

Personnel Placement

POSITIONS WANTED

Innovative Aquatic Zoologist/Ecologist. Ph.D. seeks half-time teaching position. Experience in university instruction (8 years at a major institution) and research and water pollution consulting (7 years). Publications. Recently completed an academic year with a U.S. government environmental group (familiar with new approved methodologies, resources, and regulations). Wishes to teach biology, zoology, and/or environmental courses. Schedule can be flexible. Will be available January 1980. Box 283, SCIENCE. 10/5, 12, 19

Fish Nutritionist/Toxicologist. Ph.D. 1978. Training in research on the nutrient requirements of finfish, vitamin and mineral metabolism, nutrient-environment interrelationships, diet formulation, processing and evaluation, amelioration of environmental toxicants. Teaching experience. Publications. Seeks research position in university or government. Box 262, SCIENCE. 10/5

Molecular Biochemist/NMR Spectroscopist. Ph.D. Experience in conformations, interactions, and function of polypeptides and proteins using high-field FT NMR techniques. Publications. Desires an independent or a long-term collaborative research faculty position starting at the Assistant Professor level. Available immediately. Box 281, SCIENCE. X

Pharmacologist/Toxicologist. Ph.D. Semi-retired professor with extensive experience in drug screening, scientific writing, and prepublication editing. College laboratory facilities available. Desires position as consultant. John F. Reinhard, 41 Bay View Road, Wellesley, Mass. 02181. Telephone: 617-238-1797 (home); 617-734-6700, extension 154 (office). 10/5, 12, 19, 26

Pharmacologist. Ph.D. 1977. Cardiovascular, autoimmune training. Two years of postdoctoral research in biochemical and behavioral pharmacology. Seeks position in government or industry. Box 282, SCIENCE. X

Radiobiology-Biochemistry-Medical Sciences. Honors M.S. plus 100 graduate hours, B.S., B.A. VA isotope laboratory experience, cell research, cancer. Seeks research associate/biomedical engineering position hospital, university, VA, cancer laboratory (GS 12 minimum). Describe. 1613 74th Street, Kenosha, Wisconsin 53140. X

POSITIONS OPEN

ANATOMIST/HISTOLOGIST. Tenure-track assistant or associate professorship beginning 25 August 1980 (14 January 1980, if candidate available). Instruction responsibilities in undergraduate teaching of rigorous courses in primate anatomy (monkey used for dissection), histology, and general biology and to eventually assume responsibility for teaching anatomy and physiology of speech (monkey used for dissection). Candidate must have Ph.D., preferably in anatomy or histology and should have had gross anatomy in a medical college. Salary dependent upon qualifications. Deadline: until filled. Send letter of application, résumé, transcripts, and three letters of reference to: **Dr. Philip G. Beasley, Chairman, Department of Biology, University of Montevallo, Montevallo, Alabama 35115. An Equal Opportunity/Affirmative Action Employer.**

ASSISTANT PROFESSOR OF BIOCHEMISTRY

Tenure-track appointment, September 1980 (in addition to physical biochemistry position, *Science*, 10 and 17 August 1979). Send transcripts, résumé, reprints of your two most significant papers, and a brief research proposal and have four reference letters sent to: **Search Committee, Biochemistry/Biophysics Program, Washington State University, Pullman, Wash. 99164.** Screening starts 1 December.

Washington State University is an Affirmative Action/Equal Opportunity Employer. Women, minority, and handicapped individuals are encouraged to apply.

POSITIONS OPEN

ANATOMIST. The School of Medicine, Southern Illinois University, Department of Anatomy, is seeking a qualified anatomist to teach gross anatomy. Necessary qualifications include M.D. or Ph.D. experience in teaching gross anatomy and a major involvement in research. Rank and salary in this tenure-track position are open and depend on experience and qualifications. Interested and qualified persons are invited to send letters of application to: **Office of the Associate Dean, Anatomy Search Committee, School of Medicine, Southern Illinois University, Carbondale, Illinois 62901.** Applications must be postmarked by 15 February 1980. *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT ADJUNCT PROFESSOR

Director of Continuing Education at new university based Center for Occupational Health and Safety. Degree in education plus advanced degrees, publications, and experience in subject areas directly related to occupational health and safety. Teaching experience at secondary school, undergraduate, and graduate levels essential.

Experience required with organization and presentation of continuing education courses for health and safety professions. Experience with curriculum centers and knowledge of health and safety literature and available educational materials highly desirable.

Applications will be accepted until the position is filled. *Applications from all qualified candidates are welcome; minorities and women are encouraged to apply.* Send curriculum vitae and names of three references to:

**B. Dwight Culver, M.D.
Professor and Director
Center for Occupational Health and Safety
Department of Community and
Environmental Medicine
University of California, Irvine
Irvine, California 92717**

Title: ASSISTANT PROFESSOR.

Qualifications: Ph.D. IN ANIMAL PHYSIOLOGY.

Responsibilities: Teaching general physiology, cell physiology, anatomy, and physiology and be involved in developing an advanced physiology course; supervision of graduate students in areas of specialization; initiation of vigorous research program in area(s) of major interest. This is a tenure-track position.

Salary: Negotiable.

Date Available: January 1980.

Application: Forward letter of application, official transcripts, curriculum vitae, and three letters of recommendation to:

**Dr. James D. Yarbrough
Professor and Head
Department of Biological Sciences
Mississippi State University
P.O. Drawer GY
Mississippi State, Miss. 39762**

Mississippi State University is an Equal Opportunity Employer.

Application deadline is 1 November 1979.

ASSISTANT PROFESSOR, TEMPORARY

Applications are invited for a temporary position (spring 1980). Teaching historical geology and invertebrate paleontology; Ph.D. desired; application deadline is 30 November 1979. Send résumé and names of references to: **Dr. M. Kontrovitz, Geosciences, Rider College, Lawrenceville, N.J. 08648.** *Rider College is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR

Opening for a junior faculty position is anticipated beginning summer 1980. Applicants must have a doctoral degree with training in Molecular Immunology, a minimum of 2 years of postdoctoral experience, and an established publications record. Send curriculum vitae, names of three references, and a detailed description of proposed research program by 31 October to: **Dr. Barry Harris, Division of Genetics and Molecular Medicine, Meharry Medical College, School of Graduate Studies, 1005 18th Avenue North, Nashville, Tenn. 37208.** *Meharry Medical College is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF BIOLOGY

A tenure-track position, beginning 1 January 1980, for an individual with a Ph.D. in animal physiology. Course responsibilities will include cell physiology and organismal physiology (capabilities with both plant and animal material expected) with participation in team-taught courses of general biology, senior reading, and independent study. Interested candidates should forward their curriculum vitae, three letters of reference, and a summary of their research interest by 1 November 1979 to: **Professor Lester Hearson, Department of Biology, Wabash College, Crawfordsville, Indiana, 47933.** *An Equal Opportunity/Affirmative Action Employer.*

HARVARD SCHOOL OF PUBLIC HEALTH ASSISTANT PROFESSOR OF EPIDEMIOLOGY

The Harvard School of Public Health invites applications for positions as assistant professor of epidemiology. One of these appointments may be made jointly with the Sidney Farber Cancer Institute. These appointments will be for 3-year terms and will be supported by grants and/or contracts. Reappointment will depend on the development of financial support, as well as on reviews of academic performance. Funds are now available for the development of the departmental teaching program and for research into the epidemiology of cancer. Consideration will be given to applicants with other interests but appointment of such persons will depend on obtaining financial support from outside the school. Doctorate in epidemiology, or equivalent in published research, required. Teaching experience desirable.

Curriculum vitae, reprints, and names of three referees may be sent to **Dr. Brian MacMahon, Department of Epidemiology, Harvard School of Public Health, 677 Huntington Avenue, Boston, Mass. 02115,** before 1 December 1979.

Harvard University is an Equal Opportunity Employer with an Affirmative Action Program. Qualified women and minority group members are encouraged to apply.

ASSISTANT PROFESSOR—SOIL SCIENCE

Available immediately at University of Wisconsin-Madison. A tenure-track position, budgeted about 70 percent extension and 30 percent research. A Ph.D. in soil fertility, soil chemistry, and agronomy required. Farm background and experience in extension work is highly desirable. Responsible for developing extension and research programs in soil fertility, with emphasis on agronomic production and environmental pollution. Competitive salary. Send curriculum vitae, supporting material, and three letters of professional recommendation to: **Dr. D. R. Keeney, Department of Soil Science, University of Wisconsin-Madison, Madison, Wis. 53706.** Closing date is 15 October 1979. *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR applications are invited for a position in the Biology Department, Roosevelt University, available January 1980. Teaching responsibilities will include **Genetics and Population Ecology.** Earned doctorate and postdoctoral experience desirable. Applications, including curriculum vitae, statement of research interests, and the names of three references, should be sent by 15 October 1979 to **Dr. J. Green, Chairman, Department of Biology, Roosevelt University, 430 South Michigan Ave., Chicago, Ill. 60605.**

ASSISTANT PROFESSOR VIROLOGIST

Two-year appointment with the possibility of tenure track. Salary commensurate with experience. To teach two half-year lecture courses in virology at the third- and fourth-year levels plus one half-year virology techniques laboratory. The candidate should have a Ph.D., some postdoctoral experience, and be capable of developing a research program in virology. Excellent research facilities including tissue culture, radioisotope, and biohazard containment laboratories are available. The position is to start 1 January 1980, or as soon as a suitable candidate can be found. Curriculum vitae with names of three references should be sent not later than 15 December 1979 to:

**Chairman
Department of Biology
University of New Brunswick
Fredericton, N.B.
Canada E3B 5A3**

POSITIONS OPEN

UTAH STATE UNIVERSITY: The Department of Chemistry and Biochemistry is seeking an **ASSISTANT PROFESSOR** for a tenure-track position, available on or after 1 January 1980. Preference will be given to candidates whose training and research interests are in biochemistry, bioorganic, bioinorganic, or biophysical chemistry. Serious consideration, however, will be given to outstanding candidates in any field. Background in modern analytical techniques desirable. Postdoctoral experience required. Successful candidate will be expected to teach undergraduate and graduate courses and to develop a strong research program. Send résumé, transcripts, description of proposed research, and three letters of reference to: **Dr. E. A. Boeker, Department of Chemistry and Biochemistry, Utah State University, Logan, Utah 84322**, by 1 November 1979. *An Equal Opportunity/Affirmative Action Employer.*

ASSOCIATE DIRECTOR FRACTIONATION AND PLASMA PRODUCTS

Ph.D. or M.D. needed to provide leadership and direction to Red Cross Blood Services, fractionation services including plasma products and R & D activities related to plasma. Headquartered in Washington, D.C. Attractive benefits, salary commensurate with experience in field of plasma and plasma products, and demonstrated management. Send curriculum vitae or résumé to **Ms. Ruth Straub, Personnel Office, American Red Cross, 18th and E Streets, NW, Washington, D.C. 20006**. *Equal Opportunity Employer M/F.*

BIOCHEMIST

The Department of Biochemistry and Surgery are jointly seeking a faculty member (**RESEARCH ASSISTANT PROFESSOR**) with research interests in carcinogenesis, steroids, and nutritional biochemistry, as they relate to ongoing clinical research which deals with polyposis coli. Competitive salary, excellent benefits, and well-equipped research facilities. Applicants with either an M.D. or Ph.D., and postdoctoral experience in biochemistry or a related area, should send their curriculum vitae, bibliography, and names of references to **Dr. Eugene G. Sander, Chairman, Department of Biochemistry, West Virginia University Medical Center, Morgantown, West Virginia 26506**, no later than 1 November 1979. *West Virginia University is an Equal Opportunity/Affirmative Action Employer.*

SIMON FRASER UNIVERSITY Burnaby, British Columbia Department of Chemistry APPOINTMENT IN BIOCHEMISTRY

Applications are invited for a tenure-track appointment at the assistant professor rank, preferably with specialization in the area of macromolecular biochemistry, starting 1 September 1980. The appointment is subject to budgetary approval. The successful applicant will be required to teach graduate and undergraduate courses in biochemistry and to establish a vigorous research program.

