economic structure profoundly, even the well-educated often still think of the computer as a "magical box."

The recommendations of the NAS panel, as well as those likely to emerge from the PSAC panel's study, are intended to promote policies which will dispel the mystery and make the computer an instrument familiar to nearly all students and to most of their elders in the academic community.

—LUTHER J. CARTER

Announcements

The University of Minnesota has established a center for research in **human learning**, supported by the university's graduate school, NSF, and the National Institute of Child Health and Human Development. The center will be composed of staff from the departments of psychology, educational psychology, and child development and from the center for programmed instruction. NIH is offering fellowships for the training program at both pre- and postdoctoral levels. Additional information is available from James J. Jenkins, director of research, Human Learning Center, University of Minnesota, Minneapolis 55455.

Grants, Fellowships, and Awards

The American Microchemical Society is soliciting nominations for its recently established award for "outstanding contributions to the practice or teaching" of **microchemical techniques**. The recipient will deliver a lecture at a meeting of analytical chemists. Nominations should consist of letters, of up to 300 words, citing the nominee's work and giving his name and address. Deadline: *1 April*. (D. B. Sabine, U.S. Vitamin and Pharmaceutical Corporation, Yonkers, New York)

The National Institutes of Health is accepting applications for July 1968 appointments of clinical, research, or staff associates to work in **research and clinical investigation** programs in Bethesda, Maryland. Persons who will begin their internships this July and those who have had more advanced training will be accepted. The recipients of the appointments may be considered for PHS inactive reserve commissions, and for residency deferment under the Commissioned Officer Residency Deferment program, until the effective date of their NIH appointment. Deadline: *9 May*. (Roger Black, Clinical and Professional Education Branch, NIH, Bethesda, Maryland 20014)

The Atomic Energy Commission's division of biology and medicine is offering research contracts to scientists in the various aspects of **radiation biology** for preparing and publishing reviews of scientific areas related to its biomedical research program. Applicants should be prepared to take a 6- to 12-month leave of absence from their regular duties. The division conceives this type of review not as a condensation of existing literature, but as a work which, within its field, "defines the scientific objectives of the field, examines the prevailing concepts or hypotheses, and considers critically the state of existing knowledge." It also offers the opportunity to synthesize new concepts. The contracts pay full salary, travel, and secretarial costs. (Director, Division of Biology and Medicine, AEC, Washington, D.C. 20545)

Courses

Rose Polytechnic Institute will present a series of seminars in **relativity and cosmology**, 13–25 June, in Terre Haute, Indiana. The course is designed for college and university teaching and research staffs; a limited number of advanced graduate students will also be accepted. Financial support for participants may be available. (R. Llewellyn, Physics Department, Rose Polytechnic Institute, Terre Haute, Indiana 47803)

MIT is planning a course on "on-line **computation and simulation**," 22–26 August, in Cambridge. Work will include the on-line OPS system, which was developed in MIT's project MAC and covers a variety of information-processing activities. The program will also take in simulation strategy which becomes important when model construction and running interact. Enrollment is open to people in research and in computer system planning. (Director of the Summer Session, Room E19-356, MIT, Cambridge, 02139)

The Society of Photographic Scientists and Engineers will sponsor a seminar on **photographic systems** for engineers, 11–12 May, in San Francisco. The course is designed for nonphotographic enginers and senior technicians who use photo-optics in their jobs. Emphasis will be on photographic processes and techniques and their applications in measuring, data collection, and information storage methods. Attendance is limited, and advanced registration is required; registration, $30. (Society of Photographic Scientists and Engineers, 1330 Massachusetts Avenue N.W., Washington, D.C. 20005)

A **histochemistry** course for college and university zoology teachers will be offered by Vanderbilt University 31 July to 20 August. Applicants must teach at least one course in some area of zoology and must be interested in histochemistry teaching or research. There will be no tuition fee, and living and travel expenses for 20 participants will be paid from an NSF grant. Application deadline: *1 May*. (B. J. Bogitsh, Box 1733, Station B, Vanderbilt University, Nashville, Tennessee

