

1979 Science and Public Policy Banquet

Sponsored by the AAAS Committee on Science, Engineering and Public Policy and Congressional Science Fellow Program.

At the AAAS Annual Meeting,
Houston

"Value Judgments in Science and Technology"

Speaker: Anna J. Harrison

Professor of chemistry at Mount Holyoke College, president of American Chemical Society for 1978, and member, AAAS Board of Directors (1979-1982).

WHEN: Friday, 5 January 1979

Dinner at 8:00 p.m. Cash bar at 7:00 p.m.

First appearance of Nancy Abrams, singer and guitarist, performing Science and Public Policy songs during the reception.

WHERE: Chaparall North/Mariott Hotel

COST: \$10

TICKETS: Available only at AAAS Registration area in Grand Ballroom Foyer of Shamrock Hilton through 2:00 p.m. Friday, 5 January.

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Those selected as Fellows will work for 10 weeks during the summer as reporters, researchers, and production assistants at radio stations, television stations, newspapers, and magazines throughout the United States. Fellows will have the opportunity to participate in the process by which events and ideas become news items, to increase their understanding of editorial decision-making and information dissemination, and to develop skill in conveying to the public a better understanding and appreciation of science and technology.

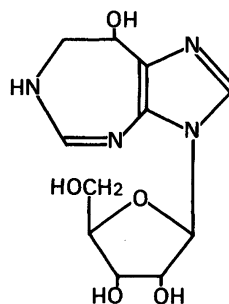
To obtain a description of the program and information about application procedures, write to:

Coordinator
Mass Media Intern Program
AAAS, 8th Floor
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POSITIONS WANTED

Biochemist/Organic Chemist. Ph.D. 1967. Extensive experience in enzymology, protein chemistry, and organic synthesis. Worked on ribonuclease, papain, thymidylate synthetase, γ -glutamyl transpeptidase, kinin-kininogen system, cell membrane transport system, connective tissue proteins; synthesis and structural determination of radioactive enzyme inhibitors and antineoplastic compounds; purification, modification, and characterization of macromolecules and biochemical compounds. Expertise in modern instrumental techniques: amino acid and peptide analysis, chromatography and electrophoresis, UV, IR, ORD, NMR, MS, fluorometry, centrifugal analysis, cell component isolation, and radiochemical techniques. Box 6, SCIENCE. X

Bioorganic Chemist: Ph.D. Preparation and applications of a novel immobilized reagent. Total synthesis of natural products, heterocycles having physiological properties. Isolation, structure determination, biogenesis of toxic fungal metabolites. Publications. Will relocate. Industrial position preferred. Box 13, SCIENCE. X

Carbohydrate Biochemist/Membrane Biochemist. Ph.D. 1968. Extensive research experience in carbohydrate structure and function, membrane protein and glycoprotein, enzyme purification, chemical analysis. Seeks research position. Box 11, SCIENCE. X

Chemist/Lawyer. Ph.D. 1959; J.D. 1977. Desires position in environmental or health and safety area. Box 12, SCIENCE. X

Immunologist. Ph.D. 1969. Extensive expertise in cellular and humoral immunology, lymphokine evaluation, immunochemistry. Seeks industrial position. Experience qualifies coordinating research efforts at group leader level. Box 10, SCIENCE. 1/5, 12

Marine Biologist with M.S. plus 5 years of experience in environmental research specializing in larval fish taxonomy, including 4 years as principal investigator of entrainment study, needs change to broaden experience. Desires ichthyology or fisheries research position. Box 9, SCIENCE. X

POSITIONS WANTED

Evolutionist/Generalist: seeking 1979 academic position. Ph.D. Harvard, 1973. Courses taught: genetics, comparative vertebrate anatomy, cytogenetics, vertebrate ecology, biogeography, invertebrate biology (marine), and general biology. Research: comparative population cytogenetics, modes of speciation and evolution, evolutionary biogeography, systematic herpetology, and evolutionary epistemology. Field experience: United States, Mexico, West Indies, Poland, Israel, Iran, and Australia. Grants, publications. Available for interviews, spring 1979. Write: W. P. Hall, University Research Fellow, Department of Genetics, University of Melbourne, Parkville, Victoria 3052, Australia. 1/5, 26

