS ANNUAL MEETING PROGRAM

All events, unless otherwise noted, will be held in the Hotel Adolphus, 1321 Commerce Street, Dallas, Texas 75221.

Wednesday, December 28

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| <p>9:00 AM, Naturalists Survey the Great West
Chair: Harold Burstyn (U.S. Geological Survey)
Michael Broadhead (Nevada, Reno): "An Army Naturalist Explores the West: Elliott Coues and the Popularization of Natural Science in the 19th Century"
W. R. Waiser (Our Lady of the Prairies Foundation): "Botany in the Nation Building Process: John Macoun's Assessment of the Canadian Western Interior, 1872-82"
Kier Sterling (Pace): "Planning a Major Resource Museum for Western Fauna: the Partnership of Annie M. Alexander and Joseph Grinnel, 1908-39"
Commentator: Dean C. Allard (U.S. Office of Naval History)</p> | <p>9:00 AM, Selected Topics in the Physical Sciences, 1890-1926
Chair: Roger H. Stuewer (Minnesota)
Robert J. Deltete (Yale): "Planck and Boltzmann"
Paul A. Hanle (U.S. Air and Space Museum): "The Schrödinger-Einstein Correspondence and the Invention of Wave Mechanics"
E. Robert Paul (Dickinson College): "Early 20th Century Steller Theory: The Case for Seeliger and Kapteyn"</p> | <p>9:00 AM, Works in Progress (Biology)
Chair: Phillip R. Sloan (Notre Dame)
Charles Gasteyer (Lyme, Conn.): "Experimental Psychology in Ancient India"
Richard Y. Meier (Chicago): "'Sympathy' in the Neurophysiology of Thomas Willis"
Warren Andrew (Indiana): "An Anatomist Looks at the 'Treatise of Man' of René Descartes"
Pierce C. Mullen (Montana, Bozeman): "The Idea of Descent in German <u>Naturphilosophie</u>"
William R. Woodward (New Hampshire): "R. Hermann Lotze: From <u>Naturphilosophie</u> to a Mechanical Science of Life, 1817-57"
Kathleen G. Dugan (Kansas, Lawrence): "The Paradoxical <u>Platypus</u>"
Philip F. Rehbock (Hawaii): "The Transformation of Early 19th-Century Natural History in Britain"
Sally Gregory Kohlstedt (Syracuse): "Henry A. Ward and the Natural History Museum Movement"
Ralph W. Dexter (Kent State): "The Putnam-Allison Dispute on the Origin of Man"
Peter A. Bowman (Science Inc., Galveston): "Texas Policy Regarding Evolution in Biology Texts"</p> |
| <p>1:30 PM, HSS BUSINESS MEETING</p> | | |
| <p>2:45 PM, Science and the Management of Resources
Chair: Harold Pinkett (National Archives)
Thomas R. Dunlap (Virginia Polytechnic Institute): "Ecology and Forestry: the Case of the Gypsy Moth"</p> | <p>2:45 PM, Physical Research in Non-University Laboratories in the 20th Century
Chair: Richard Hewlett (U.S. Department of Energy)
David Allison (U.S. Naval Research Laboratory): "Uniting Administrative and Technical History: the</p> | <p>2:45 PM, Historical Approaches to Women in Science
Chair: Deborah Warner (Smithsonian)
Donna Haraway (Johns Hopkins): "The Impiral, Territorial, Naked Ape vs. the Friendly, Sharing, Food-gathering One"</p> |

Wednesday, December 28, 2:45 PM (cont.)

Richard A. Overfield (Nebraska, Omaha): "Trees for the Great Plains: Charles F. Bessey and Forestry" Commentators: Richard A. Andrews (Michigan, Ann Arbor); John Ross (Georgia-Pacific Corp.)	Case of the Development of Radar at the U.S. Naval Laboratory" Lillian Hoddeson (Illinois, Urbana): "Multidisciplinary Mission-Oriented Research in Postwar America: Bell Telephone Laboratories' Solid-State Physics Program, 1945-48" George Wise (General Electric Co., Schenectady): "The Science- Technology Spiral: Inter- action of Research and Its Uses at the General Electric Company" Commentator: Arthur L. Norberg (California, Berkeley)	Larry Buccarelli (Massachusetts Institute of Technology): "The Life and Times of the 19th Century French Mathematician, Sophie Germain" Margaret Rossiter (California, Berkeley): "The Female Research Associate, 1920-40" Commentator: Joan Burstyn (Rutgers)
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5:15 PM, COCKTAIL PARTY (French Room)

8:45 PM, MEDIA PRESENTATION: Carl C. Sartain (Indiana, Terre Haute): "Scenes from British Science"

Thursday, December 29

9:00 AM, Scientists and the Enemy in World War I Chair: Daniel Kevles (California Institute of Technology) Lawrence Badash (California, Santa Barbara): "British and American Views of the German Menace" Alan Beyerchen (Florida, Gainesville): "The Image of the Enemy Among German Scientists" Judith Goodstein (California Institute of Technology): "On the Road to Innsbruck: Postwar International Cooperation among Mathematicians"	9:00 AM, Problems in Geo- logical Dynamics: 1790- 1945 Chair: Joe D. Burchfield (Northern Illinois University) Kenneth L. Taylor (Oklahoma, Norman): "The New Chemistry and Volcanology: Chemical Theories of Volcanic Action, 1790- 1830" Stephen G. Brush (Maryland, College Park): "19th Century Debates between Physicists and Geologists about the Inside of the Earth: Solid, Liquid, or Gas" Henry Frankel (Missouri, Kansas City): "Arthur Holmes and Continental Drift" Commentators: C. Stewart Gillmor (Wesleyan University); Joe D. Burchfield (Northern Illinois University)	9:00 AM, Science and Society: Human Experimentation Chair: Guenter B. Risse (Wisconsin, Madison) Ronald L. Numbers (Wisconsin, Madison): "William Beaumont and the Ethics of Human Experimentation" Gerald L. Geison (Princeton): "Ethical Issues in Pasteur's Work on Rabies" Stanley J. Reiser (Harvard): "Human Experimentation and Clinical Medicine in the Early 20th Century" Commentators: Gert H. Brieger (California, San Francisco); H. Tristram Engelhardt, Jr. (Georgetown University)
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11:45 AM, HSS LUNCHEON (Rose Room)

1:45 PM, The Future of Publishing in the History of Science

Chair: Nathan Sivin (University of Pennsylvania)

Panel: Nicholas A. Alter (University Microfilms, Ann Arbor)

Angus Cameron (Alfred A. Knopf, New York City)

Barbara Hanawalt (American Historical Review, Bloomington)

Colin H. Jones (MIT Press, Cambridge)

Robert P. Multhauf (Smithsonian)

4:00 PM, Strategies for Undergraduate Instruction

Chair: Arthur Donovan (West Virginia), Maurice A. Finocchiaro (Nevada, Las Vegas)

Sheldon J. Kopperl (Grand Valley State Colleges, Allendale): "Madness or Salvation: a Course on the History of Genetic Recombination"

Stanislaus Dundon (California Polytechnic State University): "The Lure of the Human and Social Dimensions"

Lois Magner (Purdue): "Magic and Medicine: An Introduction to the History of Medicine"

Commentator: Nathan Sivin (Pennsylvania)

6:15 PM, DINNER: SPONSORED BY COMMITTEE ON UNDERGRADUATE TEACHING

8:45 PM, MEDIA PRESENTATION: John J. Beer (Delaware): "The Chemistry of the Founding Fathers"

Friday, December 30

9:00 AM, The Extraterrestrial

Life (EIL) Debate

Chair: Lynn White, Jr.