A course in **cancer chemotherapy** will be held at the University of Texas, 9–21 May. It will review the antimetabolites, alkaloids, alkylating agents, antibiotic hormones, and several newer drugs; it will also include the current approaches in assessment of clinical drugs and management of the cancer patient. (Division of Continuing Education, University of Texas Graduate School of Biomedical Sciences, Texas Medical Center, Houston 77025)

Meeting Notes

An international symposium on **mathematical and computational methods in social sciences** will take place in Rome 4–8 July. The sponsors are the International Computation Center of Rome and the Centre de Calcul, Paris. The meeting will be organized in four sections: anthropology, archeology, psychology, and sociology. (P. Maranda, Department of Anthropology, Peabody Museum, Harvard University, Cambridge, Massachusetts 02138)

The Instrument Society of America is planning its national **analysis instrumentation** symposium 11–13 May in Houston, Texas. Papers are solicited in laboratory and process chromatography; radiation, optical electromechanical, chemical, or physical methods; and sample-handling techniques. Abstracts of 300 words are required.

(George L. Doering, Industrial Nucleonics Corporation, 650 Ackerman Road, Columbus, Ohio 43202)

An international **nephrology** congress will be held in Washington 25–30 September. Sessions of invited and contributed papers are scheduled. Abstracts deadline: *15 May*. Foreign participants may apply for subsistence allowances of $120; deadline: *15 May*. (Secretariat, Third International Congress of Nephrology, 9650 Wisconsin Avenue, Washington, D.C. 20014)

A call for papers has been issued for a conference on **data acquisition and processing** in biology and medicine, scheduled for 25–27 July at the University of Rochester medical school. The topics to be discussed include data acquisition, analysis, and experimental design; exploration in computer-aided diagnosis; acquisition and processing of biomedical images; computer simulation of biological models; real-time biomedical data acquisition and analysis; recording of biological data with microelectrodes; biomedical literature processing and retrieval. Presentation time: 30 to 45 minutes; abstracts deadline: *1 May*. (G. H. Cohen, Department of Electrical Engineering, University of Rochester, Rochester, New York 14627)

A national symposium on **biomedical sciences instrumentation** will be held in Anaheim, California, 16–19 May, sponsored by the Instrument Society of America. The meeting will include "the entire scope of biomedical instrumentation" and will emphasize recent advances. Papers are invited on new and unpublished information. Abstracts of up to 200 words are required. (J. Herrick, Jet Propulsion Laboratory, 4800 Grove Drive, Pasadena, California 91103)

Papers are invited for presentation during a symposium on advances in **tracer methodology**, scheduled for 13–14 October in Boston. The sponsor is New England Nuclear Corporation. Presentation time: 30 minutes; abstracts: 100 to 200 words; deadline: *1 April*. The speakers' travel and living expenses for the symposium will be paid by the company. (Paul A. McNulty, NEN, 575 Albany Street, Boston 02118)

A conference on theory and techniques for calculating properties of **point defects in crystals** will be held in Washington, 1–5 May. Attention will focus on both neutral and charged interstitials and vacancies. Discussion will include energies and entropies of formation, interaction, and motion; configuration and relaxation in the nearby lattice; and electronic and vibrational states at point defects. (A. D. Franklin, National Bureau of Standards, Washington 20234)

The Chemical Institue of Canada is planning a **chemical engineering** conference in Windsor 17–19 October. Papers are invited for presentation on a variety of topics. Submission deadline: *15 April*. (P. M. Reilly, Polymer Corporation, Sarnia, Ontario)

Publications

Copies of the report of the U.S.–Japan planning conference on **pesticides research** are available free of charge from the National Science Foundation. The meeting of U.S. and Japanese pesticides specialists took place last April under the aegis of the U.S.–Japan Committee on Scientific Cooperation. The report contains abstracts of 14 papers summarizing current pesticide research in both countries; it also includes the conference's recommendations for areas of mutually advantageous cooperation. (U.S.–Japan Cooperative Science Program, NSF, Washington, D.C. 20550)