The current base of the assistant professor rank is \$19,720 per annum.

Applications, including curriculum vitae, a concise statement of proposed research, and the names of three referees, should be sent by 31 December 1979 to:

**Dr. C. H. W. Jones, Chairman
Department of Chemistry
Simon Fraser University
Burnaby, British Columbia, Canada V5A 1S6**

BIOCHEMIST. The Department of Chemistry at the University of Oklahoma invites applications for a permanent faculty position in biochemistry. Minimum qualifications include a Ph.D. in biochemistry or chemistry and excellent credentials in, as well as a strong commitment to, both teaching and research in biochemistry. The successful applicant will be expected to teach at both the undergraduate and graduate level and to maintain an active research program. The appointment will be made at the rank of professor, associate professor, or assistant professor, depending on background and experience. Applicants should submit a complete résumé, including research and teaching experience, future research plans, and any other supporting material, and have at least three letters of reference sent to: **Professor Eddie Carol Smith, Chairperson of the Search Committee, Department of Chemistry, University of Oklahoma, 620 Parrington Oval, Norman, Oklahoma 73019**. Applications must be postmarked by 1 November 1979. *The University of Oklahoma is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF MICROBIOLOGY

The Department of Microbiology and Immunology, Washington University School of Medicine, invites applications from highly qualified individuals for an appointment as assistant professor. Applicants should have Ph.D. or M.D. degrees, 2 to 5 years of postdoctoral research experience, and a commitment to medical and graduate student teaching. Teaching competence should be in pathogenic microbiology; research interests should be in microbiology. Send curriculum vitae, brief description of research plans, and names of three referees to: **Dr. Joseph M. Davie, Department of Microbiology and Immunology, Washington University School of Medicine, St. Louis, Mo. 63110**, by 1 November 1979. *Equal Opportunity/Affirmative Action Employer, M/F/H.*

ASSISTANT PROFESSOR OF PLANT BIOLOGY

A well-equipped modern Department of Biological Sciences located outside Baltimore is seeking a plant biologist with postdoctoral experience, who has demonstrated an ability to initiate a vigorous research program and has a commitment to quality graduate and undergraduate teaching. Candidates should have a strong background in physiology and/or biochemistry of plant systems, specializing in areas such as morphogenesis, tissue culture, plant hormones, water relations, algology, or virology. Submit curriculum vitae, bibliography, names of suggested referees, and a description of research interests to: **Dr. Thomas F. Roth, Chairman, Faculty Search Committee, Department of Biological Sciences, University of Maryland Baltimore County, Catonsville, Maryland 21228**. *An Equal Opportunity/Affirmative Action Employer.*

BIOLOGY. Liberal arts college for women has two tenure-track positions at the **Assistant Professor** level available August 1980. Ph.D. required and establishment of research program expected. Send transcripts, curriculum vitae, a statement of research and teaching goals, and three letters of recommendation by 15 November 1979. **INVERTEBRATE ZOOLOGIST** to teach one semester of an introductory biology course for nonscience majors and an upper level course for biology majors in speciality. Persons with experience given preference. Write to General Biology Search Committee. **PHYSIOLOGIST** to teach a course in general physiology (plant and animal) for biology majors and a human physiology course for nursing majors. Write to **Physiology Search Committee, Department of Biology, Saint Mary's College, Notre Dame, Indiana 46556**. *An Equal Opportunity/Affirmative Action Employer*

UNIVERSITY OF MICHIGAN

CLINICAL PSYCHOLOGIST. The Veterans Administration Medical Center, Ann Arbor, Michigan, is currently seeking a full-time staff clinical psychologist. This position is for a person familiar with a general medical center environment and with a psychiatric in-patient setting in particular. Duties will include working with the Chief of Psychology to further develop and eventually to coordinate activities in the area of psychological consultation and liaison to other services in the medical center and university. The Ann Arbor VA Medical Center is fully integrated into the teaching and clinical programs of the University of Michigan and the position carries a joint appointment in the university. The position requires an active commitment to academic pursuits. Salary is competitive and commensurate with training and experience. Send curriculum vitae and letter of interest to: **Chief, Psychology Service (116B), VA Medical Center, 2215 Fuller Road, Ann Arbor, Michigan 48105**. *A nondiscriminatory, Affirmative Action Employer.*

DIAGNOSTIC MICROBIOLOGIST, University of Pennsylvania (*an Affirmative Action Employer*). Qualifications: Ph.D. or V.M.D./Ph.D. in microbiology, experience in conducting diagnostic service and independent research activities. Responsibilities: to head microbiology diagnostic laboratory for Large Animal Hospital and New Bolton Center campus; to conduct independent and coordinate cooperative research activities with Veterinary School faculty in the area of microbiology; and to participate in classroom teaching, seminar programs and student independent studies. Available immediately; salary and level of appointment based on qualifications. Send detailed curriculum vitae and names of five referees to: **Chairman, Department of Clinical Studies, University of Pennsylvania, School of Veterinary Medicine, New Bolton Center, 382 West Street Road, Kennett Square, Pa. 19348**.

POSITIONS OPEN

CHAIRPERSON, DEPARTMENT OF BIOLOGY UNIVERSITY OF HOUSTON

Applications are invited for the position of Chairperson, Department of Biology, University of Houston College of Natural Sciences and Mathematics. We seek a candidate with a distinguished record of research and teaching whose credentials would qualify that individual for appointment as full professor of biology. Preference will be given to an individual having demonstrated excellence in providing leadership necessary for the development of both research and training programs. Curriculum vitae, selected reprints, and names of three references should be sent to:

**Joseph P. Buckley, Ph.D., Chairman
Biology Chair Search Committee
141 SR2—University of Houston
Houston, Texas 77004**

The University of Houston is an Equal Opportunity/Affirmative Action Employer.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL

An active search is being conducted for a **CHAIRPERSON** to head the **DEPARTMENT OF CELL BIOLOGY AND ANATOMY** at Northwestern University Medical School. An expanding role in research on cell structure and function is anticipated for this department as part of the life sciences program at Northwestern University. The new chairperson will be expected to effectively direct this rapidly growing program in experimental cell biology. Excellence in teaching of human gross anatomy, neuroanatomy, histology, and subcellular structure is a primary goal of the Department of Cell Biology and Anatomy. Candidates for this appointment should consequently be capable of imaginative and effective approaches to medical and graduate education in anatomy and cell biology. Send applications or nominations for this position to: **P. Y. Paterson, M.D., Chairman, Advisory-Search Committee for the Department of Cell Biology and Anatomy, Room 6-241, Ward Building, Northwestern University Medical School, 303 East Chicago Ave., Chicago, Illinois 60611**. *Northwestern University is an Equal Opportunity/Affirmative Action Employer.*

UNIVERSITY OF MICHIGAN

CLINICAL PSYCHOLOGIST (NEUROPSYCHOLOGIST): The Veterans Administration Medical Center, Ann Arbor, Michigan, is currently seeking a full-time staff clinical psychologist. This position is for a person trained in the methods and techniques of clinical neuropsychology. This individual will work with the Chief of Psychology to develop and eventually coordinate a neuropsychological and general psychological assessment program. The Ann Arbor VA Medical Center is fully integrated into the teaching and clinical programs of the University of Michigan, and the position carries a joint faculty appointment in the university. This position requires an active commitment to academic pursuits. Salary is competitive and commensurate with training and experience. Send curriculum vitae and letter of interest to: **Chief, Psychology Service (116B), Veterans Administration Medical Center, 2215 Fuller Road, Ann Arbor, Michigan 48105**. *A nondiscriminatory, Affirmative Action Employer.*

DEAN, SCHOOL OF BIOLOGICAL SCIENCES

The University of California, Irvine, invites applications for the position of Dean of the School of Biological Sciences and professor of biological sciences. The dean has academic and administrative responsibility for the school and reports to the executive vice chancellor. Preference will be given to those whose research areas complement those of the existing faculty. Candidates for the position should have a strong background in research and teaching suitable for an appointment as full professor in the University of California and demonstrated administrative experience.

All qualified applicants are welcome; women and minorities are encouraged to apply. To ensure consideration, applications, including complete curriculum vitae, list of publications, and names of three references, should be submitted no later than 15 October 1979 to:

**Professor Everly B. Fleischer, Chair
Dean Search Committee
School of Physical Sciences
University of California, Irvine
Irvine, California 92717**

POSITIONS OPEN

CHANCELLOR University of Maryland at Baltimore

The Chancellor is the chief administrative officer of the Baltimore City campus, reporting directly to the University president of the five-campus University of Maryland system. The position requires a person with academic background, demonstrated administrative skills, and, above all, leadership ability.

The Baltimore City campus is a unique combination of professional and graduate institutions. The Schools of Dentistry, Law, Medicine, Nursing, Pharmacy, Social Work and Community Planning, and a Graduate School are located on the campus with the University of Maryland Hospital, the major clinical/training site for University students in the health and allied health fields. The annual budget for the Baltimore campus includes funds of about \$100 million and hospital funds of \$90 million. Approximately 4400 students are enrolled in degree programs.

The campus is located on 28 acres in downtown Baltimore, adjacent to the heart of the city's commercial and office district which is fast becoming one of the great success stories of urban revitalization.

Applications should include a current résumé. Nominations should include the nominee's current position. Applications or inquiries will be considered confidential if desired, and do not imply commitment to the position.

Applications and nominations are to be postmarked not later than 22 October 1979 to **R. Lee Hornbake, Chairman, Chancellor Search Committee, University of Maryland at Baltimore, Bressler Building, 29 South Greene Street, Baltimore, Maryland 21201.** The University is an Equal Opportunity/Affirmative Action Employer.