(UCLA)

Steven J. Dick (Aretê): "The EIL Debate and the Scientific Revolution"

Michael J. Crowe (Notre Dame): "Astronomy and the EIL Debate, 1700-1916"

Frederic B. Burnham (Wayne State): "Religion and the EIL Debate, 1700-1916"

Commentator: Stanley L. Jaki (Seton Hall)

(EIL = Extraterrestrial Intelligent Life)

9:00 AM, History and

Philosophy of Science

Reexamined

Chair: Winifred Lovell Wisan (Brooklyn College)

Joseph C. Pitt (Virginia Polytechnic Institute):

"Philosophy and the History of Science"

Maurice A. Finocchiaro

(Nevada, Las Vegas):

"Beyond Koyré: a Critique of Études Galiléennes"

Howard R. Bernstein (Yale):

"Huygens, Leibniz and the 'Equivalence of

Hypotheses'"

John P. Losee (Lafayette):

"Herschel and Whewell on Theory-Comparison"

9:00 AM, Works in Progress

Chair: Margaret J. Osler

(Calgary)

William L. Hine (York): "The Relationship of Renaissance Magic to Science. A Historical Reappraisal and Its Application to Mersenne"

Jane L. Jervis (Yale): "The First Estimates of Parallax in Determining Cometary Distances"

Raymond Franklin (Yale): "Popular Lecturers and the Image of Science in England, 1710-60"

Kenneth L. Caneva (Vrije Universiteit): "The Development and Acceptance of Ampère's Electrodynamics"

Robert S. Bernstein (Princeton): "Physical Chemistry Origins of Biochemistry"

David B. Wilson (Iowa State, Ames): "Physics in the Cambridge University Natural Sciences Tripos, 1851-1900"

Kenneth M. Ludmerer (Harvard): "Reform of American Medical Education, 1870-1915: a Reinterpretation"

Friday, December 30 (cont.)

Robert W. Seidel (California, Berkeley): "Entrepreneurial Styles in 20th Century U.S. Physics"

Daniel P. Jones (Oregon, Corvallis): "The National Research Council and the Organization of American Chemistry, 1919-29"

GEORG VON BÉKÉSY APPARATUS MUSEUM BEING ORGANIZED

Stephen R. Ellis, Pacific Biomedical Research Center, University of Hawaii at Manoa, Honolulu, Hawaii 96822, announces that he and Robert E. Cole are in the process of organizing a working museum of Georg von Békésy's scientific apparatus. One of the purposes of the museum is to provide an archive for scientists and scholars interested in the nature and history of Békésy's scientific contributions to the study of primary and secondary sensory transduction processes. Professors Ellis and Cole wish to collect all of Békésy's apparatus for possible inclusion in their display and would appreciate learning of the location of any equipment Békésy did not bring to Hawaii. They are also interested in learning of the existence of Békésy's correspondence, especially if it relates to apparatus construction.

ARCHIVAL RECORDINGS OF PIONEERS OF COMPUTING

The Science Museum, South Kensington, London SW7 2DD, England, has announced that with the support of the National Physical Laboratory the Museum has commissioned Dr. Chris Evans to conduct a series of 30 taped interviews with some of the most distinguished scientists involved in the early days of computing. Dr. Evans, a psychologist and computer scientist, recorded the interviews on high-quality recording equipment and the tapes have been professionally edited and transcribed onto cassettes, each approximately one hour in duration. The result is a set of tapes entitled "Pioneers of Computing" which give insight into how each of the participants became involved in computing; who they worked with and were influenced by; how they assess their own contributions and those of their colleagues, etc. It is hoped that the complete set will be available by the end of 1977. Pioneers already recorded (asterisks denote current availability of the cassette) include A. D. Booth*, A. W. Burks, A.W.M. Coombs, D. W. Davies*, J. P. Eckert*, J. W. Forrester*, I. J. Good, G. Hopper, H. D. Huskey, C. C. Hurd, T. Kilburn*, J. Mauchly*, D. Michie, M.H.A. Newman, J. Pinkerton*, R. Slutz, S. Ulam, F. C. Williams*, J. A. Wilkinson*, and K. Zuse*. Cassettes may be purchased for academic and scholastic purposes from the Publications Section, Science Museum. The price (inclusive of V.A.T. but exclusive of airmail or surface postage) is £2.50 each or £22.50 for the currently available set of ten.

RECENT SMITHSONIAN INSTITUTION ARCHIVES ACCESSIONS

James A. Steed, Assistant Archivist, Smithsonian Institution Archives, Washington, D.C. 20560, has announced that the following records and papers have been recently accessioned by the Archives: R. Edward Earll Manuscript ca. 1880 (1 folder); Bessie Nicholls Croffut Papers, undated (1 folder); John Evans Papers, 1854-1856, 1860 (1 folder); Sven M. Gronberger Manuscript, ca. 1916 (0.1 cubic foot); Logbooks of Fishing Schooners, 1852-1862 (2 cubic feet); Arthur Lakes Journals, 1877-1880 (3 items); Caleb Burwell Rowan Kennerly Papers, 1855-1860 (0.3 cubic foot); John Murdoch Journals, 1881-1883 (2 items); Charles Hallock Papers, 1854, 1866-1868, 1873-1874, 1877-1913 (0.1 cubic foot); Joseph Paxson Iddings Correspondence, 1914 (1 folder); Charles W. Smiley and William V. Cox Fishery Statistics, ca. 1880 (5 volumes); Roderick Ross MacFarlane Papers, ca. 1889 (1 folder); Albert Charles Peale Manuscript, ca. 1891 (1 folder); George Gibbs Journal, 1859 (1 item); Potomac Side Naturalists' Club Records,

ca. 1858-1866 (1 folder); John L. Ridgway Drawings, 1881-1882 (1 folder); John Xantus Collection, 1857-1864 (0.3 cubic foot); Western Union Telegraph Expedition Collection, 1865-1867 (0.3 cubic foot); Carl Barns Papers, 1891, 1893 (1 folder); Collected Notes, Lists, and Catalogs on Birds, 1839, 1849-1851, 1855-1965 (11.3 cubic feet); Edward R. Foreman Papers, ca. 1868-1879 (0.3 cubic foot); Collected Notes, Lists, Drawings, and Catalogs on Mammals, ca. 1825-1972 (6.4 cubic feet); Collected Notes, Lists, and Drawings on Mollusks, ca. 1835-1850, 1861-1863, undated (0.1 cubic foot); Collected Notes and Lists on Botany, ca. 1871 (0.1 cubic foot); Collected Notes, Lists, Catalogs, Illustrations, and Records on Fishes, ca. 1835-1856, ca. 1877-1974 (12 cubic feet); Bernard Rogan Ross Notebook, ca. 1860-1861 (1 item); Leonard Peter Schultz Papers, ca. 1920-1970 (10 cubic feet); William Harding Longley Papers, 1892-1904, 1913-1935 (0.2 cubic foot); Barton A. Bean Papers, ca. 1892-1897, 1903-1908 (0.1 cubic foot); records of the Society of Systematic Zoology, 1947-1957 (10 cubic feet); "Toward Our Third Century" Bicentennial Awards Program, 1975-1976, Prize Winning Entries (1 reel microfilm).

PHYSICS HISTORY EXHIBIT (BERLIN, GERMANY, SEPTEMBER 9-30, 1977)

Dipl.-Phy. Karl Kromphardt, Pressereferent, Deutsche Physikalische Gesellschaft E. V., Königstrasse 27, D-5300 Bonn 1, Germany, has announced that during the "Berliner Festwochen," the German Physical Society (DPG) will exhibit equipment, documents, letters, and other original items in a show "The Physics of the Twenties" from September 9-30, 1977, in West Berlin. The exhibit presents the physics activities from 1920 to 1929 and their modern consequences. It will be a scientific counter-point to a major art exhibit, "Tendencies of the Twenties," organized at the same time by the Council of Europe.