The Public Health Service recently published a booklet describing research grants awarded last year for studies in **environmental engineering and food protection**. The grants, over $4¾ million, were for research in safety and healthful qualities of milk, food, shellfish, and drinking water. ("The Division of Environmental Engineering and Food Protection's Research Grants—FY 1965"; Research Grants Branch, Division of Environmental Engineering and Food Protection, Washington, D.C. 20201. Single copies free)

An inventory of **municipal water facilities** serving U.S. cities of over 25,000 population has been published by the division of water supply and pollution control of the Public Health Service. Facilities listed include entries for source of supply, storage capabilities, treatment provided, average plant output, and needed improvements. (*Municipal Water Facilities, Communities of 25,000 Population and Over*, PHS Publication No. 661, 1964 edition. Information Program, Federal Water Pollution Control Administration, Washington, D.C. 20203. Free of charge)

The National Science Foundation last month released a report on **scientific and engineering manpower in Communist China** since 1949. In 588 pages, the report covers such categories as training, employment, and utilization of manpower; effects of government controls; Sino-Soviet cooperation in training manpower; and the influence of Western-trained scientists and engineers. It discusses changing policies of the Chinese Communist party and prominent aspects of foreign relations and other matters relevant to the development of scientific and engineering manpower. It also includes biographical data on 1200 prominent scientists and engineers.

The study was completed by Chu-yuan Cheng while he was a research professor in the Institute of Far Eastern Studies at Seton Hall University. He is now at the University of Michigan. (*Scientific and Engineering Manpower in Communist China, 1949–1963*. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. $2)

Scientists in the News

Three U.S. scientists have been elected members of the Academy of Sciences of the U.S.S.R. They are:

Herman F. Mark, professor of chemistry at Brooklyn Polytechnic Institute and a researcher on high polymer chemistry.

Severo Ochoa, chairman of the biochemistry department at New York University and winner of the 1959 Nobel Prize in medicine for his work on the chemical basis of heredity.

Richard Courant, professor emeritus and former head of the mathematics department at NYU, for whom the Courant Institute of Mathematical Sciences is named.

There are three other U.S. members of the Soviet Academy: **Detlev W. Bronk**, president of the Rockefeller University; **Linus C. Pauling**, chemistry professor at Caltech; and **Peter J. W. Debye**, professor emeritus of chemistry at Cornell.

William C. Orr, professor of chemistry at the University of Connecticut, has been named associate provost of the university.

Jerome Sutin, associate professor of anatomy at Yale, has been appointed professor and chairman of anatomy at Emory University's division of basic health sciences.

John C. Frye, chief of the Illinois Geological Survey, has been elected president of the American Geological Institute.

Roland A. Coulson, professor of biochemistry at Louisiana State University medical school, has become associate dean for graduate studies, LSU medical center.

Battelle Memorial Institute has appointed **Earl W. Lindveit** senior scientist in its new science policy program. He had been secretary of the committee on sponsored research at the American Council of Education.

Norman R. Scott, professor of electrical engineering at the University of Michigan, has been appointed associate dean of the engineering college.

A. J. Mooradian, formerly director of the development engineering division at Atomic Energy of Canada, Ltd., Chalk River Nuclear Laboratories, has been appointed managing director of the Whiteshell Nuclear Research Establishment, Pinawa, Manitoba.

Richard J. Winzler, formerly head of the University of Illinois's biochemistry department, has become professor and chairman of the biochemistry department at the State University of New York at Buffalo.

James F. Hammarsten, professor of medicine at the University of Minnesota, will become Carl Puckett professor of respiratory disease at the University of Oklahoma, effective 1 May.

Calvin W. Woodruff, formerly professor of pediatrics at the University of Michigan, has become professor of pediatrics at the University of Missouri.

Harry Most, chairman of the department of preventive medicine at New York University medical school, has been elected president of the American Society of Tropical Medicine and Hygiene.

LeRoy Allen Pesch, chairman of the department of medicine at Rutgers medical school, has been appointed associate dean and professor of medicine at Stanford University.

Harlow W. Ades has become a professor in the electrical engineering department and in the department of physiology and biophysics at the University of Illinois. He had been chief of the neurological sciences division, U.S. Naval Aerospace Medical Institute, Pensacola, Florida.