DEVELOPMENTAL BIOLOGIST

The Department of Biology of the University of Rochester invites applications for a tenure-track position at the level of **Assistant or Associate Professor**. Appointment to begin January or September 1980. Candidates should have demonstrated excellence in research in some area of developmental biology. Persons working on plant systems or studying cell-cell interactions are especially encouraged to apply. A commitment to both undergraduate and graduate teaching in developmental biology is also prerequisite for the position. Applicants should send a curriculum vitae, a statement of research interests, and have three letters of recommendation sent to:

**Chairman, Developmental Biology Search Committee
Department of Biology
University of Rochester
Rochester, New York 14627**

The University of Rochester is an Affirmative Action/Equal Opportunity Educational Institution.

UNIVERSITY OF CHICAGO FACULTY POSITIONS IN CELL OR TISSUE BIOLOGY

The Department of Biology invites applicants for two faculty appointments from individuals with research interests in cell or tissue biology. Applicants should have demonstrated aptitude to develop independent research programs, and willingness to participate with others in a course in cell and tissue biology for freshman medical students. Send curriculum vitae, bibliography, and reference names and addresses to: **Dr. Hewson Swift, Department of Biology, University of Chicago, 1103 East 57 Street, Chicago, Illinois 60637.**

The University of Chicago is an Equal Opportunity/Affirmative Action Employer.

The Department of Chemistry and the Institute of Geophysics and Planetary Physics of the University of California, Los Angeles, are seeking a new **FACULTY MEMBER**; it is expected that the appointment will be made at a senior level. We are especially interested in applicants whose publications document outstanding research in chemical or biomedical studies bearing on the origin or earliest evolution of life, but we would consider exceptional applicants whose research is at the interface between chemistry and earth science. Candidates should be able to teach courses in the chemistry curriculum. *The University of California is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minority candidates.* Applications, including a curriculum vitae, list of publications, and a list of persons who could provide references, should be received by 1 December 1979 and directed to: **Associate Director, Institute of Geophysics and Planetary Physics, University of California, Los Angeles, Calif. 90024.**

POSITIONS OPEN

Academic **CLINICAL PHARMACOLOGIST** with strong analytical chemistry background at **Assistant or Associate Professor** level to organize and head a clinical pharmacology research laboratory dedicated to research in the epilepsies and related neurological disorders. There will be collaboration with current clinical programs in neuropharmacology, neuro-epidemiology, and neuropsychiatric research and coordination with activities currently ongoing in the Department of Neurology of the College of Physicians and Surgeons of Columbia University at the Neurological Institute. *Affirmative Action Equal Opportunity Employer.* Those interested send curriculum vitae to: **Eli S. Goldensohn, M.D., Coordinator COAP, Neurological Institute, 710 West 168 Street, New York, New York 10032.**

DIRECTOR UNIVERSITY OF CALIFORNIA LAWRENCE BERKELEY LABORATORY BERKELEY, CALIFORNIA

Applications are invited for directorship to begin 1 January 1980. Director is responsible for management of laboratory with more than 3000 staff, annual budget approximately \$130 million; overall management of research programs; negotiation of funding support through major contract between the University of California and the Department of Energy. Research programs are carried out in nine divisions—Accelerator and Fusion Research, Biology and Medicine, Chemical Biodynamics, Earth Sciences, Energy and Environment, Materials and Molecular Research, National Resource for Computation in Chemistry, Nuclear Science and Physics, and Computer Science and Mathematics. The laboratory is operated under contract with the Department of Energy.

Applicants should have demonstrated administrative ability in the conduct of substantial organizations and an extensive scientific and technical record.

Applicants should send current résumé by 19 October 1979 to **President, 714 University Hall, System-wide Administration, University of California, Berkeley, California 94720.**

An Equal Opportunity Employer

Department Head Position

Nominations and applications are invited for the position of Head, Electrical Engineering Department, Carnegie-Mellon University. Qualifications sought include earned doctorate, established reputation in Electrical Engineering, experience in teaching and education, leadership and administrative abilities. Candidates should qualify for the rank of Full Professor. Applications, including resume, list of publications and references should be received prior to November 15, 1979.

Contact:

**Dr. M.H. Kryder
Chairman, Search Committee
Electrical Engineering
Department
Carnegie-Mellon University
Pittsburgh, PA 15213**

Carnegie-Mellon University is an Equal Opportunity Employer.

POSITIONS OPEN

EMBRYOLOGIST Temporary Position—1980-81 EMORY UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF ANATOMY

A temporary appointment, not to exceed 1 year, to replace a faculty member on sabbatical leave will be available for an embryologist experienced in teaching organogenesis and mammalian developmental biology to medical students. Instructional responsibility includes 20 lectures during the period mid-September to mid-December 1980 and laboratory instruction in gross anatomy. Opportunities are available for collaborative research with department faculty during the period of residence. Deadline for receipt of applications is 15 November 1979. Interested individuals should send curriculum vitae and names of three references to: **Dr. Jerome Sutin, Chairman, Department of Anatomy, Emory University School of Medicine, Atlanta, Georgia 30322.**

Emory University is an Affirmative Action, Equal Opportunity Employer.

The Department of Aeronautics and Astronautics, Stanford University, seeks an outstanding person for appointment to a **SENIOR FACULTY POSITION** in the field of computational fluid dynamics. Candidates must be widely recognized to have proven their excellence in research related to the numerical analysis of gasdynamic phenomena of aeronautical interest. Significant examples would be transonic flow with shocks and other nonlinearity, viscous effects, turbulence, and the efficiency and stability of methods for their computation. There must be demonstrated competence in research supervision and lecturing on fluid mechanics subjects. Industrial experience is desirable. *Stanford is an Affirmative Action Employer and welcomes applications from women and minority candidates.* Inquiries should be made expeditiously to: **Professor Holt Ashley, Department of Aeronautics and Astronautics, Durand 369, Stanford University, Stanford, Calif. 94305; telephone: 415-497-4136.**

FACULTY POSITION IN CLINICAL CHEMISTRY. Division of Medical Technology, Department of Laboratory Medicine and Pathology, University of Minnesota. Available 1 January 1980. The undergraduate program in medical technology at the University of Minnesota is the oldest in the country and has a junior-senior enrollment of 120. Master's degree and clinical laboratory experience required. Medical technology background, teaching experience, and doctorate degree desirable. Responsibilities include teaching clinical chemistry to undergraduate and graduate students in large medical technology program, conducting research, and supervising section of clinical chemistry laboratory. Level of appointment and salary dependent on qualifications. Send résumé to **Professor Donna J. Blaze-ic, University of Minnesota, Box 198 Mayo Memorial Building, 420 Delaware Street S.E., Minneapolis, Minnesota 55455.**

The University of Minnesota Is an Equal Opportunity Educator and Employer.

FACULTY POSITION IN FOREST ECOLOGY Utah State University

A regular, tenure-track, 12-month position, 50 percent teaching and 50 percent research. Basic assignments are teaching the undergraduate courses in silviculture and development of a teaching, graduate, and research program in forest ecology. Position to be filled at the assistant or associate level with salary commensurate with experience. Required is a Ph.D. in plant ecology and at least one degree or equivalent experience in forestry. Quantitative abilities and a willingness to collaborate with others in research and to seek outside funding are preferred.

Applicants send résumé, transcripts, and names of three references by 1 December 1979 to: **Lawrence S. Davis, Head, Department of Forestry and Outdoor Recreation, Utah State University, Logan, Utah 84322; telephone: 801-752-4100, extension 7845.** *Utah State University is an Equal Opportunity Employer.*

IMMUNOLOGIST/MEDICAL or ORAL MICROBIOLOGIST Ph.D. Tenure-track position beginning January 1980. Teaching responsibility to dental and allied health professional students. Potential exists to participate in graduate education. Development of an independent research program is required. Send curriculum vitae to: **Dr. Howard M. Klitgaard, Chairman, Department of Basic Sciences, Marquette University, 604 North 16 Street, Milwaukee, Wis. 53233.** *Marquette University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

FACULTY POSITION AVAILABLE

University of California, Santa Barbara. A faculty position, subject to the availability of funds, will be available in the Department of Mechanical and Environmental Engineering. Qualified applicants with research and teaching experience in modern areas of mechanics and/or materials science are sought. The level of appointment will be determined by the qualifications of the applicant; however, preference will be given to the ASSISTANT PROFESSOR level. Address applications to **Professor R. S. Hickman, Chairman, Department of Mechanical and Environmental Engineering, University of California, Santa Barbara, California 93106**. Applications accepted through 31 December 1979. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

TWO FACULTY POSITIONS IN MEDICAL BIOCHEMISTRY

Texas A & M University, College of Medicine, has two faculty openings at either the senior or junior level in medical biochemistry. Candidates should have Ph.D. or M.D. and postdoctoral experience; senior candidates should have an established research program with major funding continuing for several years. Interim laboratory space is available pending completion of the Basic Sciences Building for the VA-related medical school. Send complete curriculum vitae to: **Search Committee, Department of Medical Biochemistry, College of Medicine, 110 Herman Heep Building, Texas A & M University, College Station, Texas 77843**. *Equal Employment Opportunity through Affirmative Action*

FACULTY POSITION

Ph.D. or M.D. Research and teaching in occupational health/epidemiology/industrial hygiene or toxicology. Immediate opening. Contact:

**Dr. Anita K. Bahn, Chairperson,
Graduate Group in Epidemiology
Department of Research Medicine
University of Pennsylvania School of Medicine
315 NEB, 420 Service Drive S2
Philadelphia, Pa. 19104
Telephone 215-243-4890**

FACULTY POSITIONS IN PHYSICS

Virginia Commonwealth University is seeking to fill two tenure-track positions in physics. Both theorists and experimentalists in condensed matter physics will be considered. These positions, involving both teaching and research, may be filled as early as 1 January 1980. Salary and rank will be determined on the basis of experience and accomplishment. Applications should include a résumé, publication list, and names and addresses of at least three references, and should be sent no later than 15 November 1979 to:

**C. B. Satterthwaite, Chairman
Physics Department
Virginia Commonwealth University
Richmond, Va. 23284**

VCU is an Equal Opportunity/Affirmative Action Employer

ENJOY JAPAN. IMMUNOLOGISTS, TOXICOLOGISTS, and PHARMACOLOGISTS. Men and women with M.S. or Ph.D. wanted by leading Japanese pharmaceutical company to work in their R & D institute in Japan. Top salary, housing, travel allowance. Contract negotiable. Send résumé to: **IMCA, 1111, TBR Building, 2-10-2, Nagata-cho, Chiyoda-ku, Tokyo, 100 Japan.**

The Department of Chemistry, Washington University, St. Louis, seeks applicants for two tenure-track positions in **INORGANIC CHEMISTRY**. Preference will be given to applicants at the Assistant Professor level, but appointments as Associate or Full Professor for candidates with outstanding records of accomplishment will be considered. Candidates of interest are those who have the potential for outstanding research accomplishments as well as excellence in teaching. Applicants are requested to submit a curriculum vitae and a statement of research interests and to arrange to have three letters of recommendation sent to: **Professor William D. Phillips, Chairman, Department of Chemistry, Washington University, St. Louis, Mo. 63130**. *Washington University is an Equal Employment Opportunity/Affirmative Action employer.*