CONFERENCE ON ECONOMIC CHANGE IN THE CHESAPEAKE COLONIES
(GREENVILLE, WILMINGTON, DELAWARE, OCTOBER 21, 1977)

The Regional Economic History Research Center, Eleutherian Mills-Hagley Foundation, Greenville, Wilmington, Delaware, will sponsor a conference on "Economic Change in the Chesapeake Colonies" on October 21, 1977, at 2:00 P.M. The Chairman is David F. Allmendinger (University of Delaware), and the speakers and topics are Russell Menard (University of Minnesota), "The Economic Growth of the Chesapeake Colonies, 1607-1720"; P.M.G. Harris (Temple University), "Economic Development and Demographic Growth in the Chesapeake Area, 1630-1775"; Lois Green Carr and Lorena S. Walsh (St. Mary's City Commission), "Changing Consumption Patterns in St. Mary's County, Maryland, 1658-1777." The commentator is Jackson Turner Main (SUNY, Stony Brook). For further information please contact Glenn Porter, Director, Regional Economic History Research Center, Eleutherian Mills-Hagley Foundation, Greenville, Wilmington, Delaware 19807.

FUTURE MEETINGS AND SYMPOSIA OF THE DIVISION OF HISTORY
OF CHEMISTRY OF THE AMERICAN CHEMICAL SOCIETY

Further details of the following future meetings and symposia of the Division of History of Chemistry, American Chemical Society, may be obtained from their chairpersons (indicated in parentheses), or from the Division Program Chairman, Dr. O. B. Ramsay, Department of Chemistry, Eastern Michigan University, Ypsilanti, Michigan 48197. Anaheim, March 14, 1978: General Papers; Miami Beach, September 10-15, 1978: General Papers; A Century of Chemistry at the U. S. Geological Survey (I. May, U.S. Department of the Interior); Honolulu, April 1-6, 1978: History of Chemical Engineering (W.F. Furter, Royal Military College of Canada); History of Antibiotics (J. Parascandola, University of Wisconsin); Washington, D.C., September 9-14, 1979: Alchemy and Early Chemistry until 1700 (O. B. Ramsay); History of Chemical Instrumentation (J. T. Stock, University of Connecticut); Centennial of Einstein's Birth: the Impact of Physics on the Teaching of Chemistry (L. Fine, Housatonic College). The officers of the Division of History of Chemistry for 1977-1979 are: Chairman, Ned Heindel; Chairman-elect, William J. Wisswesser. Nominations for the Dexter Award should be sent to Dr. Robert Hawthorne, Secretary/Treasurer of the Division of History of Chemistry, Department of Chemistry, Purdue University, North Central Campus,

Westville, Indiana 46391, no later than February 1, 1978. Nominations should be supported by adequate documentation. Historians of science interested in the Division can become affiliate members for \$3.00. Members receive abstracts of all meeting papers plus the Division newsletter. If interested please contact the Secretary/Treasurer, Dr. Hawthorne.

SEVENTH ANNUAL MEETING OF INTERNATIONAL SOCIETY FOR THE COMPARATIVE STUDY
OF CIVILIZATIONS (U.S.) (MILWAUKEE, WISCONSIN, APRIL 13-15, 1978)

The Seventh Annual Meeting of the International Society for the Comparative Study of Civilizations (U.S.) will be held at the University of Wisconsin-Milwaukee on April 13-16, 1978. Those wishing to contribute papers are invited to send 3 copies of a one-page abstract by November 1 to the Program Committee Chairman, Vytautas Kavolis, Dickinson College, Carlisle, Pennsylvania 17013. Inquiries concerning membership in the Society should be addressed to the Secretary-Treasurer, Harry Krebs, Comparative Civilizations, Dickinson College, Carlisle, Pennsylvania 17013.

CHRISTIAAN HUYGENS CELEBRATIONS (THE NETHERLANDS, 1979)

Several activities in connection with celebrating the 350th anniversary of the birth of Christiaan Huygens on April 14, 1979, are currently being planned. These are as follows: (1) An Exhibition of instruments, portraits, paintings, manuscripts, books and other objects concerning Huygens' life, his scientific studies and his technical work. The exhibition will be held in the National Museum for the History of Science and Medicine "Museum Boerhaave," at Leiden. It will be open to the public for a period of several months. (2) An International Conference on Huygens' role in the history of science. During this three or four-day conference a number of speakers will present papers on Huygens' place in seventeenth century Dutch culture, on his position in the "scientific revolution," on his approach to science and his methods of enquiry, on his position with respect to the great natural philosophies of his time and on his contributions to mathematics and the natural sciences. (3) The publication of the Proceedings of the Conference, in which extended and documented versions of the contributions to the conference will be collected. These Proceedings will fill a gap in the history of science literature, especially since the need for a book-length survey of Huygens' life and work has been keenly felt following the completion of the 22-volume edition of Huygens' Oeuvres (1888-1950). In order to plan, coordinate, and publicize the activities in commemoration of Huygens' 350th birthday, a preparatory Committee has been formed in which the departments for history of science at the Dutch universities, the Boerhaave Museum, the Society for the history of science GeWiNa, and the "Vereniging Hofwijck" will cooperate. The Committee will be pleased to place individuals on its mailing list for further announcements, and it will also be most grateful for all suggestions and comments in connection with its plans. Its address is Committee Huygens 1629-1979, c/o Dr. H.J.M. Bos, Mathematical Institute, Budapestlaan 6, Utrecht, The Netherlands.

HOBBS TERCENTENARY CONFERENCE (BOULDER, COLORADO, AUGUST 1979)

The Society for Study of the History of Philosophy and The University of Colorado at Boulder announces that joint planning is underway for an international Hobbes Tercentenary Conference to be held under the auspices of the American Philosophical Association at Boulder, Colorado, during August 1979. The conference, commemorating Hobbes on the three hundredth anniversary of his death, will be broadly organized around the theme, "a natural science of justice." For further information please contact the Executive Secretary of the Society, Professor Craig Walton, Department of Philosophy, University of Nevada, Las Vegas, Las Vegas, Nevada 89154.

BOOKS RECEIVED BY ISIS: MAY-JUNE 1977

W.I.B. Beveridge, Influenza: The Last Great Plague. An Unfinished Story of Discovery. xii + 124 pp., illus., glossary, index. New York: Prodlist (Science History Publications), 1977. \$6.95.