Fisheries/Aquatic Biologist: M.S. 1978, in fisheries biology and management; extensive experience in stream management of salmonids, with strong background in water quality, bioassay techniques, and aquatic fauna/flora. Seeks research position in government, industry, or consulting field. Box 7, SCIENCE. X

Microbiologist/Virologist. Ph.D. Publications, teaching, and experience: viral oncology, cell culture, virus characterization, molecular aspects of nucleic acids/proteins, RNA/DNA hybridization, restriction endonucleases, marker rescue, affinity techniques, tumor antigens-proteins, RIA, immunofluorescence, radiochemical techniques, carcinogenesis-toxicology. Desires basic or applied research, teaching, administration. Box 8, SCIENCE. X

Pharmacologist. Ph.D. Postdoctoral, teaching, and research experience. Strong background in gastrointestinal and hepatic pharmacology, biological transport and drug interaction studies. Publications. Seeks industrial, government, or academic position. Box 379, SCIENCE. X

POSITIONS OPEN

The Department of Neurology at the University of California, Los Angeles (UCLA), School of Medicine is seeking a qualified applicant for the position of **ADJUNCT ASSOCIATE PROFESSOR**. Applicant must have a Ph.D. degree and will conduct research on response properties of normal and abnormal hippocampal neurons in animals and men. Teaching requirements will include formal course presentation in the neurosciences and supervision of postdoctoral scholars. Applicants are requested to submit a curriculum vitae to: **Richard D. Walter, M.D., Chairman, Department of Neurology, UCLA School of Medicine, Los Angeles, California 90024. UCLA is an Equal Opportunity/Affirmative Action Employer and is desirous of receiving applications from minority and women candidates as well as other qualified persons.**

ANALYTICAL CHEMIST—To develop flame and flameless atomic absorption spectrometric methods for the analyses of marine samples. Candidates should have an M.S. in analytical chemistry or marine chemistry and experience in marine trace metal analyses. Seagoing experience and scuba training highly desired. Send résumé to: **Mark Tatro, Marine Sciences Research Center, State University of New York at Stony Brook, Long Island, N.Y. 11794. Equal Opportunity/Affirmative Action Employer.**

ANATOMIST. The University of Utah College of Medicine, Department of Anatomy, solicits applications for two faculty members for the gross anatomy teaching program. A strong research record in either developmental anatomy or neuroscience is essential. Must have M.D. or Ph.D. degree and a minimum of 10 years of experience. Associate professor level. Salary: \$30,000. *The University of Utah is an Equal Opportunity Employer.* Send applications to: **Chairman, Department of Anatomy, University of Utah College of Medicine, Salt Lake City, Utah 84132.**

The Museum of Zoology at the University of Michigan invites applications for a joint appointment with the Division of Biological Sciences as an **ASSISTANT CURATOR OF MAMMALS** and **ASSISTANT PROFESSOR OF BIOLOGICAL SCIENCES** to begin between 1 July and 1 September 1979. The appointee must have the Ph.D. degree prior to beginning duties. Three letters of recommendation, curriculum vitae, and reprints of publications should be sent before 15 February 1979 to: **Dr. Philip Myers, Museum of Zoology, University of Michigan, Ann Arbor, Michigan 48109. The University of Michigan is a nondiscriminatory, Affirmative Action Employer.**

POSITIONS OPEN

ASSISTANT PROFESSOR. The Joint Center for Radiation Therapy and the Department of Radiation Therapy, Harvard Medical School, has a faculty opening (Ph.D.) at the assistant professor level. Research training and experience should be in cell biology with particular emphasis on somatic cell genetics. The successful applicant is expected to interact with a research group whose interests are mechanisms of drug resistance in mammalian cells and drug-radiation interactions. Postdoctoral experience is required. Send curriculum vitae, bibliography, summary of research experience and goals, as well as the names of three professionals associated with applicant's work. Applications should be directed to: **James Belli, M.D., Department of Radiation Therapy, Harvard Medical School, 50 Binney Street, Boston, Mass. 02115.**

Harvard University, with the Joint Center for Radiation Therapy, is an Equal Opportunity Employer with an Affirmative Action Program, and it encourages applications from women and members of minority groups.