POSITIONS OPEN

STANFORD UNIVERSITY GEOCHEMIST—PETROLOGIST

The Department of Geology in the School of Earth Sciences invites applications for a faculty position beginning September 1980. Areas of interest include (but are not limited to) geochemical processes in the crust and mantle of the earth including isotope geochemistry, thermodynamics, kinetics, element distribution, and phase equilibria studies. Teaching responsibilities might include graduate and undergraduate courses in geochemistry and igneous petrology. Level of appointment is open, but we are particularly interested in a creative person with a well-established record in research. Applications should include (i) a résumé of education, professional experience, and published research; (ii) a brief statement of plans for future research; and (iii) the names of four references. Send to: **Professor J. G. Liou, Department of Geology, Stanford University, Stanford, Calif. 94305**, by 1 December 1979. *Stanford University is an Equal Opportunity/Affirmative Action Employer.*

GRADUATE PROGRAM IN CELL BIOLOGY

The University of Texas Health Science Center at Dallas is seeking applicants for the Graduate Program in Cell Biology. This Graduate Program offers a unique opportunity for individuals interested in research in the areas of cell biology, neurobiology, and functional anatomy. Entering students may follow a general course of didactic studies combining all three of these areas or may specialize in any one. Presently, there are 25 faculty members and 19 graduate students participating in the program. Qualified entering students are supported by Graduate Assistantships of \$4800 per year. For further information, contact:

**R. G. W. Anderson, Ph.D.
Department of Cell Biology
The University of Texas Health
Science Center at Dallas
5323 Harry Hines Boulevard
Dallas, Texas 75235**

The University of Texas Health Science Center at Dallas is an Affirmative Action/Equal Opportunity Employer. M/F/H

MASS SPECTROSCOPIST—RICE UNIVERSITY

The Department of Biochemistry of Rice University announces the availability of a staff position for an experienced bioorganic mass spectroscopist to operate GC-MS unit and to participate in research on sterol biosynthesis and chemistry of complex lipids. Additional experience in IR and NMR desired, but not essential. Salary dependent on qualifications and experience. Position available immediately. Interested persons should send résumé and the names of three references to: **G. J. Schroepfer, Jr., Biochemistry Department, Rice University, Houston, Texas 77001**. *An Equal Opportunity/Affirmative Action Employer.*

OPERATIONS STATISTICIAN

The Environmental Sciences Division at Oak Ridge National Laboratory has an opening for a statistician (Ph.D.) with experience in operations research, model management and evaluation, data base management and analysis, and a broad array of computing applications. Candidate must have experience with problems in ecological research and assessment, and environmental monitoring programs for energy technologies. Person with a record in population dynamics, ecosystem behavior, and large-scale experimental design is desired. Salary: \$1750 to \$2100 per month. Send résumé to: **M. D. Fore, Employee Relations Division, Oak Ridge National Laboratory, Union Carbide Corporation, Nuclear Division, Post Office Box X, Oak Ridge, Tennessee 37830**. *An Equal Opportunity Employer.*

PATHOLOGIST. Full-time position Veterans Administration Medical and Regional Office Center, White River Junction, Vt., component of Dartmouth-Hitchcock Medical Center, invites inquiries from Board-qualified or certified pathologists who are actively interested in academic pathology, with particular inclination toward anatomic pathology. Position involves participation in teaching medical students and residents, clinical service activities, and an active interest in research. Direct inquiries, including curriculum vitae to **Dr. Martha Stauffer, Secretary to Search Committee, Department of Pathology, Dartmouth Medical School, Hanover, N.H. 03755**.

An Equal Opportunity Employer

POSITIONS OPEN

UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE

Applicants are solicited for faculty positions in the following departments: **MICROBIOLOGY** (No. 199) *Associate Professor* (Clinical Microbiologist), Ph.D. clinical laboratory experience in medical microbiology. Instruction of graduate and professional students. Success in research program development and grants management. **PATHOLOGY** (No. 109) *Professor and Head*, serve as head of the academic Department of Pathology in the College of Medicine, as well as director of the Pathology Laboratory in the University Hospital. Requirements: M.D. Board-certified in pathology. (No. 184) *Scientific Director* (OCMH Electronmicroscopy Laboratory). Ultrastructural scientist experienced in all phases of scanning and transmission electron microscopy. The Scientific Director is required to train technologists, students, and faculty. Ph.D. or equivalent qualifications. **PHYSIOLOGY** (No. 182). Research Associate position available immediately for the studies related to phosphorylation of myocardial muscle proteins, in a well-equipped laboratory. Experience in the field of isolation and purification of muscle proteins and well acquainted with chromatographic techniques. (No. 197) *Research Associate*, research on cardiac afferent inputs to central ascending pathways and will be responsible for studying ascending pathways using electrophysiological techniques to examine the mechanisms of the nervous system that control pain.

Applicants should send curriculum vitae identifying vacancy number for which they are applying to: **Dr. Thomas N. Lynn, Dean, College of Medicine, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, Oklahoma 73190**. *We are an Equal Opportunity Employer.*

NEUROLOGICAL RESEARCHER ASSOCIATE PROFESSOR LEVEL

The Virginia Mason Research Center is establishing a new Neuroscience Research Laboratory and would require the services of an experienced investigator in some area of neuroscience who could actively collaborate with clinicians in the Neurology and Neurosurgery Departments of the Mason Clinic and Virginia Mason Hospital. It is expected that this person will be capable of obtaining research grants nationally which, together with continued bequests, will allow the laboratory to grow, expand and develop. The VMRC is a \$2 million a year research center which houses the activities of 11 senior scientists, 20 research associates, and approximately 40 technicians and other professionally trained assistants.

Please send résumés to **John C. Houck, Ph.D., Director, Virginia Mason Research Center, 1000 Seneca Street, Seattle, Washington 98101**.

Virginia Mason Research Center is an Equal Opportunity Employer

PEST MANAGEMENT ENTOMOLOGIST. Twelve-month appointment at rank of **Associate or Full Professor**, depending on qualifications. Available 1 January 1980. Duties: (i) research on field crop systems with emphasis on cotton and soybean, (ii) participation in a research team to develop and apply pest management models, (iii) guidance of graduate research, and (iv) teaching in the areas of insect ecology and/or population dynamics. Ph.D. in entomology or relevant life science and experience in field crop research are required. Experience in modeling and programming is desirable. Salary is negotiable and competitive. Application deadline: 15 December 1980. Send résumé and list of publications and arrange for three letters of reference to be sent to: **Dr. E. P. Pieters, Chairman, Search Committee, Entomology Department, Drawer EM, Mississippi State, Miss. 39762**. *Mississippi State University is an Affirmative Action/Equal Opportunity Employer.*

PHYSIOLOGIST (Marshall University, School of Medicine). Tenure-track appointment at rank of **Assistant or Associate Professor** is immediately available. Appointee will be responsible for developing an independent research program and will participate in teaching medical and graduate students. Candidates must have completed a 1- or 2-year postdoctoral program, and preference will be given to individuals with appropriate experience in systemic cardiovascular physiology. Send curriculum vitae and names of three references to: **Dr. Eugene Aserlinsky, Professor and Chairman, Department of Physiology, School of Medicine, Marshall University, Huntington, West Virginia 25701**. *An Equal Opportunity Employer.*

POSITIONS OPEN

PHARMACOLOGY

The Department of Pharmacology and Therapeutics, Schools of Medicine and Dentistry, State University of New York at Buffalo, invites applications for a full-time faculty position as **Assistant Professor**. Candidates must have a Ph.D. or M.D. degree with clear evidence of interest and expertise in pharmacology. Strong preference will be given to those with at least 2 years of research experience and publications in cardiovascular pharmacology, including whole animal research.

Duties include teaching (graduate and professional programs), research, and participation in departmental program development. The broad scope of the present faculty offers an opportunity for interaction with both molecular and clinical pharmacologists.

Send curriculum vitae and also request that three letters of recommendation be sent to:

Dr. Edward A. Carr, Jr.
SUNY at Buffalo School of Medicine
127 Farber Hall
Buffalo, New York 14214

An Equal Opportunity/Affirmative Action Employer

PHARMACOLOGISTS. Emory University has two positions open at the assistant professor or associate professor levels. Candidates must have doctoral or equivalent degree: for Assistant Professor rank at least 1 year of postdoctoral research experience and potential to develop independent research program; for Associate Professor rank five or more years of experience in teaching and research in pharmacology or related discipline and evidence of excellent independent research. Applicants should have strong commitment to both teaching and research. Letters of application, curriculum vitae, a brief description of career goals and proposed research program, and three letters of recommendation must be received by 30 November 1979. Address to **Dr. Neil C. Moran, Chairman, Department of Pharmacology, Emory University, Atlanta, Ga. 30322.**

An Affirmative Action/Equal Opportunity Employer

POPULATION AND COMMUNITY ECOLOGY

The Department of Ecology and Behavioral Biology, University of Minnesota, invites applications for a new, tenure-track faculty position in population and community ecology. Preference will be given to persons active in experimental field research. We are particularly interested in, but not limited to, persons working with insects or plants. The position begins September 1980 at **ASSISTANT PROFESSOR** or higher rank. Review of applications will begin on 26 November 1979. Applications should include curriculum vitae, copies of publications, transcripts, or a list of relevant graduate and undergraduate courses, statement of research and teaching interests, and three letters of reference (sent separately). Respond to **D. Tilman, Search Committee Chair, Department of Ecology and Behavioral Biology, University of Minnesota, 318 Church St. SE, Minneapolis, Minn. 55455.**

An Affirmative Action/Equal Opportunity Employer

POSTDOCTORAL POSITION available immediately. To study nitrogenase from the thermophilic blue-green alga (cyanobacterium), *Mastigocladus laminosus*. Send curriculum vitae and three letters of recommendation to: **Dr. S. E. Stevens, Jr., Program in Microbiology, Department of Microbiology, Cell Biology, Biochemistry and Biophysics, The Pennsylvania State University, 101 S. Frear, University Park, Pennsylvania 16802.**

TWO POSTDOCTORAL POSITIONS available for qualified applicants familiar with DNA cloning techniques.