- Bibliography of the History of Medicine, No. 11 - 1975. viii + 191 pp., index. Bethesda, Md.: National Library of Medicine, 1977. \$3.25 (paper). (Order from Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.)
- Bronislaw Biliński, Il pitagorismo di Niccolò Copernico. (Accademia Polacca delle Scienze, Biblioteca e Centro di Studi a Roma, Conferenze, Fascicolo 69.) 184 pp. Wroclaw/Warszawa/Kradów/Gdańsk: Wydawnictwo Polskiej Akademii Nauk, 1977. 65 zł. (paper).
- Neils Bohr, Collected Works. Vol. 4: The Periodic System (1920-1923). Edited by J. Rud Nielsen. lx + 765 pp., index. Amsterdam/New York/Oxford: North-Holland Publishing Co., 1977. \$120.50; Dfl. 295.
- Harold I. Brown, Perception, Theory, and Commitment: The New Philosophy of Science. 203 pp., bibl., index. Chicago: Precedent Publishing, 1977. \$15.95.
- Richard W. Burkhardt, Jr., The Spirit of System: Lamarck and Evolutionary Biology. 285 pp., illus., bibl., index. Cambridge, Mass./London: Harvard University Press, 1977. \$16.50.
- Milic Capek (ed.), The Concepts of Space and Time: Their Structure and Their Development. (Synthese Library, 74; Boston Studies in the Philosophy of Science, XXII.) lvii + 570 pp., name index. Dordrecht/Boston: D. Reidel, 1976. \$19.50 (paper).
- Frederick F. Cartwright, A Social History of Medicine. (Themes in British Social History.) 209 pp., bibl., index. London/New York: Longman, 1977. \$12.95 (cloth), \$7.50 (paper).
- The Catalogue of Printed Books in the Wellcome Historical Medical Library. Vol. III: Books Printed from 1641-1850, F-L. Compiled by H. R. Denham. xvi + 565 pp. London: Wellcome Inst. for the History of Medicine, 1976.
- Catalogue of the Rare Book Collection in the Northwestern University Dental School. 136 pp., illus. Evanston, Ill.: Northwestern Univ. Dental School, 1976.
- Sir J. William Dawson, Modern Ideas of Evolution. Facsimile reproduction. Edited by William R. Shea and John F. Cornell. Foreword by Conrad F. Harrington. Critical Introduction by William R. Shea. xxv + 240 pp. New York: Produst (Science History Publications, 1977. \$4.95 (paper).
- Maria Assunta Del Torre, Le origini moderne della storiografica filosofica. (Pubblicazioni della Facoltà di Lettere e Filosofia dell'Università di Milano, LXXIX; Sezione a cura dell'Istituto di Storia della Filosofia, 23.) 154 pp., bibl., name index. Firenze: La Nuova Italia Editrice, 1976. L. 5000 (paper).
- Jean Donnison, Midwives and Medical Men: A History of Inter-Professional Rivalries and Women's Rights. vi + 250 pp., bibl., index. New York: Schocken, 1977. \$14.95.
- Fred W. Drake, China Charts the World: Hsu Chi-yü and His Geography of 1848. (Harvard East Asian Monographs, 64.) x + 272 pp., bibl., index. Cambridge, Mass./London: Harvard Univ. Press, 1975. \$15.
- Jean Gimpel, The Medieval Machine: The Industrial Revolution of the Middle Ages. xi + 274 pp., illus., index. New York: Holt, Rinehard and Winton, 1976. \$12.95.
- Rainald von Gizycki, Prozesse wissenschaftlicher Differenzierung. Eine organisations- und wissenschaftssoziologische Fallstudie. (Soziologische Schriften, Band 21.) 151 pp., bibl. Berlin/München: Dunker & Humblot, 1976. DM 49,80.
- Maurice Goldsmith, Frédéric Joliot-Curie. A Biography. 260 pp., illus., index. London: Lawrence and Wishart; Atlantic Highlands, N.J.: Humanities Press, 1976. \$12.
- Wayne Hanley, Natural History in America. From Mark Catesby to Rachel Carson. xii + 339 pp., illus., color plates. New York: Quadrangle, 1977. \$14.95.
- Brigitte Hoppe, Biologie: Wissenschaft von der belebten Materie von der Antike zur Neuzeit. Biologische Methodologie und Lehren von der stofflichen Zusammensetzung der Organismen. (Sudhoffs Archiv, Beiheft 17.) x + 368 pp., bibl., indexes. Wiesbaden: Franz Steiner Verlag, 1976. DM 75 (paper).
- Günter Kallinich, Schöne alte Apotheken. Aufnahmen Helga Schmidt-Glassner. (Kulturgeschichte in Einzeldarstellungen.) 251 pp., illus. (many in color), bibl., index. München: Verlag Georg D. W. Callwey, 1977. DM 120.
- Edward K. Kaplan, Michelet's Poetic Vision: A Romantic Philosophy of Nature, Man, and Woman. xxvi + 211 pp., bibl., index. Amherst: Univ. of Massachusetts Press, 1977. \$12.50.
- David Knight, The Nature of Science: The History of Science in Western Culture since 1600. 215 pp., index. London: Andre Deutsch, 1977. £4.95.

Leonard Krieger, Ranke: The Meaning of History. xii + 402 pp., index. Chicago/London: Univ. of Chicago Press, 1977. \$23.

Gérard Lemaire; Roy MacLeod; Michael Mulkay; Peter Weingart (eds.), Perspectives on the Emergence of Scientific Disciplines. (Maison des Sciences de l'Homme, Paris, Publications, 4.) xi + 281 pp., name index. The Hague/Paris: Mouton; Chicago: Aldine, 1976. \$18.50.

Erna Lesky (ed.), Sozialmedizin: Entwicklung und Selbstverständnis. (Wege der Forschung, Band CCLXXIII.) xii + 501 pp., bibl., index. Darmstadt: Wissenschaftliche Buchgesellschaft, 1977.

R. Bruce Lindsay (ed.), Applications of Energy: Nineteenth Century. (Benchmark Papers in Energy, Vol. 2.) xi + 420 pp., subject and author citation indexes. Stroudsburg, Pa.: Dowden, Hutchinson and Ross, 1976. Distributed by Halsted Press (John Wiley and Sons). \$32.

Euan W. MacKie, Science and Society in Prehistoric Britain. xii + 252 pp., illus., 17 plates, bibl., index. New York: St. Martin's Press, 1977. \$22.95.

Joseph Meites; Bernard T. Donovan; Samuel M. McCann (eds.), Pioneers in Neuroendocrinology. (Perspectives in Neuroendocrine Research, Vol. I.) viii + 327 pp., illus., index. New York/London: Plenum Press, 1975. \$22.50.

John R. Millburn, Benjamin Martin: Author, Instrument-Maker, and "Country Showman". (Science in History, 2.) xii + 244 pp., illus., apps., bibl., index. Leyden: Noordhoff International Publishing, 1976. Dfl. 63.

Jeannette Mirsky, Sir Aurel Stein, Archaeological Explorer. xiii + 585 pp., 33 pls., index. Chicago/London: Univ. of Chicago Press, 1977. \$17.50.

Jerrold Northrop Moore, A Matter of Records: Fred Gaisberg and the Golden Era of the Gramophone. viii + 248 pp., illus., index. New York: Taplinger, 1977. \$10.95.

Bruce Murray; Eric Burgess, Flight to Mercury. xi + 162 pp., illus., index. New York: Columbia Univ. Press, 1977. \$12.95. (On the Mariner 10 mission).

George Ordish, The Constant Pest: A Short History of Pests and Their Control. x + 240 pp., illus., bibl., glossary, index. New York: Scribner's, 1977. \$12.95.

Giuliano Pancaldi, Charles Darwin: "Storia" ed "economia" della natura. (Dimensioni, 44.) vi + 212 pp., name index. Firenze: La Nuova Italia Editrice, 1977. L. 4000 (paper).

Sandra Tugnoli Pattaro, La formazione scientifica e il "Discorso Naturale" di Ulisse Aldrovandi. (Università di Trento, Quaderni di Storia e Filosofia della Scienza, 7.) 115 pp., name index. Trento: Università di Trento, 1977.

Charles S. Peirce, The New Elements of Mathematics. Ed. by Carolyn Eisele. Vo. IV: Mathematical Philosophy. xxviii + 393 pp., frontispiece, name and subject indexes. The Hague/Paris: Mouton; Atlantic Highlands, N.J.: Humanities Press, 1976. \$48.

William C. Price; Seymour S. Chissick (eds.), The Uncertainty Principle and Foundations of Quantum Mechanics. A Fifty Years' Survey. xvii + 572 pp., author and subject indexes. New York: John Wiley and Sons, 1977. \$42.

Strother B. Purdy, The Hole in the Fabric: Science, Contemporary Literature, and Henry James. (Critical Essays in Modern Literature.) 228 pp., index. Pittsburgh: Univ. of Pittsburgh Press, 1977. \$11.95.

Rasānavakalpa (Manifold powers of the ocean of rasa). Text edited and translated into English by Mira Boy, in collaboration with B. V. Suvvarayappa. In English and Sanskrit. v + 174 pp., bibl., index. New Delhi: Indian National Science Academy, 1976. Rs. 25.00; \$5.00; £2.

Guenter B. Risse; Ronald L. Numbers; Judith Walzer Leavitt (eds.), Medicine without Doctors: Home Health Care in American History. 124 pp., illus., index. New York: Science History Publications, 1977. \$4.95 (paper), \$7.95 (cloth).