Stan D. Vesselinovitch, formerly assistant director of the department of cancer research at Michael Reese Hospital and Medical Center, has been appointed associate professor of oncology at the Chicago Medical School.

William F. Scherer, chairman of Cornell's microbiology department, has been appointed director of the Commission on Viral Infections of the Armed Forces Epidemiological Board. He has been a member of the commission since 1961. The commission is composed of scientific investigators who are conducting research supported by the Defense Department; it serves as an advisory group to the Surgeon General.

X. J. Musacchia, formerly professor of biology at St. Louis University, has become professor of physiology in the University of Missouri medical school and senior investigator in the university's space sciences research center.

Michael M. May, theoretical physicist at Lawrence Radiation Laboratory and associate director for nuclear design from 1962–1964, has been appointed director of the laboratory, succeeding **John S. Foster**, new director of defense research and engineering for the Defense Department.

Paul L. Munson, professor of pharmacology at Harvard's school of dental medicine, has become chairman of the department of pharmacology at the University of North Carolina medical school. He succeeds **Thomas C. Butler**, who will direct a pharmacology and toxicology research and training center to be established at the university.

Dean Burk and **Mark Woods**, of the National Cancer Institute's laboratory of biochemistry, have received the Gerhard Domagk prize for cancer research from the Domagk Foundation at the University of Westphalia, Germany. The award, which carries a $5000 honorarium, cites their metabolism studies which they reported in a paper on the relationships of glucose fermentation to growth rates in Morris hepatomas.

Gene H. Gleissner, formerly assistant director for computation in the computation and analysis laboratory, Naval Weapons Laboratory, Dahlgren, Virginia, has been appointed associate technical director and head of the applied mathematics laboratory of the Navy's David Taylor Model Basin.

The Institute of Electrical and Electronics Engineers has elected **William G. Shepherd** president for 1966. He is vice president, academic administration, of the University of Minnesota.

J. Wyatt Durham, of the University of California, Berkeley, has been elected president of the Paleontological Society of America.

Robert L. Kahn, formerly head of the section on psychology in the division of psychiatry at Montefiore Hospital and Medical Center, New York, has been appointed associate professor in the department of psychiatry at the University of Chicago. He is to establish a clinical research gerontology program at the school.

Jack L. Hough, research geologist and professor of geology at the University of Michigan, has been elected president of the Society of Economic Paleontologists and Mineralogists.

N. P. Kefford, principal research officer at the division of plant industry of Australia's Commonwealth Scientific and Industrial Research Organization, has been appointed chairman of the botany department at the University of Hawaii.

Walter E. Boek, former visiting professor at the University of Maryland and director of research for the Montgomery County Mental Health Center, is the president of the recently formed National Colleges of Science and Arts, a science-oriented graduate university in Rockville, Maryland. Classes began this fall on a limited scale in rented quarters, with permission of state authorities, as stipulated by law, until necessary accreditation requirements have been met.

Eugene Lukacs, director of the statistical laboratory at Catholic University, Washington, is on leave for the 1965–1966 academic year, at the University of Vienna and at the Sorbonne. **Edward Batschelet**, professor of mathematics, is acting director of the laboratory.

Charles M. Vaughn has become professor and chairman of the department of zoology-physiology at Miami University, Oxford, Ohio. He has been on leave as chairman of the department of zoology at the University of South Dakota to serve as program director in the research training and academic year program, NSF.

W. Dexter Whitehead, Jr., a nuclear physicist at the University of Virginia, has been named director of the university's Center for Advanced Studies in the Sciences.

Major Contracts and Grants

NSF grants totalling nearly $2 million have been given to 50 American educational and research institutions under the Foundation's **Cooperative College—School Science Program**. The funds are to be used to help schools and school systems planning improvements in their science and mathematics courses. This includes additional training for elementary- and secondary-school teachers, introducing new course materials in classrooms, and, in some projects, providing special classes for advanced high school students.

Several of the projects will be oriented toward research and will provide opportunity for teachers and students to work for various periods with university staffs on projects of mutual interest. The grantee institutions select their own participants; information and applications are available from the directors of the individual projects, not from NSF. Listings of the grant recipients are available from NSF; address CCSS Program, NSF, Washington, D.C. 20550.