One opening is a USDA position in a research group studying the mechanism of crown gall tumorigenesis toward its utilization as a model vector system for gene transfer. The other opening is in a research group studying the expression of genes coding for bean seed storage proteins toward their utilization in genetic engineering. The applicants should be interested in DNA and RNA purification, DNA and RNA synthesis in vitro and in vivo, and cloning of mRNA/cDNA hybrids and genomic DNA using both plasmid and lambda vectors. Contact: **Dr. J. D. Kemp (608-263-2091), Department of Plant Pathology, or Dr. T. D. Hall (608-262-6503), Department of Horticulture, University of Wisconsin-Madison 53706.**

The University of Wisconsin-Madison is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORAL FELLOW POSITION IN RESPIRATORY PHYSIOLOGY OR BIOMEDICAL ENGINEERING. Available immediately. To conduct research in hemodynamics of the pulmonary circulation. Work to be carried out at Biomedical Engineering Unit and Meakins-Christie Laboratories of University Clinic, McGill University. Salary: \$13,000 to \$15,000. Send résumé and three letters of recommendation to: **Professor H. K. Chang, Biomedical Engineering Unit, Faculty of Medicine, McGill University, Montreal, Quebec H3G 1Y6, Canada.**

POSTDOCTORAL POSITION IN BIOCHEMICAL PHARMACOLOGY OR CELL BIOLOGY available 1 January 1980 to study the hormonal and pharmacological regulation of isolated parietal cell function. Experience in biochemistry or cell biology preferred. Send curriculum vitae and three references to: **Dr. Gary C. Rosenfeld or Dr. W. Joseph Thompson, Department of Pharmacology, University of Texas Medical School, P.O. Box 20708, Houston, Texas 77025.** *An Equal Opportunity Employer.*

POSTDOCTORAL FELLOW

Immediate opening for Ph.D. in organic chemistry. Development of new synthesis routes to chemicals for use in cancer research.

Please send a complete résumé and the names of three references to:

Personnel
Position No. 1348
FREDERICK CANCER RESEARCH CENTER
Litton Bionetics, Inc.
P.O. Box B
Frederick, Md 21701

Equal Opportunity Employer, M/F

POSTDOCTORAL POSITION for 1 to 3 years immediately available for study of immune modulation in tumor-bearing mice. Experience desired in methods of cell separation, tissue culture, and biochemical procedures of purification and characterization of biologically active factors. Write to **Dr. H. F. Havas, Professor, Department of Microbiology and Immunology, Temple University School of Medicine, 3400 North Broad Street, Philadelphia, Pa. 19140.** *An Equal Opportunity, Affirmative Action Employer.*

POSTDOCTORAL POSITION available after 1 November 1979. Research involves relation of chromatin structure to control of gene expression in yeast. Some opportunity to develop independent ideas. Experience working with yeast OR with chromatin desired. Salary \$11,000 to \$12,000. Send résumé and name/address, two references to **Dr. Dennis Lohr, Chemistry Department, Arizona State University, Tempe, Arizona 85281,** before 22 October 1979.

An Equal Opportunity/Affirmative Action Employer

TWO POSTDOCTORAL POSITIONS available 1 January 1980 for studies of gene structure and expression in hemoflagellate protozoa, including mutant isolation, genetic mapping, isolation of plasmids, and viruses suitable for development as cloning vectors and the development of conditions for uptake and expression of DNA by hemoflagellate protozoa. Preference will be given to candidates with training in microbial genetics and/or molecular genetics. One-year appointments with the possibility of renewal. Salary: \$13,300. Please send résumé, reprints, and three letters of recommendation to: **Dr. Larry Simpson or Dr. Dan S. Ray, Department of Biology and the Molecular Biology Institute, University of California, Los Angeles, California 90024.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION IN CHEMICAL CARCINOGENESIS. A postdoctoral-level position, supported by an NIEHS training grant in Environmental Toxicology, is available immediately for an individual to conduct research on a project concerned with exploring the role of error-prone DNA repair in initiation of hepatocarcinogenesis. Both in vivo and hepatocyte culture systems are being used in this project which represents one part of the work being conducted by an interdisciplinary group studying mechanisms of chemical carcinogenesis. Applicants with a strong background in cell biology, biochemistry or toxicology are preferred. Send a curriculum vitae and the names of three references to: **Dr. James D. Yager, Jr., Department of Pathology, Dartmouth Medical School, Hanover, New Hampshire 03755.**

Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

POSTDOCTORAL POSITION

To study metabolic response to trauma, with emphasis on hormonal-substrate interactions. Isotopic-tracer techniques applied in vivo in laboratory animals, human volunteers, and patients. Excellent laboratory facilities (including mass spectrometry) at the Shriners Burns Institute in affiliation with Massachusetts General Hospital and Harvard Medical School. Please send résumé and names of three references to: **Dr. Robert R. Wolfe, Shriners Burns Institute, 51 Blossom Street, Boston, Mass. 02114.**

POSTDOCTORAL POSITION—PLANT BIOCHEMIST to investigate metabolism in isolated leaf peroxisomes. Experience in separation of radiolabeled photosynthetic compounds, isolation of organelles, or measurement of membrane transport desirable but not necessary. Salary \$12,000 per year (or higher depending on experience) plus fringe benefits. Available immediately. Contact: **Dr. Anthony Huang, Biology Department, University of South Carolina, Columbia, S.C. 29208; telephone 803-777-2331.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION at the Johns Hopkins University School of Medicine. Available between January and July 1980. Research and training in the neurobiology of cardiovascular control. Strong background in modern techniques of neurophysiology or neuroanatomy recommended. Applicants should send their curriculum vitae and bibliography to **Dr. Lawrence Schramm, The Johns Hopkins University School of Medicine, 226 Traylor Building, 1721 East Madison Street, Baltimore, Maryland 21205.**

POSTDOCTORAL POSITION

The Moore School of Electrical Engineering, University of Pennsylvania, invites applicants for a postdoctoral fellowship in chemical sensing at elevated temperatures. The research will involve the investigation of semiconductor devices in high temperature operation. A background in one of the following areas is required: electrical engineering, physics, or chemistry. An interest in electronics and a working knowledge of computers is desirable. Send résumé and two letters of reference to **Prof. J. N. Zemel, The Moore School of Electrical Engineering, D2, Department of Electrical Engineering and Science, University of Pennsylvania, Philadelphia 19104.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available 1 November 1979 for (i) the development of new techniques for the isolation of viruses and viral precursors and (ii) the study of bacteriophage assembly. Experience with electron microscopy is preferred. Salary: \$13,000 per year. Send curriculum vitae and two letters of reference to: **Dr. Philip Serwer, Department of Biochemistry, The University of Texas Health Science Center, San Antonio, Texas 78284.** *An EOE/AF Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately, for 2 to 3 years, to collaborate in studies of dorsal horn organization. Experience with electro-physiological techniques and computer programming essential. Salary starting at \$11,000, commensurate with experience. Send curriculum vitae and three letters of recommendation before 15 November 1979 to: **Dr. Paul B. Brown, Department of Physiology and Biophysics, West Virginia University Medical Center, Morgantown, W. Va. 26506.** *West Virginia University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE

For work on the assembly of animal virus-like particles to be used for gene delivery systems. Experience in either electron microscopy, virology or nucleic acid techniques desired. Send curriculum vitae to **H. V. Aposhian, Department of Cellular and Developmental Biology, University of Arizona, Tucson, Arizona 85721.** *An Equal Opportunity/Affirmative Action Employer.*

DUKE PHYTOTRON

POSTDOCTORAL/RESEARCH ASSOCIATE position available early spring 1980 for plant physiologist with background in water and nutrient stress. Experience desired in operating and differential thermocouple psychrometer and an atomic absorption spectrophotometer. Send curriculum vitae and names of three references by 1 January 1980 to **Dr. Henry Hellmers, Botany Department, Duke University, Durham N.C. 27706.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION IN NEUROSCIENCE

For the electrophysiological study of single unit activity in the behaving rat. Salary \$13,000. Send curriculum vitae and names of three references to: **Dr. D. German, Department of Physiology, University of Texas Health Science Center at Dallas, 5323 Harry Hines Blvd., Dallas, Texas 75235.**

An Equal Opportunity Employer

POSTDOCTORAL TRAINEESHIP available for biochemist interested in proteins involved in cerebroside metabolism or in the biochemical effects of inhibitors of cerebroside metabolism. Opportunity to learn modern lipid techniques. Prefer experience in protein isolation, enzyme assay, antibody preparation, and lipid/protein interactions. Send curriculum vitae to **Dr. Norman Radin, Mental Health Research Institute, University of Michigan, Ann Arbor, Mich. 48109.** A nondiscriminatory Affirmative Action Employer.

POSTDOCTORAL TRAINING PROGRAM CELLULAR AND MOLECULAR ENDOCRINOLOGY

Postdoctoral traineeships are available immediately in a new NIH-supported program. Trainees with a Ph.D. or M.D. degree will participate in a research program of one of 12 faculty from the Biochemistry Department and the Program in Biomedical Sciences on the campus of the University of California, Riverside. The purpose of the program is to provide for research training at the postdoctoral level in the following four major areas of focus:

- 1) Cell culture model systems for hormone action;
- 2) Intracellular events in control of cell growth and metabolism;
- 3) Endocrinology of vitamin D, calcium, and phosphorus metabolism; and
- 4) Structure and properties of hormones and their receptors.

Participation is restricted to U.S. citizens or to individuals holding a permanent immigrant visa.

For detailed information and application forms write to:

Dr. Anthony W. Norman, Program Director
Department of Biochemistry
University of California
Riverside, California 92521
Telephone: 714-787-4227

An Affirmative Action/Equal Opportunity Employer

PROGRAM MANAGER (\$32,442 to \$47,500)

The National Science Foundation, Division of Ocean Sciences, is seeking a qualified person who is interested in a permanent or 2-year rotational assignment at the National Science Foundation as a Program Manager for Operations, Office for Oceanographic Facilities and Support. This program manages foundation support for operation and utilization of the academic fleet required for the conduct of NSF-funded research programs. Responsibilities included are program planning, proposal evaluation, administration of grants, contracts and interagency agreements and extensive liaison with other NSF program officers, the institutions of the academic oceanographic community, and other federal agencies and coordinating groups. Salary is negotiable based on qualifications and experience. Health, life insurance, and leave benefits are available. Applicants should have a Ph.D. or its equivalent in experience in marine management, oceanography, or ocean engineering. Specific experience related to the management and scheduling of ships and other oceanographic facilities in an academic setting is required.

HOW TO APPLY: Submit letters of interest and SF-171 or current résumés by 15 December 1979 to the **National Science Foundation, DPM, Executive and Managerial Personnel Branch, EMPB-79-13, 1800 G Street, NW, Washington, D.C. 20550.** For further information call Ms. Catherine Hobek, 202-632-4124. Deadline for submissions: 15 December 1979.

An Equal Opportunity Employer

RESEARCH POSITION, postdoctoral or permanent, at university hospital in midwest. Immunologist with cell biological background and skill. M.D. or Ph.D. required. Work on immunodiagnosis and therapy of human cancer. Familiarity with in vitro and vivo assays measurement of cell-mediated immunity desirable. Excellent benefits and salary.

Box 268, SCIENCE

U.S. ENVIRONMENTAL PROTECTION AGENCY

LABORATORY DIRECTOR DULUTH ENVIRONMENTAL RESEARCH LABORATORY DULUTH, MINNESOTA

OFFICE OF RESEARCH AND DEVELOPMENT

The Environmental Protection Agency has reopened the competition for this position. The closing date for applications is now 26 October 1979.