Walter G. Saltzer, Theorien und Ansätze in der griechischen Astronomie--im Kontext benachbarter Wissenschaften betrachtet. (Collection des Travaux de l'Académie Internationale d'Histoire des Sciences, No. 23.) viii + 162 pp., index. Wiesbaden: Franz Steiner Verlag, 1976. Dm 46 (paper).

G. R. Searle, Eugenics and Politics in Britain, 1900-1914. (Science in History, 3.) vi + 147 pp., index. Leyden: Noordhoff International Publishing, 1976. Dfl. 45.

Nathan Sivin (ed.), Science and Technology in East Asia. (History of Science: Selections from Isis.) xxiv + 260 pp., illus. New York: Science History Publications, 1977. \$9.95 (cloth), \$5.95 (paper).

B. F. Skinner, Particulars of My Life. 319 pp., illus. New York: Alfred A. Knopf, 1976. \$10.

Norman Smith, Man and Water: A History of Hydro-Technology. xiv + 239 pp., illus., bibl., glossary, index. New York: Scribner's, 1977. \$12.95.

Ina-Susanne Spiegel-Rösing, Wissenschaftsentwicklung und Wissenschaftssteuerung. Einführung und Material zur Wissenschaftsforschung. (Sozialwissenschaftliche Paperbacks, Sonderreihe: Perspektiven der Wissenschaftsforschung, Band IIc.) Band IIc.) x + 309 pp., bibl., index. Frankfurt: Athenäum Verlag, 1973. DM 29,80 (paper).

Charles Susskind, Twenty-five Engineers and Inventors. With a biobibliography of the author and a foreword by James L. Palmer. ix + 122 pp., illus., bibl. San Francisco: San Francisco Press (547 Howard Street, San Francisco, Calif. 94105), 1977. \$7.50.

Robert S. Westman; J. E. McGuire, Hermeticism and the Scientific Revolution. Papers read at a Clark Library Seminar, March 9, 1974. 150 pp. Los Angeles: Williams Andrews Clark Memorial Library, University of California, Los Angeles, 1977. \$5 (paper).

John Woodward; David Richards (eds.), Health Care and Popular Medicine in Nineteenth Century England. 195 pp., 2 indexes. New York: Holmes and Meier, 1977. \$18.

Ronald M. Yoshida, Reduction in the Physical Sciences. (Philosophy in Canada: A Monograph Series, 4.) 90 pp., bibl. Halifax, Nova Scotia: Dalhousie University Press, 1977.

Rudolf Zaunick, Der sächsische Paracelsist Georg Forberger. Mit bibliographischen Beiträgen zu Paracelsus, Alexander von Suchten, Denys Zaccare, Bernardus Trevirensis, Paolo Giovio, Francesco Guicciardini und Natale Conti. (Kosmosophie, Band IV.) x + 110 pp., 10 pls., index. Wiesbaden: Franz Steiner Verlag, 1977. DM 42 (paper).

Harriet Zuckerman, Scientific Elite: Nobel Laureates in the United States. xv + 335 pp., bibl., name and subject indexes. New York: The Free Press; London: Collier Macmillan Publishers, 1977. \$14.95.

OTHER PUBLICATIONS

Proceedings of the XIVth International Congress of the History of Science, Tokyo/Kyoto, 1974. 4 Vols. \$40.00 + Postage. A limited number of sets are available. Orders should be placed with one of the following: (1) Japan Publications Trading Co., Ltd., P.O. Box 5030, Tokyo International, Tokyo 101, Japan; 200 Clearbrook Road, Elmsford, New York 10523; 1174 Howard Street, San Francisco, California 94103. (2) Kinokuniya Book-Store Co., Ltd., 17-7 Shinjuku 3-chome, Shinjuku-ku, Tokyo 160, Japan. (3) Maruzen Co., Ltd., P.O. Box 5050, Tokyo International, Tokyo 100-31, Japan.

Acta et Capita Selecta Biohistorica is a series of offset-reprints, comprising papers, pamphlets, chapters of books, etc., dealing with subjects relevant to the history of pure and applied life sciences. The Acta series aims at bringing together papers with an historical character, regarding a certain subject, e.g., one volume will be devoted to publications around the 'De motu cordis' of William Harvey. The other series has been planned as a series of source books, bringing together the relevant papers concerning discoveries, theories, techniques, etc., in the field of the life sciences, e.g., all papers in which the discovery of new cell-organelles were published for the first time, from R. Hooke to E. Strasburger. Both will be published by the Biohistorical Institute of Utrecht University and will be issued under the guidance of a scholarly advisory board, consisting of A. Geus (Marburg) and P. Smit (Utrecht). For further information, please contact A. Asher & Co., Keizersgracht 526, Amsterdam 1002, The Netherlands.

Landmarks of Science and Landmarks II. For information and brochures on these extensive collections on microprint, contact Readex Microprint Corporation, 101 Fifth Avenue, New York, New York 10003.

FELLOWSHIPS, GRANTS, AND SUMMER SUPPORT AVAILABLE

The American Antiquarian Society, 185 Salisbury Street, Worcester, Massachusetts 01609, will award a number of research grants in 1978-1979 in two categories: (1) Long-term National Endowment for the Humanities (NEH) Fellowships. At least two will be awarded. The stipend and duration of each fellowship are negotiable up to a limit of \$1,666 per month for six to twelve months' residence at the Society. The Society's NEH Fellowships may not be awarded to degree candidates or for study leading to advanced degrees; nor may they be granted to foreign nationals unless they have resided in the U.S. for the preceding three years. Recipients must devote full time to their study and may not accept teaching

assignments or undertake any other activities while in residence. Also, they may not hold other major fellowships except sabbaticals or grants from their own institutions. (2) Short-term Fred Harris Daniels Fellowships. Four to six will be awarded. The Fellowships vary in duration from one to three months. Stipends may vary in amount, according to a Fellow's needs, to a maximum of \$1,800. The Fellowships are open to individuals engaged in scholarly research and writing, including foreign nationals and persons at work on doctoral dissertations. Because the purpose of the Daniels awards is to enable persons who might not otherwise be able to do so to travel to the Society, grants will be made only to those who reside more than fifty miles from Worcester, Massachusetts. The deadline for applications for both NEH and Daniels Fellowships is February 1, 1978. It is the responsibility of the applicant to see that three letters of recommendation have also reached the Society by that date. Interested persons may write for application forms to the Director of the Society. Announcement of the awards will be made by March 15, 1978.

The Joint Committee on Eastern Europe of the American Council of Learned Societies and the Social Science Research Council wishes to draw attention to its program of Grants for Post-Doctoral Research in East European Studies. These are offered for research in the humanities or social sciences relating to the cultures and populations (regardless of their geographical locus) of Albania, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, Yugoslavia, East Germany since 1945, and modern Greece. Such research should be problem oriented and of theoretical relevance in the substantive scholarly disciplines and may be comparative in nature. The program particularly invites such comparative research on social institutions and processes. The program also supports research of conceptual and theoretical focus and manifest disciplinary relevance, empirically based on immigrant groups or communities from Eastern Europe. Grants will rarely exceed \$10,000. Stipends in lieu of summer salary or grants for foreign travel will be considered only in exceptional circumstances. The deadline for receipt of application forms is December 30, 1977. In requesting application forms, the prospective applicant must provide the following information: (1) age, (2) highest academic degree held and date received, (3) citizenship or permanent residence (this program is open only to citizens or permanent residents of the U.S. or Canada), (4) academic or other position, (5) field of specialization, (6) proposed subject of research, (7) period of time for which support is requested, and (8) specific award program under which an application is contemplated. The above information, and/or requests for additional information about this or other ACLS fellowships and grants programs, should be addressed to Office of Fellowships and Grants, American Council of Learned Societies, 345 East 46 Street, New York, New York 10017.