Marine Sciences Institute/Geology and Geophysics, ASSISTANT/ASSOCIATE PROFESSOR. September 1979. Teach undergraduate and graduate courses in physical oceanography; advise M.S. and Ph.D. candidates; also conduct fundable research in physical oceanography. Require Ph.D. in related area; preference given for postdoctoral experience in research and teaching in coastal and estuarine processes, and a successful record of obtaining extramural grants. Apply by 28 February 1979 to: **A. R. Philpotts/S. Feng, U-45, University of Connecticut, Storrs, Conn. 06268. An Equal Opportunity Employer.**

DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS UNIVERSITY OF ALABAMA MEDICAL CENTER

Two tenure or tenure-track positions at the **assistant or associate professor** level for applicants with interests in: (i) reproductive neuroendocrinology and (ii) ovarian physiology. Successful applicants will be expected to participate in teaching of physiology courses for medical, dental, and optometry students, to develop graduate programs, and to develop independent research programs. The positions require a doctoral degree and postdoctoral training. Send curriculum vitae, a summary of future research plans, and names of three references to:

**Professor J. D. Neill
Department of Physiology and Biophysics
University of Alabama Medical Center
Birmingham, Alabama 35294**

The University of Alabama in Birmingham is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR—The Division of Tumor Immunology is seeking a new faculty member at the assistant professor level. We are seeking an investigator with a strong interest and previous experience in analyzing and characterizing the human cellular immune response. *Women and minority candidates are encouraged to apply.* Please send curriculum vitae and the names of three references to: **Search Committee, Division of Tumor Immunology, Sidney Farber Cancer Institute, 44 Binney Street, Boston, Mass. 02115. An Equal Opportunity/Affirmative Action Employer.**

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

Position available 1 July 1979 for **ASSISTANT PROFESSOR** in the Department of Anesthesiology. Must be Board-certified anesthesiologist with licensure in Michigan. Instructional and clinical experience. Director of anesthesia with affiliated institution. Administrative, clinical, and didactic anesthesia responsibilities. Department administrative experience desired. Reply to: **Box 4, SCIENCE. Code 500F0. A nondiscriminatory, Affirmative Action Employer.**

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

Four positions available 1 July 1979 for **INSTRUCTOR** in the Department of Anesthesiology. Board-certified anesthesiologist with licensure in Michigan. Instructional and clinical experience. Clinical and didactic instructor of medical students and residents. Academic anesthesia experience desired. Reply to: **Box 5, SCIENCE. Code 700H0, 800F0, 900F0, 1000F0. A nondiscriminatory, Affirmative Action Employer.**

POSITIONS OPEN

ANATOMIST. Brown University invites applications and nominations for a position as instructor or assistant professor to teach human morphology and to conduct research in any area of the morphological sciences. Applicants should have a doctoral degree and a demonstrated competence and enthusiasm for the teaching of the gross, functional anatomy of man in the perspective of his evolutionary and embryological development and in the focus of its clinical relevance. Candidates with a productive research program in comparative anatomy, primatology, embryology, neuroanatomy, and other aspects of the morphology of whole organisms will be especially welcome. Starting date: 1 July 1979. Send before 1 March 1979 curriculum vitae, description of teaching and research interests, and three letters of recommendation to: **Dr. G. E. Erikson, Division of Biology and Medicine, Box G, Brown University, Providence, R.I. 02912.** An Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR OF ANALYTICAL CHEMISTRY—Tenure-track, fall 1979. Send curriculum vitae with a 250-word outline of your research interests, and request that three letters of recommendation be sent to: **Dr. D. H. Freeman (Chairman, Search Committee), Department of Chemistry, University of Maryland, College Park, Md. 20742.** Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR OF ANATOMY EMORY UNIVERSITY SCHOOL OF MEDICINE

Position available for individual with M.D. or Ph.D. degree to teach human gross anatomy. Candidates should have at least 2 years of postdoctoral training and an active laboratory research program dealing with fundamental problems related to the ultra-structure and/or immunocytochemistry of excitable or endocrine tissues. Members of the faculty are expected to obtain extramural support for their research activities. Deadline for receipt of application is 1 February 1979. Send curriculum vitae and names of three references to: **Chairman, Department of Anatomy, Emory University School of Medicine, Atlanta, Georgia 30322.**