The National Institute of Neurological Diseases and Blindness has awarded the University of Miami a grant of more than $1 million to establish a research **center for cerebral vascular diseases**. The NIH funds will provide for staff, equipment, and operating costs over a 5-year period. The objective of the center is to develop more effective treatments and preventive measures. Studies will be conducted on the natural history of cerebral vascular disease in patients and on blood flow in the brain. Plans also call for installation of an electron microscope to study the ultrastructure of brain cells and blood vessels. Expanded work will be done on brain chemistry. Peritz Scheinberg, chairman of the neurology department, will be the principal investigator for the center.

The University of Michigan has received a 2-year, $1.3 million contract to develop a new **computer language**. The aim of the project is to help computer users carry out more complicated operations than they can at present. The work will be based on the Michigan Algorithm Decoder (MAD) language, which was developed at the university's computing center, and on work done at MIT by Ivan Sutherland. The new family of languages will be called COMET, for "conversational MAD extendable for terminal devices." Frank H. Westervelt, engineering professor, is project director.

The Department of Health, Education, and Welfare has given the Georgia State Board of Education a grant of nearly $864,000 to build an **educational television production center** in Atlanta and to help activate an ETV channel in Wrens, Georgia. The center will serve an 11-station network, covering most of Georgia and parts of South Carolina.

The University of Pennsylvania has received a 5-year grant from the National Institute of Allergy and Infectious Diseases for research on **cell structure and physiology.** The $1,200,000 award is to pay for the entire research program in the medical school's department of therapeutic research. Work will include both animal and bacterial cells. Seymour S. Cohen, chairman of the department, will administer the funds.

PHS grants totaling more than $550,000 have been awarded to establish four **artificial kidney centers.** Recipients of the grants are Mount Sinai Hospital, Cleveland; University of Virginia medical school, Charlottesville; Emory University, Atlanta; and Minneapolis Medical Research Foundation. The grants will cover construction and partial operating costs of the centers for 3 years, during which the recipients must find community support for continuing operations.

The following contracts and grants have also been awarded:

The National Science Foundation has announced the following awards of **Science Development Grants:**

Louisiana State University: $3,787,000; for staff, equipment, and faculty services in the departments of chemistry, geology, mathematics, and physics.

Polytechnic Institute of Brooklyn: $3,332,000; expansion of visiting scientist and sabbatical programs, increased emphasis on graduate and part-time study; new faculty.

University of Southern California: $4,473,000: construction of building for graduate training and research in solid state sciences; new faculty and programs in material sciences; increased research in aerospace, engineering, chemistry, geology, physics.

Research

Denver Research Inst., Univ. of Denver: $110,000, U.S. Air Force; vibration of aerospace structures and development of design solutions; R. Szilard, principal investigator.

University of Illinois: $120,000, NSF; genetic, chemical, and immunologic studies of serum protein allotypes; S. Dray, principal investigator.

New York Univ.: $381,605, NIH; 5-year training program in basic and experimental hematology; A. S. Gordon, director.

University of Notre Dame: $181,000, John A. Hartford Foundation; studies of natural resistance in carcinogenesis and in experimental surgery with germfree rodents; M. Pollard and R. Wilson, chief investigators.

University of Rochester, N.Y.: $136,753, John A. Hartford Foundation; electroencephalography of babies *in utero*; M. Rosen, principal investigator.

University of Utah: $217,000, PHS; effects of air pollutants on plant growth; A. C. Hill, principal investigator.

University of Wisconsin: $175,000, NASA; cosmic and solar physics research; W. L. Kraushaar and F. Scherb, chief investigators.

Construction

Lehigh Univ.: $250,000, U.S. Office of Education; engineering and science research library.

Stewart and Bennett, Inc., Rochester, N.Y.: $1.5 million, Cornell Univ.; space research center.

The following grants have been made by the Dept. of HEW to activate ETV channels:

Nebraska ETV Commission: $219,819; channel 9, North Platte; $187,851, channel 13, Alliance.

South Carolina ETV Commission; $296,220; channel 35, Columbia.

Tennessee State Board of Education: $228,388; channel 11, Lexington.