Duties: The Director manages and implements an in-house and extramural research program which addresses problems of ecological effects and transport and fate of pollutants in freshwater environments.

Grade: This position is a Senior Executive Service (SES) position. The person selected will be required to join the SES. Salary range: \$44,756 to \$47,500.

Experience: Demonstrated ability to: (1) direct and carry out research on the ecological effects of pollutants in freshwater systems; (2) manage a technical research or operational organization.

Application: All candidates should submit a completed Standard Form 171 (résumés cannot be accepted except in conjunction with the 171) which is available in Federal Job Information Centers and Federal Agency personnel offices.

Send résumé to:

EPA

Edna Morse
Waterside Mall
401 M Street, SW
Washington, D.C. 20460

For further information, contact: Edna Morse by telephone at 202-755-0674, or by mail at the EPA address above.

Applications must be postmarked by the closing date of 26 October 1979.

The Environmental Protection Agency is an Equal Opportunity Employer.

FACULTY POSITIONS MARINE SCIENCE

The Department of Marine Studies/Marine Science Institute of The University of Texas at Austin seeks to expand its faculty from among the following areas of expertise:

- marine geophysics*—emphasis on multichannel seismology and signal processing
- biological oceanography*—plankton related studies
- marine geology*—structure and stratigraphy of continental margins and ocean basins
- physiology*—including cellular, or developmental or reproductive specialization.
- chemical oceanography*—dynamics, tracers and geochemistry
- marine sedimentology*—depositional processes, deep sea core studies
- geological/physical oceanography*—including particle and water dynamics, light and currents, remote sensing
- marine ecology*—study of estuaries, using microbiology and/or biochemistry
- marine chemistry*—authigenic minerals, chemical processes at benthic boundary layer
- marine minerals*—genesis of, and exploration for, marine hard minerals, including nodules, placers, lodes, and other deposits.

Successful candidates will be expected to develop graduate-level courses in The Department of Marine Studies, to supervise graduate student research, and to develop an active, marine-related research program. The primary research facilities of the Marine Science Institute are the Galveston Geophysics Laboratory and the Port Aransas Marine Laboratory. The Marine Science Institute also maintains three ocean-going research vessels, the R/V *Fred Moore*, R/V *Ida Green* and R/V *Longhorn*.

Interested Candidates are asked to send the following information:

- (1) Vita—including list of publications.
- (2) Brief statement of your current research and support, and your plans for future research.
- (3) Brief statement of undergraduate and graduate courses in which you have interests and qualifications for teaching.
- (4) Names of three people who may be contacted to provide professional and personal recommendations.

A letter of application and the above requested information should be sent to:

Prof. J. Robert Moore, Chairman
Department of Marine Studies
University of Texas
P. O. Box 7999, University Station
Austin, TX 78712

Six tenured or tenure-track positions will be filled during the 1979-80 academic year at levels of Assistant Professor to full Professor. Interested candidates are urged to make early application. Ph.D. required.

The University of Texas is an Equal Opportunity/Affirmative Action employer.

RESEARCH ASSOCIATE

East-West Center

The East-West Center is a national educational institution founded by the U.S. Congress in 1960 to promote better relations and understanding among nations through cooperative programs of study, research, and training. These programs focus on crucial problems of mutual consequences from which poor relations and misunderstanding among nations arise. All Center programs are multinational and multidisciplinary. Staff, visiting scholars and senior professionals, and graduate degree students form teams which work on these problems. In its staff, the Center seeks excellence in team research, commitment to the development of policy aids, educational products, and practical applications of such research, and ability to work cooperatively with those from other cultures and disciplines.

Applications and nominations are being accepted for academic staff positions in the Environment and Policy Institute. The Research Associate positions are full-time and may be permanent (subject to successful probationary period) or fixed-term with the later possibility of conversion to permanent. Applications for Research Fellow appointments in these areas are also sought.

Candidates must have a Ph.D. or its academic equivalent plus at least 4 years of experience in areas relevant to at least one of the following Institute programs: (i) natural resource and environmental assessment in development planning and assistance and (ii) marine resource and environmental management issues in Asia and the Pacific. Positions are open in the following areas:

- Policy and resource management analysis, focusing on transnational marine resource and management issues; on environmental dimensions of sectoral policies, particularly energy; and on water resources; quality analysis in Asia.
- Management and utilization of tropical forests, forest lands, and watersheds.
- Professional education and training in the management of natural systems, with emphasis on Asia, and in building networks of training institutions.

Cover letter should give examples of demonstrated ability to: (i) discover knowledge about natural resource and environmental issues, especially at the international level; (ii) develop applications of this knowledge, for example, curricula, educational materials, and policy aids; and (iii) design and implement research and education projects and activities in a team context, preferably multinational. Experience in Asia/Pacific region preferred. Working proficiency in the English language required. Experience in natural resource and environmental analysis and assessment processes desirable. Familiarity with computer modeling and simulation desirable.

Salary commensurate with extent of experience and qualifications. Additional current cost-of-living allowance of 12.5 percent (subject to change). All nominees will be contacted to determine interest. Applications will be considered in two pools. Applications with cover letter, complete curriculum vitae, and names and addresses of three professional references must be postmarked no later than 30 October 1979 for the first pool and no later than 1 January 1980, for the second. Starting date flexible. Send to **Rebecca Lembeck, Personnel Division, Department 19, East-West Center, 1777 East-West Road, Honolulu, Hawaii 96848.**

An Equal Opportunity Employer M/F

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE

Available November 1979 for investigation of calmodulin methylation and other aspects of calcium-binding proteins in nervous tissue. Recent Ph.D. in biochemistry or pharmacology with experience in protein chemistry, and enzymology preferred. Salary range: \$12,000 to \$14,500. Send curriculum vitae and three letters of reference to:

Dr. Frank L. Siegel
Neurochemistry Section
Waisman Center
University of Wisconsin
Madison, Wisconsin 53711

An Equal Opportunity/Affirmative Action Employer

RADIOCHEMIST

Description: A full-time special appointment is available to establish radiochemical procedures for the analysis of radionuclides in the natural uranium and thorium chains. It is necessary that applicant be familiar with theory of chemical separation of the metals and actinides, electrodeposition, ion exchange, tracer methodology, nuclear spectroscopy, and counting instrumentation. Practical experience and appropriate formal training is essential. Duties will include choosing procedures, setting up necessary equipment, testing methods, quality control, routine radioassay, and supervision of technicians. Opportunity to participate in teaching program may develop for qualified person. Salary negotiable within the range of \$15,000 to \$22,000 per year, depending on credentials. Application deadline is 1 November 1979. Starting date is 1 December 1979.

Department: F. Ward Whicker, Radiology and Radiation Biology, Colorado State University, Fort Collins, Colo. 80523; telephone: 303-491-5343.

Colorado State University is EEO/Title IX employer. Equal Opportunity Office: 314 Student Services Building.

RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW for Ph.D., M.D. to study hepatic bile acid transport. Background in protein chemistry or organic synthesis desirable. Salary according to experience. An Equal Opportunity Employer.

Box 284, SCIENCE

RESEARCH ASSOCIATE. Biomedical Engineering Laboratory, American Red Cross, Bethesda, Md. Ph.D. engineering or science or master's degree with relevant experience. One year available immediately with possible renewal. Strong interest R & D, conduct investigations on blood collection procedures. Send curriculum vitae to **Ms. Ruth Straub, Personnel Office, American Red Cross, 18th and E Streets, NW Washington, D.C. 20006.** *Equal Opportunity Employer M/F.*

RESEARCH ASSOCIATE, ELECTROCHEMIST, Ph.D. electrochemist with interest in working on novel electrochemical solar cell concepts. Research position involves hands-on experimental work in a broad-based interdisciplinary group involving device physics, double-layer phenomena, substrate characterization, thin film fabrication, and electrochemical analyses. Graduate student supervision, teaching, and interaction with program development aspects also possible. Rank and salary and negotiable. Send résumé to **Professor Joel DuBow, Electrical Engineering Department, Colorado State University, Fort Collins, Colorado 80523.**

RESEARCH ASSOCIATE, Ph.D., Membrane Biochemist, Virologist. To study membrane-related events of penetration and assembly of enveloped viruses. Characterization of mutants, growth of viruses in continuous cell culture under Dr. J. Lenard, Department of Physiology and Biophysics. \$12,500 plus, depending on experience. Please submit curriculum vitae to: **Personnel Department, COLLEGE OF MEDICINE & DENTISTRY OF NEW JERSEY-Rutgers Medical School, P.O. Box 101, Piscataway, New Jersey 08854.** *An Equal Opportunity/Affirmative Action Employer M/F.*

RESEARCH ASSOCIATE

Biomedical engineering laboratory, American Red Cross, Bethesda, Md. Design and run experiments to evaluate automated blood bank methods, prepare protocols and manuscripts on new techniques automated antibody screening and cross matching. Salary range \$18,321 to \$22,500. Send curriculum vitae to **Ms. Ruth Straub, Personnel Office, ARC, 18th and E Streets, NW, Washington, D.C. 20006.** *Equal Opportunity Employer M/F.*

POSITIONS OPEN

RESEARCH ASSOCIATE. Twelve-month temporary appointment. Candidates must have a B.S. degree in chemistry, physics, or biophysics and an M.S. degree or equivalent course work in radiation sciences. Graduate-level course work in biochemistry and experience with techniques of mammalian cell culture is also required. The position involves laboratory management and supervision of personnel; therefore, experience of this nature would also be highly desirable. Contact **Dr. J. S. Bedford, Department of Radiology and Radiation Biology, Colorado State University, Fort Collins, Colorado 80523.** Deadline for applications is 31 October 1979. *Colorado State University is EEO/Title IX employer. Equal Opportunity Office: 314 Student Services Building.*

RESEARCH SCIENTISTS BIOLOGICAL SCIENCES

The Life Sciences Division of IIT Research Institute, a not-for-profit Chicago-based research organization has several staff positions for biologists. Requirement are Ph.D. in physiology, toxicology, nutrition, or experimental pathology. Preference will be given to candidates with postdoctoral research experience and interest in long-term toxicity, carcinogenicity bioassay, and carcinogenesis studies in rodents. Opportunity is available to develop independent research projects in own field of expertise. Salary commensurate with experience and qualifications.

Please submit résumés including salary history to:

Ms. L. Amft
Professional Staffing
IIT RESEARCH INSTITUTE
10 West 35 Street
Chicago, IL 60616

IITRI is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and members of minority groups.