Emory University is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR (tenure-track), Department of Biology, Boston University, for September 1979 to teach an undergraduate course in general microbiology and upper-level and graduate courses in areas of specialty. Postdoctoral experience required, preferably with emphasis in metabolic regulation or membrane function. Teaching experience is desirable. Establishment of an active research program is expected. Send curriculum vitae, pertinent publications, and names of three references not later than 15 February 1979 to: **Chairman, Microbiology Search Committee, Department of Biology, Boston University, Boston, Mass. 02215.** Boston University is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR IN BIOLOGY: EMBRYOLOGIST. The Department of Biology is seeking a candidate holding the Ph.D. degree to teach courses in embryology, anatomy, and physiology. Teaching experience is desirable but not determinative. This is a full-time position and appointment is to be made in August 1979. Salary negotiable. Send credentials and inquiry to: **Dr. Talbert O. Shaw, Dean, College of Arts and Sciences, Morgan State University, Cold Spring Lane and Hillen Road, Baltimore, Md. 21239.** Deadline: 15 January 1979. Equal Opportunity/Affirmative Action Employer.

ASSISTANT OR ASSOCIATE PROFESSOR OF PHYSIOLOGY

Applications are invited for a tenure-track position in the Department of Physiology, University of Virginia School of Medicine. Applicants should possess a strong background in neuroendocrine or neurocardiovascular physiology including postdoctoral training. An orientation toward cellular function is desirable. A demonstrated ability to carry out independent research in the area is also expected. Teaching responsibilities will include medical school and graduate school courses. Applications consisting of an up-to-date curriculum vitae and three references should be sent to: **Dr. Brian R. Duling, Chairman, Search Committee, Department of Physiology, University of Virginia, School of Medicine, Charlottesville, Va. 22908.** Applications will be accepted through 15 February 1979. An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

The Department of Biology anticipates an opening for a tenure-track **ASSISTANT PROFESSOR** commencing August 1979. Responsibilities include development of a research program in animal physiology and teaching in physiology courses. The Ph.D. in animal physiology is required. Postdoctoral experience is preferred. Send curriculum vitae, list of three references, and statement of research interests by 1 March 1979 to: **Search Committee, Department of Biology, New Mexico State University, Las Cruces, N.M. 88003.** An Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR OF ENGINEERING, DARTMOUTH COLLEGE. A search is currently being conducted at the assistant professor level for an individual with a background in thermodynamics, transfer processes, and fluid mechanics. Opportunities exist to contribute to ongoing projects in solar energy, two-phase flows and heat transfer, conversion of biomass into liquid fuels, large-scale energy systems and policies. The candidate should be capable of initiating and supervising research projects with a strong experimental and/or hardware component. Doctorate required.

Applicants are requested to submit a complete résumé, graduate school transcripts, a list of publications, a brief statement outlining present and projected teaching and research, and four letters of reference. Apply before 15 February 1979 to: **Professor G. B. Wallis, Thayer School of Engineering, Dartmouth College, Hanover, N.H. 03755.** Dartmouth College is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and members of minority groups.

ASSISTANT PROFESSOR OF MEDICINE to participate in an investigation of abnormalities in the respiratory control system in disease based on a bioengineering approach. The applicant should have training in control engineering/simulation (to Ph.D. level), previous research experience in respiratory pathophysiology, and in supervision of technicians and research fellows. Applicant should be trained in pulmonary medicine. Applicant will be required to participate in clinical and animal studies and incorporate experimental results into computer simulations. Salary will be compensatory with experience. Further particulars can be obtained by contacting: **James A. Cavallaro, Hospital of the University of Pennsylvania, Cardiovascular-Pulmonary Division, 874 Maloney Building, 3600 Spruce Street, Philadelphia, Pa. 19104.** Equal Opportunity Employer.