The International Research and Exchanges Board (IREX), 110 East 59th Street, New York, New York 10022, sponsors a variety of Academic Programs with Eastern Europe and the Soviet Union which are described in a brochure of that title. Application deadlines vary, but some are as early as November 1, 1977. Interested persons are invited to request the above brochure describing IREX programs and application procedures from IREX at the above address.

The National Endowment for the Humanities has announced that its program of Fellowships in Residence for College Teachers will offer sixteen seminars during the full academic year of 1978-1979. These seminars will cover the different disciplines of the humanities and the humanistic social sciences, and will be located at universities throughout the country. Between six and twelve college teachers will be selected to attend each seminar. The maximum stipend for Fellows is \$14,500 plus a moving and travel allowance of \$500 for those who are not commuting from their own homes. The purpose of the program is to provide opportunities for faculty members of undergraduate and two-year colleges to work with distinguished scholars in their fields at institutions with library collections suitable for advanced research. Through research, reflection, and discussion with the seminar director and their colleagues in the seminar, participating college teachers will sharpen their understandings of the subjects they teach and improve their ability to convey these understandings to their students. Application materials, including descriptions of the seminars for 1978-1979, is available upon request from the Division of Fellowships, National Endowment for the Humanities, 806 15th Street, N.W., Washington, D.C. 20506. The deadline for submission of applications will be November 7, 1977.

The National Endowment for the Humanities has also announced that approximately 100 eight-week Summer Seminars for College Teachers will be offered by the National Endowment for the Humanities during the summer of 1978. These seminars will cover the various disciplines of the humanities and humanistic social sciences and will be located at major universities and research centers in all regions of the country. Twelve college teachers will be selected to attend each seminar, and each participant will receive a stipend of \$2,000 for a two-month tenure period plus a travel allowance of up to \$400. The purpose of the program is to provide opportunities for faculty members of undergraduate and two-year colleges to work with distinguished scholars in their fields at institutions with library collections suitable for advanced study. A large number of seminars will be of particular interest to teachers of introductory courses, whether at two-year or four-year institutions. Specific information concerning seminar topics, directors, and locations will be available upon request in early December. Prospective applicants should write to the Division of Fellowships, National Endowment for the Humanities, 806 15th Street, N.W., Washington, D.C. 20506, or call Mitchell Schneider at 202-724-0377. The application deadline is March 13, 1978.

The National Historical Publications and Records Commission announces the 1978-1979 competition for Fellowships in Historical Editing. The editors of The Papers of Andrew Jackson, (The Hermitage, Tennessee), The Papers of George Washington, (University of Virginia), The Charles Willson Peale Family Papers, (National Portrait Gallery), and The Marquis de Lafayette Papers, (Cornell University Library), will each select a scholar to spend a year in training with the project staff beginning after July 1, 1978. Fellows must hold a humanities doctorate or have completed all requirements for the degree except the dissertation. The stipend of \$13,000 is provided by grants to the Commission from the Andrew W. Mellon Foundation and the Lila Acheson Wallace Fund. For application information, write to the Executive Director, NHPRC, National Archives Building, Washington, D.C. 20408. Applications must be returned by March 1, 1978.

The 1978 Summer Institute for the Editing of Historical Documents will be jointly sponsored by the National Historical Publications and Records Commission (NHPRC), the State Historical Society of Wisconsin, and the University of Wisconsin. The two week session will provide thorough training in all aspects of documentary editing for 15 to 18 interns. For information about application procedures, tuition fees, and the availability of tuition and travel grants, please write to the Executive Director, NHPRC, National Archives Building, Washington, D.C. 20408. Applications must be returned by March 1, 1978.

The National Humanities Center, P.O. Box 12256, Research Triangle Park, North Carolina 27709, has extended its deadline for application for 1978-1979 fellowships to February 1, 1978. Information on these fellowships was published in the last Newsletter, or may be obtained directly from the NHC at the address above.

The Rockefeller University will make grants-in-aid ranging from \$500 to \$1,000 to graduate students or advanced scholars to support projects requiring substantial research in the holdings of the Rockefeller Archive Center for 1978. Applications should be made before December 31, 1977. The names of recipients will be announced on or before March 31, 1978. Inquiries about the program and the open collections at the Center should be addressed to the Director, Rockefeller Archive Center, Hillcrest, Pocantico Hills, North Tarrytown, New York 10591.

The Smithsonian Institution announces its program of higher education and research training in the History of Science and Technology for 1978-1979. Smithsonian Fellowships are awarded to support independent research using Smithsonian Institution collections, archives, laboratories, and other facilities, and pertaining to Smithsonian professional staff research interests. Proposals for research may be offered in fields in which the Institution has research strength: history of mathematics, physical sciences, medicine and pharmacy, engineering, transportation, agriculture, air and space, and electrical technology, and the history of science in America. Smithsonian Fellowships, supported by

a stipend of \$10,000 per annum and research allowances, may be granted to postdoctoral scholars to pursue further training in research. Smithsonian Predoctoral Fellowships, supported by a stipend of \$5,000 per annum and research allowances, may be granted to doctoral candidates to conduct research for their dissertations with the approval of their university department. Applications are due by January 15, 1978. In selecting individuals for participation in academic programs, the Smithsonian Institution does not discriminate on grounds of race, creed, color, sex, age or national origin to any applicant. For more information and application forms write to Office of Academic Studies, Smithsonian Institution, Washington, D.C. 20506. Please indicate the particular area in which you propose to conduct research and give the dates of degrees received or expected.

FELLOWSHIPS AND GRANTS RECEIVED

Robert Kargon (Johns Hopkins University) received a two-year grant from the National Science Foundation and a Grant-in-Aid from the American Council of Learned Societies for research on "Robert A. Millikan: a Life in American Science."

Arthur I. Miller (University of Lowell) received a two year grant from the National Science Foundation and a Fellowship from the American Council of Learned Societies for research on "A Biographical Study of Henri Poincaré." He will spend the Fall term of 1977 at the Centre Alexandre Koyré in Paris.

Sheila Weiss (Johns Hopkins University) was awarded a National Science Foundation Fellowship to conduct research on her Ph.D. dissertation in Germany; Ms. Weiss was previously the recipient of a Fulbright Fellowship for research in Germany.

The American Council of Learned Societies, in its new program of grants-in-aid designed to provide assistance to recent recipients of the Ph.D. for the preparation of their doctoral dissertations for publication or in special cases for research leading to a first substantial publication, received nearly six hundred applicants and made 56 grants to 20 women and 36 men. The program is made possible by a grant from the National Endowment for the Humanities. Included among the recipients were the following: (1) Thomas L. Dublin (Assistant Professor of History, University of California, San Diego), "Women workers in the early Lowell mills"; (2) Curtis M. Hinsley, Jr. (Associate Professor of History, Colgate University), "The development of American anthropology, 1860-1910"; (3) David Kohn (Lecturer in Biology, University of Massachusetts, Boston), "An edition of Darwin's Transmutation Notebooks"; and (4) Gonzalo Munevar (Assistant Professor of Philosophy, University of Nebraska, Omaha), "The nature of scientific understanding."

The American Council of Learned Societies also awarded thirty-one fellowships to recent recipients of the Ph.D. for research in the humanities and related social sciences for minimum periods of one semester. From over three hundred applicants, grants were made to nine women and twenty-two men. The average age of the Fellows is thirty-one. The program is supported by funds from the Ford Foundation. Included among the recipients were the following: (1) Huguette Cohen (Research Assistant, Political Science Department, Ph.D. in French, University of Illinois, Urbana), "Diderot and the problem of Language in the 18th century"; (2) David F. Crew (Assistant Professor of History, Columbia University), "A comparative study of working class culture in industrial Europe, 1870-1930"; (3) Allan Gotthelf (Assistant Professor of Philosophy, Trenton State College), "Aristotle's conception of final causality"; and (4) James W. Schmidt (Assistant Professor of Government, University of Texas), "The crisis of German sociology from Tönnies to Lukács."