RESEARCH SCIENTIST-BIOCHEMISTRY. To isolate and characterize esterases from human leukocytes. Other related projects. Experience in enzymology and purification of proteins necessary. Ph.D. required. Permanent appointment. Salary \$17,000. Send curriculum vitae and a list of three references to

Box 280, SCIENCE

SCIENTIST

NMR spectroscopist. Ph.D. with experience in NMR needed to operate and maintain existing 100 MHz varian FT-XL-100 NMR. The workscope will include routine sample analysis and self-initiated or collaborative research projects. Hands-on operational experience is mandatory. Send résumé in complete confidence with three references to:

Personnel
Requisition No. 1347
FREDERICK CANCER RESEARCH CENTER
Litton Bionetics, Inc.
P.O. Box B
Frederick, Md. 21701
Equal Opportunity Employer M/F

The University of California, Irvine, College of Medicine seeks Board-certified/eligible **THERAPEUTIC RADIOLOGISTS** for positions at the assistant or associate professor level in the **DIVISION OF RADIATION ONCOLOGY.** Responsibilities include undergraduate and graduate-level teaching, clinical service and research, and participation in the Radiation Therapy Oncology Group and Gynecologic Oncologic Group; postcertification experience preferred.

Applications from all qualified candidates are welcome; minorities and women are encouraged to apply.

Send applications, including a short biography and copies of publications, to: **Harris S. Moyed, Ph.D., Acting Chairman, Department of Radiological Sciences, University of California, Irvine, College of Medicine, Irvine, California 92717.**

Closing date: 15 November 1979.

TUMOR BIOLOGIST

To work in the general area of cell movements, invasion, and metastasis. Level of appointment appropriate to experience. Apply to **Dr. Leonard Weiss, Director, Department of Experimental Pathology, Roswell Park Memorial Institute, 666 Elm Street, Buffalo, New York 14263.**

An Equal Opportunity Employer, M/F.

Pulmonary/ Allergy Research

Riker Laboratories, Inc. has an opening for a senior biochemical pharmacologist with broad training and experience in the areas of asthma and allergic diseases. The successful candidate will have the responsibility for identifying and characterizing new drug candidates as well as developing innovative screening techniques, and will join a multi disciplinary team sharing common objectives.

Preference will be given to individuals with the following qualifications:

- PhD in pharmacology or biochemistry with 3-7 years of laboratory experience beyond the doctorate
- Demonstrated capabilities in initiating and directing independent research
- Interest in molecular mechanisms of pulmonary drug action

The Twin Cities area offers a superb educational, recreational and cultural environment. If you are interested in a growing and challenging position, please send your resumes with references and salary history in confidence to Byron Crushshon/3M.

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3M Center

St. Paul, Minnesota 55101

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THE UNIVERSITY OF CALGARY

ARCTIC INSTITUTE OF NORTH AMERICA

EXECUTIVE DIRECTOR

The Arctic Institute of North America, The University of Calgary, is seeking applications for the position of Executive Director. The successful applicant is expected to hold a Doctorate degree from a recognized university, or equivalent qualifications; to have an established background in Arctic and Northern studies; university teaching experience, or an interest in teaching; and managerial ability. The Executive Director is a senior academic appointment liaising with the university administration through the Office of the Vice-President (Academic). Salary and benefits will depend on qualifications and experience.

Further details may be obtained from

Dr. K. E. Cooper
Associate Vice-President (Academic)
The University of Calgary
Calgary, Alberta T2N 1N4
Canada

to whom the letters of application together with a detailed curriculum vitae should be sent.



PREPARATION OF VITAMIN A COMPOUNDS AND THEIR CONGENERS

The National Eye Institute wishes to solicit proposals to produce Vitamin A Compounds and their congeners for research in the visual system. The compounds required are: all-*trans*, 11-*cis*, 9-*cis* and 13-*cis* isomers of vitamin A₁ aldehyde; all-*trans*, 11-*cis*, 9-*cis* isomers of Vitamin A₂ aldehyde; retinol, and retinol₂ isomers, as above; retinyl palmitate isomers, as above; specific precursors used in the production of compounds named above will be identified on the basis of synthetic methods developed by the contractor.

Aldehydes should be crystalline and measured pure by mass spectroscopy and by analyses on high pressure liquid chromatography columns of 5 to 10 micrometers silica gel with hexane/ether as eluant. Equivalent systems capable of giving comparable separations will be acceptable. The chromatography system must be capable of near baseline resolution of the 11- and 13-*cis* isomers.

Alcohol forms of selected isomers will be produced at monthly intervals at the direction of the Project Officer by reduction of the corresponding crystalline aldehydes in darkness or dim red light. The alcohol forms of the isomers will be purified from inorganic salts (that is, unreacted and reacted reducing agents) by repeated washing and extraction. The final products will be supplied with reports of their ultraviolet absorption spectra mass spectroscopy and high-pressure liquid chromatography analyses using microparticulate silica gel or its equivalent.

The compounds must be packaged in quantities of 10 milligrams per ampule. The ampules will be made of brown glass, sealed under argon and stored in darkness at -70°C. The contractor will be responsible for storage. Stability checks of stored material are required.

Request for proposal No. NIH-EY-79-45 will be available on or about 31 August 1979. Requests for the RFP should cite the RFP number and should be addressed to the attention of:

Patricia Ann Eigler
Contracting Officer
Research Contracts Branch, DCG
NIH, Building 31, Room 2B47
Bethesda, Maryland 20205
Telephone: 301-496-4487

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City State Zip MU10

POSITIONS OPEN

TUMOR IMMUNOLOGIST. To join a research program to study urological oncology. Candidate must be independently funded and have experience in these areas: (i) techniques for the cultivation of cell lines from urologic tumors; (ii) immunochemical procedures for the isolation and purification of tumor-associated antigens; and (iii) experience in maintenance of urologic tumor tissue in athymic nude mice. Applicants should submit a curriculum vitae, publication list, three letters of recommendation, and a research plan outline to **Clair E. Cox, M.D., Department of Urology, University of Tennessee Center for Health Sciences, P.O. Box 63635, Memphis, Tennessee 38163. An Affirmative Action/Equal Opportunity Employer.**

VERTEBRATE PHYSIOLOGIST. The Biology Department is seeking an individual with an earned Ph.D. for an appointment at the Assistant Professor rank to teach basic and applied human physiology for Health Related Professions students and mammalian or comparative physiology for biology majors and to develop a master's-level research program. Postdoctoral or previous teaching experience preferred. Salary: \$12,000 to \$15,000 depending on qualifications. Deadline is 31 October 1979. Send curriculum vitae, transcripts, and three letters of reference to: **Dr. L. R. Fox, Biology Department, Wichita State University, Wichita, Kan. 67208. Wichita State University is an Affirmative Action Employer.**

VIROLOGY

POSTDOCTORAL TRAINEESHIPS in Biochemical Genetics of phage and tumor viruses at the University of Michigan Medical School are available now through an NIH-funded interdisciplinary program. Research interests include animal cell transformation by papova and herpes viruses, virus and phage DNA replication and recombination, regulation of gene expression, morphogenesis and virus-cell interactions. Applicants need not have research experience in virology. An appointment as lecturer in the Medical School is possible, if desired. Submit a curriculum vitae and a list of three references to the **Virology Postdoctoral Training Program Committee (Department of Biological Chemistry)** or to one of the following faculty: **Dr. Wm. R. Folk, Dr. G. R. Greenberg (Department of Biological Chemistry); Dr. Wm. Brockman, Dr. D. I. Friedman, Dr. D. Jackson, Dr. E. Jackson (Microbiology); Dr. M. Levine (Human Genetics)** at the **University of Michigan Medical School, Ann Arbor, Mich. 48109.**

A Nondiscriminatory, Affirmative Action Employer

ZOOLOGIST/GENETICIST. A tenured-track vacancy is anticipated for January 1980 in the Department of Zoology. The appointment will be at the instructor level with a salary of \$12,600. Ph.D. required. The Department of Zoology is particularly interested in securing an individual who can teach introductory zoology and advanced genetic courses. A broad background in general zoology with emphasis in physiology is required. Independent study and advisement of undergraduate students is expected.

Applicants should send by 15 November 1979 of official undergraduate and graduate transcripts, résumé, and three letters of reference to: **Dr. Sigurd Nelson, Jr., Chairman, Department of Zoology, State University College, Oswego, New York 13126.** Subject to budget confirmation. *An Equal Opportunity/Affirmative Action Employer.*

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS TO STUDY GENETIC AND DEVELOPMENTAL DISEASES Postdoctoral fellowships are available at the Eleanor Roosevelt Institute for Cancer Research and the Florence R. Sabin Laboratories for Genetic and Developmental Medicine located at the University of Colorado Health Sciences Center to study human developmental and genetic diseases using techniques of molecular and theoretical biology and biochemical and somatic cell genetics. Candidates must have the M.D. or Ph.D. degree. Faculty include Drs. Stephen Goodman, Carol Jones, Fa-Ten Kao, David Patterson, Theodore T. Puck, Arthur Robinson, Michael Sinensky, and Charles Waldren. Collaborative opportunities also exist for study with members of the Theoretical Division of the Los Alamos Scientific Laboratory. Stipends will be commensurate with prior training and experience. Candidates should send curriculum vitae and names of three references to: **Postdoctoral Selection Committee, c/o Dr. David Patterson, Eleanor Roosevelt Institute, Box B-129, University of Colorado Health Sciences Center, 4200 East 9 Avenue, Denver, Colorado 80262. An Equal Opportunity/Affirmative Action Employer.**

FELLOWSHIPS

GRADUATE TRAINING IN PHARMACOLOGY. Research training and course work leading to the Ph.D. degree and realistically designed for career opportunities in this expanding field are offered. Major departmental research programs include: molecular, cardiovascular, renal, or nervous system pharmacology; the toxicology of therapeutic and environmental agents including drugs of abuse; and clinical pharmacology. A limited number of fellowships offering stipend and tuition are available. Early application for August 1980 is advised. Apply to **Director of Graduate Studies, Department of Pharmacology and Therapeutics, Medical School, State University of New York at Buffalo, 127 Farber Hall, Buffalo, N.Y. 14214. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL FELLOWSHIPS MISSOURI INSTITUTE OF PSYCHIATRY

Postdoctoral research fellowships for M.D.'s and Ph.D.'s are immediately available at the Missouri Institute of Psychiatry (MIP), Saint Louis, Missouri. Special research emphases are available in mental health computer application, neurochemistry, social or urban studies, and some areas of clinical research. Although the program is conceptualized as a 2-year fellowship, consideration of 1-year appointments is possible. MIP is a St. Louis segment of the University of Missouri-Columbia, School of Medicine, with faculty members holding academic appointments in the Department of Psychiatry and Biochemistry. All fellows will receive academic appointments in appropriate departments. For further information, applicants should send a résumé and a brief description of their objectives as a Postdoctoral Fellow to:

**Office of Graduate Education
Missouri Institute of Psychiatry
5400 Arsenal Street
St. Louis, Missouri 63139**

The University of Missouri is an Equal Opportunity Employment Institution.