ASSISTANT PROFESSOR IN MICROBIOLOGY. Doctorate required. Educational background in microbial genetics, medical microbiology, or microbial or cellular physiology in a medical environment preferred. Must have established research productivity in somatic cell genetics, immunogenetics, or mechanisms of pathogenesis. Position requires active research program and participation in team-taught medical and doctoral courses. Available July 1979. Forward curriculum vitae, list of publications, brief discussion of career goals, and three letters of recommendation to: **Byron Burlingham, Chairman, Department of Microbiology, East Carolina University, Greenville, N.C. 27834.** Closing date: 15 January 1979. An Equal Opportunity/Affirmative Action Employer.

BIOLOGY—Potomac State College, junior college branch of West Virginia University, has a tenure-track position open at the rank of instructor or assistant professor, beginning 16 August 1979. Ph.D. required, zoology background preferred, teaching experience desired; to teach biology at freshman-sophomore levels. Salary: open and negotiable. Applications must be received on or before 20 February 1979. Address inquiries to: **Douglas A. Harrington, Associate Dean, Potomac State College, Keyser, West Va. 26726.**

Potomac State is an Equal Opportunity/Affirmative Action Employer.

YARMOUK UNIVERSITY

The Biology Department at Yarmouk University, Irbid, Jordan, invites applications for an immediate teaching position in the fields of **EMBRYOLOGY, COMPARATIVE ANATOMY, ANIMAL PHYSIOLOGY, ECOLOGY-TAXONOMY.** Applicants must hold a Ph.D. Salaries are competitive, with fringe benefits including travel expenses for appointee and members of family, health and life insurance, and furnishing housing at minimal cost. Address your application to: **Dean, Science and Arts, Yarmouk University, Irbid, Jordan.**

POSITIONS OPEN

ASSISTANT RESEARCH BIOPHYSICIST: Fifty percent time (salary range: \$9,275 to \$10,865), to begin July 1979. To measure NADH fluorescence from the surface of the beating porcine heart. Responsibilities include selection, calibration, maintenance and, as necessary, modification of instrumentation, and collection and interpretation of data. Background in theoretical and applied spectrophotometry required. Previous research in oxidative metabolism helpful. Apply to: **John V. Tyberg, Ph.D., M.D., 1186-Moffitt Hospital, University of California, San Francisco, San Francisco, Calif. 94143.** University of California, San Francisco, is an Affirmative Action/Equal Opportunity Employer.

BIOCHEMIST—We have a postdoctoral position available as of February 1979 for a protein biochemist with a strong interest in neurochemistry to work on the characterization and function of brain glycoproteins important in neuronal control. Applicants should be familiar with microchemical techniques in glycoprotein chemistry. Experience in immunology and enzymology highly desirable. The position is for 2 years. Salary: \$15,000. Send résumé and names of three references to: **Dr. V. E. Shashoua, Mailman Research Center, McLean Hospital, Harvard Medical School, Belmont, Mass. 02178.** An Equal Opportunity Employer.

BIOCHEMICAL ENGINEER

The Fermentation Research and Development Area of The Upjohn Company has an opening for a biochemical engineer. The position normally requires a B.S. or M.S. in chemical engineering or biochemistry with background in the other discipline. Some background or experience in microbiology is also desirable. Computer programming skills in FORTRAN are essential. Further, a working knowledge of electricity and electronics, accompanied by the manual dexterity to put this knowledge to practical use, would be most helpful.

The position has part of the responsibility for the operation, maintenance, and programming of a computer used in the fermentation pilot plant. In addition, this position will have the major responsibility for obtaining, evaluating, and recommending purchase of new equipment and instruments to be used in the fermentation pilot plant. Also the incumbent may participate along with several other biochemical engineers in the design of fermentation equipment. Occasionally the position may require work on the development of new or improved fermentation processes.

Kalamazoo is conveniently located midway between Detroit and Chicago. The community offers a choice of urban or suburban living within easy driving distance of the company. The area offers many recreational opportunities with numerous lakes, streams, and winter sports facilities nearby. Excellent salary, comprehensive benefits, plus opportunities for advancement. Please submit résumé to:

Judy Matousek
The Upjohn Company
7171 Portage Road
Kalamazoo, Mich.
49001

An Equal Opportunity Employer, M/F

POSITIONS OPEN

Applications are invited for a permanent tenure-track position at ASSISTANT PROFESSOR level in the area of **VETERINARY ANATOMY**. Individual will teach either gross or microscopic anatomy in the veterinary medical curriculum and will be expected to develop a research program and participate in graduate instruction. Starting date on or after 1 July 1979.