The American Council of Learned Societies also awarded ninety-three fellowships for periods of six months to one year. Eighty-five of these were awarded for post-doctoral research in the humanities and related social sciences. In addition, eight post-doctoral fellowships were awarded to assist young scholars to enlarge their range of knowledge by study in fields outside their present areas of specialization. These programs have been made possible by grants from The Ford Foundation, the National Endowment for the Humanities,

and the Carnegie Corporation of New York. Included among the recipients were the following: (1) Eveyln B. Ackerman (Assistant Professor of History, City University of New York, Herbert H. Lehman College), "Medical care in the countryside of the Ile-de-France, 1700-1915"; (2) Stanford Anderson (Professor of History and Architecture, Massachusetts Institute of Technology), "A historiography of modern architecture and its relation to current issues"; (3) Josef J. Barton (Associate Professor of History, Northwestern University), "Immigration and working-class communities in Chicago, 1880-1935"; (4) Howard R. Bernstein (Visiting Fellow in the Department of History of Science and Medicine, Yale University), "Study of classical and post-classical mechanics"; (5) Rosemarie H. Bletter (Assistant Professor of Art History, Columbia University), "American architecture, 1945-1975"; (6) Robert P. Brenner (Associate Professor of History, University of California, Los Angeles), "Agrarian class structure and economic development in pre-industrial Europe"; (7) John J. Contreni (Associate Professor of History, Purdue University), "Study of paleopathology and early Medieval health and medicine"; (8) Richard S. Ellis (Associate Professor of Near Eastern Archaeology, Bryn Mawr College), "Textile technology in the ancient Near East"; (9) Carolyn Iltis (Associate Professor of the History of Science, University of San Francisco), "Organicism to mechanism in the scientific revolution"; (10) Theodore Kisiel (Associate Professor of Philosophy, Northern Illinois University), "Humanistic facets of natural science"; (11) Edward G. Ruestow (Associate Professor of History, University of Colorado), "The beginnings of microscopy in Holland"; (12) Henry James Steward (Assistant Professor of Cartography, Ohio State University), "The history of map projections"; (13) Frank Sulloway, II (Junior Fellow, Society of Fellows, Harvard University), "The influence of birth order on revolutionary temperament in science"; and (14) David Ward (Professor of Geography, University of Wisconsin), "The relationship between immigration and the division of labor in 19th century American cities."

The American Council of Learned Societies also announced the results of a program on East European Studies, which is sponsored jointly by the ACLS and the Social Science Research Council. This joint program has been made possible by a grant from The Ford Foundation. Post-doctoral grants for research were awarded to fourteen scholars, including the following: Alexander Stephan (Assistant Professor of German, University of California, Los Angeles), "The impact of the 'scientific and technical revolution' on GDR literature of the 1960's."

The American Council of Learned Societies also awarded Grants-in-Aid to one hundred seven scholars from eighty-three academic institutions for post-doctoral research in the humanities and related social sciences. This program has been made possible by grants from The Ford Foundation and the National Endowment for the Humanities. Included among the recipients was the following: Edward Lurie (Professor of History, University of Delaware), "Science in American culture, 1820-1945."

The American Council of Learned Societies also awarded grants for advanced research in the humanities and social sciences relating to Chinese civilization to fourteen scholars from eleven colleges and universities in the United States and England. This program has been made possible by grants from the National Endowment for the Humanities and The Ford Foundation. Included among the recipients was the following: Bernard S. Solomon (Professor of Chinese, City University of New York, Queens College), "The early Chinese concept of reality."

The Rockefeller University has made grants-in-aid to support projects requiring substantial research in the holdings of the Rockefeller Archive Center for 1977 to Peter J. Anderson, Walter Jackson, Barry Mehler, Philip J. Pauly, Daryl L. Revoldt, Lewis P. Rubin, and Marilyn E. Weigold.

The Smithsonian Institution has announced that the following Fellows have been appointed in the program in the History of Science and Technology for 1977-1978: I. Pre-doctoral Fellows: (1) George M. Danko (University of Pennsylvania), (2) Richard F. Hirsh (University of Wisconsin), (3) Anne M. Millbrooke (University of Pennsylvania), and (4) Philip J. Pauly (Johns Hopkins University). II. Postdoctoral Fellows: (1) Ray Douglas Hurt (Kansas State University) and (2) Robert Friedman (Johns Hopkins University).

AWARDS AND HONORS

I. Bernard Cohen (Harvard University) has been named Victor S. Thomas Professor of the History of Science at Harvard.

Carolyn Merchant Iltis will be a fellow at the Center for Advanced Study in the Behavioral Sciences, 202 Junipero Serra Boulevard, Stanford, California 94305, from January 1 to December 31, 1978. She will be on leave of absence from the University of San Francisco.

Martin J. Klein (Yale University) and Otto Neugebauer (Brown University) have been elected recently as the first two historians of science to the National Academy of Sciences. The Academy has indicated that Professors Klein and Neugebauer were nominated by the Temporary Nominating Group for History and/or Philosophy of Science. This Temporary Nominating Group was appointed by the Council to nominate individuals from this specific area for the 1977 elections. The group has been recently granted an extension for the 1978 elections. Since this is a temporary group, and there is no section in the Academy representing this field, the Academy has made no commitment as to the number of individuals to be elected in this category in the coming years.

APPOINTMENTS AND PROMOTIONS

David K. Allison has been appointed Historian of the Naval Research Laboratory, Washington, D.C.

Toby Gelfand has been appointed to the Hannah Chair of the History of Medical and Related Sciences at the University of Ottawa.

Owen Hannaway was promoted to Professor of History of Science at the Johns Hopkins University.

Thomas Parke Hughes has been appointed Chairman of the Department of History and Sociology of Science at the University of Pennsylvania.

James E. McClellan has been appointed Assistant Professor of the History of Science in the Humanities Department at Stevens Institute of Technology.

Ronald L. Numbers has been appointed Chairman of the Department of the History of Medicine at the University of Wisconsin-Madison.

Alexander Vucinich joined the Department of History and Sociology of Science at the University of Pennsylvania on July 1, 1977.

VISITING APPOINTMENTS

William H. Brock (Director, Victorian Studies Centre, University of Leicester) will be Visiting Professor in the Institute for the History and Philosophy of Science and Technology at the University of Toronto during the Fall Term of the academic year 1977-78.

Karl Hufbauer (Department of History, University of California, Irvine) will be spending the academic year 1977-78 on sabbatical leave as a visiting scholar in the Department of History and Sociology of Science, University of Pennsylvania.

Robert Kargon (Department of the History of Science, Johns Hopkins University) will serve as visiting professor at the Institut d'histoire et de sociopolitique des sciences, Université de Montréal, during the fall semester 1977.

John Law (Department of Sociology, Keele University, England) will be on research leave as a visiting scholar in the Department of History and Sociology of Science, University of Pennsylvania, for the period January-April 1978.

Adrian Malone (Producer of such BBC TV series as the "Ascent of Man") is spending a period of appointment as lecturer in the Department of History and Sociology of Science, University of Pennsylvania.

Russell McCormmach (Department of the History of Science, Johns Hopkins University) is serving as Edward F. Arnold Visiting Professor at Whitman College, Walla Walla, Washington, during the 1977-1978 academic year.

DISSERTATIONS IN PROGRESS OR RECENTLY COMPLETED

Note: If available, please supply the Dissertation Abstracts reference number in the future when submitting announcements on dissertations completed.

Brown University

Lois I. Abromitis, "William Gilbert as Scientist: the Portrait of a Renaissance Amateur" (completed).

Johns Hopkins University

Leonard S. Reich, "Radio Electronics and the Development of Industrial Research in the Bell System" (completed).