One **POSTDOCTORAL FELLOWSHIP**, beginning immediately at University of Tennessee Center for the Health Sciences (UTCHS), Department of Biochemistry, is available for an applicant with interests in the hormonal control of messenger RNA translation. Send curriculum vitae and names of three references to:

**Dr. Rameshwar K. Sharma
Department of Biochemistry
UTCHS
894 Union Avenue
Memphis, Tennessee 38163**

POSTDOCTORAL FELLOWSHIP. Two-year postdoctoral fellowship for research training in neuroendocrinology related to visual system. For U.S. citizens or permanent residents with Ph.D. or M.D. in scientific discipline related to endocrinology with research experience in radioimmunoassay techniques. Excellent collaboration with Endocrinology Division. Supported by NIH training grant. Send curriculum vitae to: **Bernard Schwartz, M.D., Ph.D., Chairman and Professor, Department of Ophthalmology, Tufts-New England Medical Center, 171 Harrison Avenue, Boston, Mass. 02111. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL FELLOWSHIP—CLINICAL CHEMISTRY for individual with outstanding qualifications. Program offers opportunity to pursue advanced training in a modern, progressive laboratory in an active university medical center setting. Annual stipend \$12,000. Please contact **Norbert W. Tietz, Director of Clinical Chemistry, Department of Pathology, University of Kentucky Medical Center, Lexington, Ky. 40536.**

RESEARCH FELLOWSHIP

A postdoctoral fellow with experience in immunology, somatic cell genetics, or DNA cloning technology required for a project investigating the genetic control of development. Specific experiments planned include the genetic manipulation of murine teratocarcinoma stem cells and various stem-cell hybrids.

Three-year appointment. Salary range £5800 to £7100. For further information telephone Dr. P. Goodfellow (01.242.0200, ext. 265). Applications with curriculum vitae and the names of two referees should be sent to the **Personnel Officer, Imperial Cancer Research Fund, Lincoln's Inn Fields, WC2 London, England**, quoting reference 373/79.

FELLOWSHIPS

SMITHSONIAN FELLOWSHIPS

Predocctoral/postdoctoral fellowships in anthropology, biology, and earth sciences. Tenable at Smithsonian's museum, laboratory, field and research facilities for 6 to 12 months. Deadline: 15 January 1980. Contact: **Office of Fellowships and Grants, Smithsonian Institution, L'Enfant Plaza 3300, Washington, D.C. 20560. Awards are based upon merit, without regard to race, color, religion, sex, national origin, or age of any applicant.**

COURSES

LIQUID CHROMATOGRAPHY IN CLINICAL ANALYSIS 12 to 14 November 1979 Golden Gateway Holiday Inn, San Francisco, California

This postgraduate course, sponsored by the University of California at San Francisco, will explore liquid chromatography and its application to patient care. AMA/CMA Category 1 Credit: 19 hours. For further information, please telephone: **415-666-4251.**

SYMPOSIUM

UNIVERSITY OF CALIFORNIA JERRY LEWIS NEUROMUSCULAR RESEARCH CENTER'S INAUGURAL SYMPOSIUM ON EXCITATION-CONTRACTION COUPLING

Will be held 4-7 December, 1979, at UCLA. Topics for discussion: Electrophysiological Analysis of EC Coupling; Mechanisms at the Level of the T-SR Junction; Molecular Aspects of the Contractile Response.

For program and registration information, write:

**Alan D. Grinnell, Ph.D., Director
Jerry Lewis Neuromuscular Research Center
UCLA School of Medicine
Los Angeles, California 90024**

JOURNAL

RESUMPTION OF HUNTIA

The Hunt Institute for Botanical Documentation, Carnegie-Mellon University, Pittsburgh, Pa., announces the revival of its journal *Huntia* after a lapse of some dozen years. Volume 3, No. 1, is now in distribution and No. 2 is in press. The journal's format has been changed somewhat, as has its publication schedule: each annual volume will comprise two to four numbers totaling about 300 pages.

Huntia invites submission of original scholarly papers in all areas of botanical history, including bibliography, biography, iconography, and art and illustration. All papers are reviewed critically for scholarly soundness and merit by at least two appropriate referees. Accepted papers are subject to a charge of \$30 per printed page to help defray printing costs.

Huntia will also include reviews and announcements of new titles in the institute's fields of interest. Works for review should be directed to Dr. Robert W. Kiger, editor, at the institute.

Hunt Institute Associates may elect to receive *Huntia* as one of the benefits of membership; otherwise it is available on subscription at \$25 per volume or, by special arrangement, on institutional exchange.

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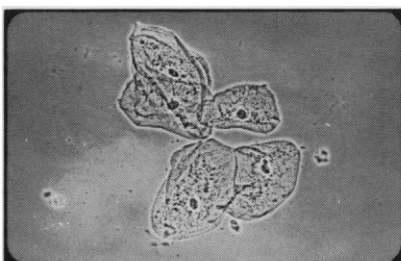
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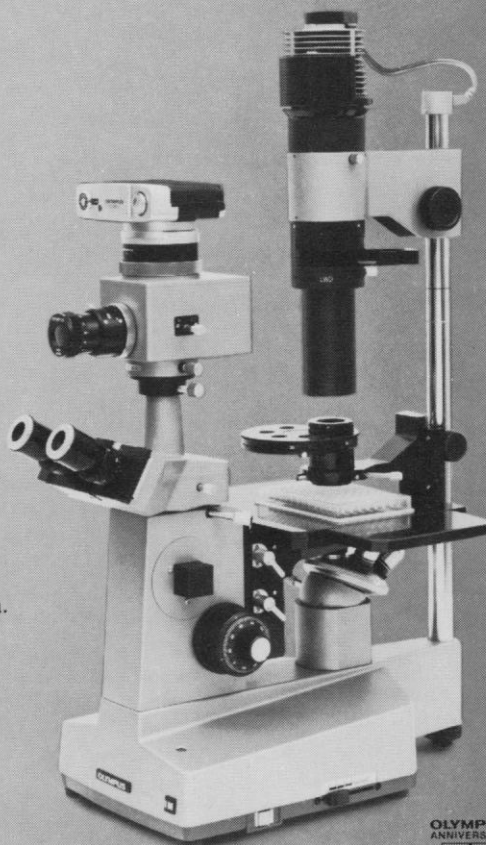
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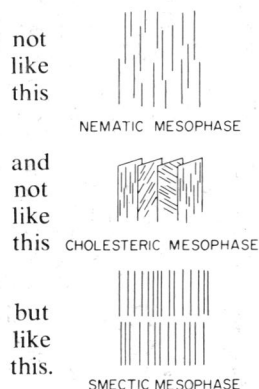


In Canada: W. Carsen Co., Ltd., Ontario.



A tale (with numerous threads) from the manufacturing chemist business

1 We are pleased to announce that diethyl 4,4'-azoxydicinnamate is *again* available from lab suppliers as KODAK Laboratory Chemical No. 10086. Below 136°C it is an ordinary crystalline solid. Above 260°C it is an ordinary liquid. Between those temperatures its long, flat, rather rigid molecules arrange themselves:



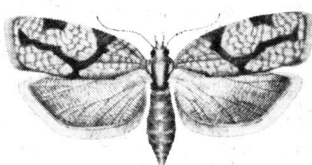
That makes it a smectic liquid crystal.

2 In May 1978 we incinerated our entire previous stock of No. 10086. On purpose. Wasn't selling well enough to keep in inventory.

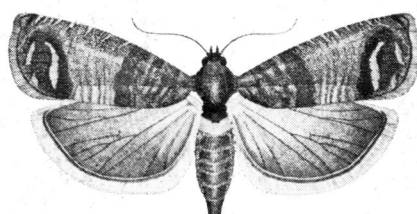
3 A bit earlier the same year, *Journal of Chromatography* published a paper by Ralph Lester of the Tropical Products Institute in London about lepidopterous sex pheromones (156, 55-62). Ignored it. Not our sort of thing. Never noticed that it mentioned diethyl 4,4'-azoxydicinnamate.

4 Liquid crystals have been known since 1888. Spurts of interest over the years. Recent spurt in the early '70s. Digital displays for watches and calculators, thermometry.

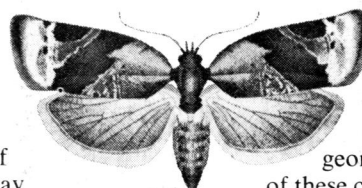
Review paper appeared in *Eastman Organic Chemical Bulletin* in 1973. Marketplace answered us with the message that we could serve best by offering certain intermediates which other manufacturers finish into commercial liquid crystal products. But hardly by the tank car.



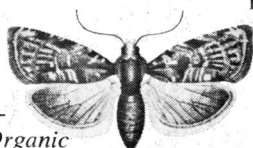
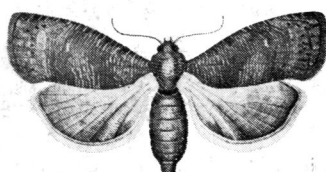
5 Tennessee is where we make many intermediates in tank-car quantities for many sectors of the chemical industry, including manufacturers of organic pesticides.



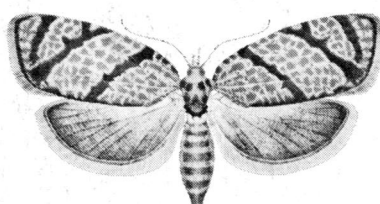
6 If all production of pesticides were to cease forthwith, more people would soon be going to bed with empty tummies. (Or at least meat consumption would rise. Insect meat, that is. Many dislike it.) But one of the unintended effects of pesticides is the way they speed up evolution of resistant insect strains.



7 Hope has arisen of reducing populations of insects that rob us of food, fiber, and lumber by disrupting the reproductive cycle through deception with their own sex attractants. Each species must have its own exclusive signals from female to male. That's what has made the existence of the species possible. From the human viewpoint the perfect specificity is the beauty part. Magic bullets to hit only the bad guys. Cut 'em way back but don't quite eliminate them.



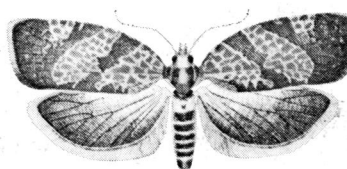
8 These pheromones are mostly linear aliphatics of 12 to 18 carbons with



one or two olefinic linkages. Encoding for species often involves only position and geometry of the double bonds. Synthesis of attractants of target species worth high-grade chemical effort. But first you have to know your target's code. Many, many targets.

9 It occurred to Brenda F. Nesbitt of the Tropical Products Institute that smectic liquid crystals might differentiate isomeric solutes by gas-liquid chromatography on the basis that differences in steric configuration influence penetration into a liquid crystal lattice—an entirely different separation mechanism from GLC with isotropic stationary phase, which depends on differences in electronic properties.

10 Dr. Nesbitt's colleague Dr. Lester proved that our No. 10086 on flux-calcined diatomite could make her idea achieve quicker and better analysis of geometric and positional isomers of these compounds than reported from attempts with other chromatographic approaches.



11 Eager readers of Lester's paper learned to their disappointment that No. 10086 was no longer available.

12 It is now.

The chemical business is very interesting. Also useful to have around.

1880  1980