Candidates should possess the Ph.D. degree or equivalent with preference to those who also hold the D.V.M. or equivalent. Salary commensurate with qualifications. To ensure full consideration, applications should be received by 1 March 1979.

Send curriculum vitae and three names for references to: **Everett Heath, Chairperson, Anatomy Search Committee, Department of Veterinary Biosciences, University of Illinois, Urbana, Illinois 61801; telephone: 217-333-7574. The University of Illinois is an Affirmative Action/Equal Opportunity Employer.**

BIOCHEMIST. Applications are being sought from scientists, preferably with experience with tissue culture and study of proteins and glycoproteins, to investigate cell-to-cell interactions and nerve dysfunction. The work is to be done in a separate laboratory within a multidisciplinary Peripheral Neuropathy Clinical Center at Mayo Medical School and Mayo Clinic. Only the most highly qualified and recommended applicants will be considered. Funding for the research program is available. The position could become permanent. Curriculum vitae, reprints, and three letters of reference should be sent to: **Chairman, Selection Committee, Peripheral Neuropathy Clinical Center, Room 812, Guggenheim Building, Mayo Clinic, Rochester, Minnesota 55901. Mayo is an Equal Opportunity Employer.**

BIOCHEMIST—PHYSIOLOGIST. The Department of Neurosurgery of the Johns Hopkins University School of Medicine is seeking candidates at the instructor or assistant professor level with experience in cyclic nucleotide chemistry and an interest in transport. Problem areas include the biochemical mechanism of cerebrospinal fluid production and physiologic parameters of cerebrospinal fluid production. The position is open immediately. Send curriculum vitae and representative publications to: **Dr. Mel H. Epstein, Director of Pediatric Neurosurgery, Johns Hopkins University School of Medicine, Blalock 1404, 601 North Broadway, Baltimore, Maryland 21205. The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.**

BIOCHEMIST SABBATICAL REPLACEMENT
One position (contingent upon available funds) starting 1 August 1979 for 12 months. Appointment to be at the assistant to associate professor level. An earned doctorate is required with a specialization in biochemistry. Postdoctoral and teaching experience is preferred. Duties to include a combination of undergraduate, graduate, and medical school biochemistry teaching. Research opportunities are available. Applications should be forwarded to: **Office of the Associate Dean, Attention: Paul A. Hargrave, Ph.D., Chairperson Search Committee, School of Medicine, Room 323, Lindegren Hall, Southern Illinois University, Carbondale, Illinois 62901, prior to 15 February 1979.**

Southern Illinois University at Carbondale is an Equal Opportunity/Affirmative Action Employer.

BIOLOGY: assistant or associate professor, liberal arts college, tenure-track position, September 1979. Ph.D. required. Competency in genetics, embryology, and physiology; familiarity with computer application desirable. Salary competitive. Send curriculum vitae to: **Dean, Emory and Henry College, Emory, Virginia 24327. An Equal Opportunity Employer.**

CHAIRMAN, DEPARTMENT OF CHEMISTRY, Syracuse University. Applications and nominations are invited for this position to start on 1 July 1979 or as soon thereafter as possible. The Department of Chemistry has a commitment to outstanding research and teaching programs and seeks a chairman to provide exceptional leadership in both areas. Rank and salary are negotiable and the area of research is open. Candidates should have an established reputation in research with a strong interest in teaching and administration. Applicants should send curriculum vitae and arrange for three or more letters of reference to be sent to: **Professor George H. Atkinson, Chairman, Search Committee, Department of Chemistry, Syracuse University, Syracuse, New York 13210. Applications should be completed by 1 February 1979. Syracuse University is an Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