University of Pennsylvania

Susan Sheets-Pyenson, "Popular Science in Paris and London, 1820 to 1875: the Emergence of a 'Low' Scientific Culture" (completed).

John Richard Uberti, "Men, Manners and Machines: The Young Man's Institute in Antebellum Philadelphia" (completed).

AMERICAN HISTORICAL ASSOCIATION STATEMENT REGARDING HIRING PROCEDURES

The following guidelines regarding hiring procedures were adopted by the Professional Division of the AHA at its meeting on October 9-10, 1976.

The AHA recommends to all departments of history adherence to the following guidelines in hiring to fill faculty positions: (1) All positions should be advertised in the Employment Information Bulletin and such other publications as a department may deem appropriate. (2) Advertisements for positions should contain specific information regarding the expertise required; and clear indication should be given as to whether a position has actually been authorized or is contingent upon budgetary or other administrative considerations. (3) All applications and inquiries for a position should be acknowledged promptly and courteously (within two weeks of receipt, if possible) and should inform the applicant as to initial departmental action on the application or inquiry. (4) Screening procedures should be conducted as expeditiously as possible, so as to identify promptly those candidates to be given serious consideration. (5) At all stages in a search, affirmative action/equal opportunity guidelines should be respected. (6) As candidates are eliminated from consideration, they should be notified promptly and courteously of departmental action. (7) Whether conducted at professional meetings or in a department, interviews should proceed in such a manner as to respect the professional and personal integrity of candidates. Interviews should take place on time, and candidates should be allowed sufficient time in interviews to develop their candidacies in some depth.

These guidelines will be added to the existing policy. That policy is stated in each issue of the EIB, and is repeated below. Job discrimination is illegal. The AHA retains the right to edit all discriminatory statements from copy sent to the EIB. It hopes that the EIB will facilitate open hiring on the basis of merit, to the advantage of all qualified historians. The AHA has officially endorsed the American Association of University Professors' 1940 statement on Academic Freedom and Tenure. Job announcements from institutions currently under AAUP censure are marked with an asterisk. AHA recommends that job seekers refer to the AAUP Bulletin for further information. For further information contact the Executive Director, American Historical Association, 400 A Street S.D., Washington D.C. 20003.

REQUEST FOR JOB INFORMATION

Individuals in colleges, universities, and other institutions having knowledge of possible or definite job openings are urged to relay such information to the Secretary of

the Society, Dr. Jane M. Oppenheimer, as soon as possible for publication in the Newsletter. Such sharing of job information is consistent with the general sentiment that members of the HSS expressed on the desirability of open listing of available positions.

JOB OPENINGS

The positions listed below are new openings that have been brought to the attention of the Secretary. Other new openings should also be brought to her attention as soon as possible. All inquiries should be addressed to the institution having the opening, and only serious and qualified persons should apply. It is assumed that the positions listed are in fact open at the time of publication. The Society, however, can assume no responsibility for the accuracy or currency of the listing.

1. Bell Laboratories, 600 Mountain Avenue, Murray Hill, New Jersey 07974.

Position: Writer/Analyst.

Description: Major industrial R&D firm in New York metropolitan area has an opening for a writer/analyst strong in science history and/or sociology. The person hired will be expected to do original writing relating science and technology to public needs and to do liaison work with university and government groups. University or government experience would be helpful but not required. Send letter describing related education and experience. Include writing samples.

Contact: G. E. Schindler, Jr., Head, Technical Information Department, Bell Laboratories 3C-305 (phone 201-582-5650).

2. Franklin Institute Research Laboratories, Library, National Center for Toxicological Research, Jefferson, Arkansas 72079.

Description: Looking for an archivist who would like to work at the National Center for Toxicological Research, a Food and Drug Administration biochemical research laboratory. Need someone with interest and experience in toxicology, carcinogenesis, mutagenesis, pathology, environmental pollution, behavioral sciences, general biology, and chemistry. The task includes collecting and organizing government documents, letters, protocols, and papers for the projects currently under study at NCTR, so a familiarity with government agencies and the Government Printing Office, as well as an ability to work with scientific researchers will be invaluable for the applicant.

Contact: Heidi Finkbeiner, Acting Project Manager, Science Information Services.

3. University of Michigan, Ann Arbor, Michigan 48109.

Position: Assistant Professor; regular tenure-track appointment within Department of Humanities for fall 1978.

Description: History of Western Technology, early modern and/or modern periods, with complementary research and teaching interests in technology assessment and decision making, technology and values, or related interdisciplinary fields. Ph.D. required by summer 1978. A non-discriminatory affirmative action employer.

Contact: J. C. Mathes, Chairman, Department of Humanities, College of Engineering.

4. Princeton University, Princeton, New Jersey 08540.

Position: Assistant Professor, Program in History and Philosophy of Science and Department of History, beginning September 1978.

Description: Our primary needs are in the history of biology, preferably in the 19th and 20th centuries, but with an emphasis other than evolution. A candidate will need broad qualifications to teach in other areas of history of science, however, and it is possible that priorities as to fields may be modified for a candidate exceptionally well qualified for both undergraduate and graduate teaching. Appointment will be for three years.

Deadline: Correspondence and applications should be received no later than December 10, 1977.

Contact: Professor Charles C. Gillispie, Director, Program in History and Philosophy of Science, 220 Palmer Hall.

5. Princeton University, Princeton, New Jersey 08540.

Position: Instructor, Program in History and Philosophy of Science and Department of History, beginning September 1978.

Description: Applications are invited for candidates to conduct discussion groups and lead small-group courses in history of science since 1600. Appointment will be for one year. Final authorization to make the appointment has not yet been accorded.

Deadline: Correspondence and applications should be received no later than December 10, 1977.

Contact: Professor Charles C. Gillispie, Director, Program in History and Philosophy of Science, 220 Palmer Hall.

6. University of Wisconsin-Madison, Wisconsin 53706.

Description: Tenure or tenure-track position in the History of Science Department, beginning autumn 1978. Primary interest in history of modern (18-20th c.) biological sciences. Responsibility for both graduate and undergraduate teaching. Rank open. The University of Wisconsin-Madison is an Equal Opportunity Employer.

Deadline for Applications: November 15, 1977.

Contact: Direct inquiries to Professor Robert Siegfried, Chairman, Search Committee, History of Science Department, South Hall.

ADDENDA

SYMPOSIUM ON TEACHING THE HISTORY OF SCIENCE AT ANNUAL MEETING IN DALLAS

Stephen G. Brush, Department of History and Institute for Physical Science and Technology, University of Maryland, College Park, Maryland 20742 (phone 301-454-2723), and Chairman of the Committee on Undergraduate Education (CUE) of the History of Science Society calls special attention to the fact that the CUE will sponsor a Symposium on "Strategies for Undergraduate Instruction" at the HSS Annual Meeting in Dallas, Texas, Thursday, December 29, 4-6 P.M. This Symposium should be of special interest to those who will be teaching courses involving the history of biology and medicine or the social aspects of science. The speakers will discuss their own experiences in teaching such courses and materials they have found useful. Co-chairmen, speakers, and commentator are given on the program. Following the Symposium there will be an open dinner meeting of the CUE in the Windsor Room of the Hotel Adolphus to plan activities for the coming year. Anyone interested in attending this dinner meeting should contact Professor Brush in advance so that adequate space can be reserved.

JOINT SOCIAL SCIENCE RESEARCH AND TRAINING PROGRAM ANNOUNCED BY CENSUS BUREAU AND AMERICAN STATISTICAL ASSOCIATION

A unique three-year social science research and training program aimed at closing the knowledge gap between producers and users of statistical data was announced today by two key participants in the project, the American Statistical Association and the Bureau of the Census, U.S. Department of Commerce. The National Science Foundation (NSF) and the Census Bureau are co-funding the project. For further information, please contact Henry H. Smith, U.S. Department of Commerce, Washington, D.C. 20230.



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