BIOPHYSICIST

A tenure-track position will be available in biophysics at the University of Illinois effective fall 1979. The position is expected to be at the assistant professor level. It is anticipated that the successful applicant will carry out research and teaching in biophysics, in the general area of biomolecular structure. Candidates should have a Ph.D. degree and some postdoctoral experience. Salary is negotiable. Please send your curriculum vitae by 1 March 1979 to: **Dr. A. R. Crofts, Chairman of Biophysics, 524 Burrill Hall, University of Illinois, Urbana, Ill. 61801. Telephone: 217-333-7407. The position is conditional upon continued availability of funds. An Equal Opportunity/Affirmative Action Employer.**

CELL BIOLOGY AND PATHOLOGY OF CARDIOVASCULAR DISEASE, PRE- AND POSTDOCTORAL POSITIONS. Ultrastructure; pathology; pharmacology; growth control; mutagenesis; lipid, collagen, glycosaminoglycan biochemistry; platelet, smooth muscle, endothelial cell functions.

Inquiries to **Dr. S. M. Schwartz, Department of Pathology, SM-30, University of Washington, Seattle, Wash. 98195.**

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

CELL CULTURE SPECIALIST, thermo/radio biology. A postdoctoral research associate position (\$14,000) is available immediately to study cellular injury from treatments including high-intensity microwaves, hyperthermia, and heavy particle irradiation. Prime responsibility for cell culture laboratory in: **Radiation Research Division, Department of Radiation Therapy, University of Maryland School of Medicine, 660 West Redwood Street, Baltimore, Md. 21201. Attention: Dr. J. E. Robinson. Telephone: 301-528-7133.**

CELL PHYSIOLOGIST The Department of Physiology-Anatomy UNIVERSITY OF CALIFORNIA BERKELEY

Invites applications to fill a tenure-track position in physiology at the assistant professor level. Responsibilities will include teaching in undergraduate cellular physiology and advanced courses in the candidate's area of research expertise. In addition to excellence in teaching, candidates should be thoroughly involved in an ongoing, active research project and be successful contributors to that area. Research emphasis should be on physiological problems at the cellular level. Preference will be given to applicants working in areas of membrane biology, receptor function, secretion, or motility. Interested individuals should write a letter explaining their qualifications for the particular position and enclose current curriculum vitae and a list of three or more persons who could act as referees to: **Physiology Search Committee, Department of Physiology-Anatomy, 2519 Life Sciences Building, University of California, Berkeley, California 94720. Applications must be received by 1 February 1979. The University of California is an Equal Opportunity/Affirmative Action Employer.**

Wanted: recent Ph.D. **CHEMIST** with training in protein chemistry and structure to work on active project involving microbial insecticidal toxins. Duties will include preparing, analyzing, and comparing fragments of insecticidal toxins produced by closely related microorganisms. The person selected will be expected to form part of a team composed of a microbiologist, an entomologist, and himself/herself to cooperate in studies correlating structure and activity of these toxins. Send résumé to:

**Dr. H. T. Dulmage
Location/Research Leader
USDA-ARS
Cotton Insects Research
P.O. Box 1033
Brownsville, Texas 78520**

ECOLOGIST. To conduct research on ocean disposal effects. Thorough knowledge of marine ecosystem interactions, food chain dynamics, physiology of various organisms. Demonstrated marine research ability; bachelor's degree in ecology, biological oceanography, or related field. Salary: \$27,453. Position is in career civil service. For further information contact: **Dr. K. Park; telephone: 301-443-8866. Applications (SF-171) should be sent to: Department of Commerce, National Oceanic and Atmospheric Administration, 6001 Executive Boulevard, Rockville, Maryland 20852. Attention: AD415: D. Hayes. Equal Opportunity Employer.**

POSITIONS OPEN

CHAIRMAN DEPARTMENT OF BIOCHEMISTRY Medical University of South Carolina

Applications are invited from highly qualified individuals to assume the position of professor and chairman of the department. Candidates must have the Ph.D. and/or M.D. degree, administrative-leadership abilities, and a strong ongoing research program in some aspect of the biochemical sciences. Exciting opportunities exist in this dynamic, growing institution dedicated to education in the health sciences, research, and health care delivery. Nominations or applications should be sent to: **Dr. Hiram B. Curry, Chairman, Search Committee for Biochemistry, Department of Family Practice, Medical University of South Carolina, 171 Ashley Avenue, Charleston, South Carolina 29403. An Equal Opportunity/Affirmative Action Employer.**

CHAIRMAN, DEPARTMENT OF MICROBIOLOGY, IMMUNOLOGY, AND PATHOLOGY

Applications are invited for this position which becomes available 10 March 1979. Candidates should provide evidence of ongoing scholarly achievements in teaching and research, and have the ability to provide administrative and academic leadership for a department of four full-time faculty and ten part-time faculty members. Send curriculum vitae and three letters of reference, by 15 February 1979, to: **Jean E. Turnquist, Ph.D., Chairman Search Committee, Pennsylvania College of Podiatric Medicine, 8th and Race Streets, Philadelphia, Pa. 19107. An Equal Opportunity/Affirmative Action Employer.**

CHAIRPERSON, Biology Department, Simmons College, Boston. Begin summer 1979. Associate professor. Ph.D. Vertebrate physiologist to teach general physiology. Demonstrated administrative skills, teaching excellence, research program involving undergraduate participation, and a strong commitment to undergraduate education are essential. Write promptly for detailed job description and application procedure to: **Dr. Richard Nickerson, Search Committee, Biology Department, Simmons College, 300 The Fenway, Boston, Mass. 02115. An Affirmative Action/Equal Opportunity Employer.**

CLINICAL RESEARCH LABORATORY DIRECTOR

Research staff position available immediately for a Ph.D. or M.D. with biochemical training to direct the core laboratory of a General Clinical Research Center. This position provides an opportunity to conduct research in collaboration with a group of excellent clinical investigators. Experience in analytical techniques, especially radioimmunoassay, is important but not necessary. Appointment may be made as either a research associate or assistant professor. Interested candidates should send curriculum vitae and names of three references to: **General Clinical Research Center, Columbia Presbyterian Medical Center, Presbyterian Hospital 4-458, 622 West 168 Street, New York, N.Y. 10032. Columbia University is an Affirmative Action/Equal Opportunity Employer.**

FIBRINOGEN RESEARCH. Research staff position available July 1979 for a Ph.D. or M.D. with training in protein chemistry. Some knowledge of coagulation chemistry would be helpful but is not absolutely necessary. Studies involve identification of sites of crosslinking reactions and isolation of specific fragments of the fibrinogen molecule for use in immunologic tests related to thrombosis and blood coagulation disorders. Interested candidates should send curriculum vitae and names of three references to: **Department of Medicine, Box 25, College of Physicians and Surgeons of Columbia University, 630 West 168 Street, New York, N.Y. 10032. Columbia University is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION (2 to 3 years) for biochemist with background in protein chemistry who seeks experience in endocrinology-oriented research. Project includes structural studies of precursor synthesis of hormones and immunochemistry. Position available immediately or beginning July 1979. Salary: \$14,000. Send curriculum vitae and names of references to: **Dr. Robert E. Canfield, Director, Division of Hormonal and Metabolic Disorders, Department of Medicine, College of Physicians and Surgeons of Columbia University, 630 West 168 Street, New York, N.Y. 10032. Columbia University is an Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

CHAIRPERSON, Department of Botany. The Department of Botany at Washington State University is seeking applications for the position of department chairperson. The appointment will be made for the academic year beginning in September 1979, at a senior level commensurate with experience. Candidates should have a record of quality research, proven ability to attract extramural funding, and a commitment to quality instruction at all levels. Their teaching and research interests should complement those of existing faculty. Administrative or supervisory experience is desired. The appointee will be expected to maintain an active research program and to participate in the instructional program of the department. Applicants should send curriculum vitae documenting their qualifications as a potential chairperson, a statement of current research interests and plans, and names of three references to: **Dr. Donald B. Fisher, Chairman, Chairperson Search Committee, Department of Botany, Pullman, Wash. 99164.** Closing date for the receipt of applications will be 15 February 1979. *Washington State University is an Equal Opportunity/Affirmative Action Employer.*

CHAIRPERSON Department of Biological Sciences Illinois State University

Applications are invited for chairperson of a large, diverse department (37 full-time faculty members) within a university of 19,500 students situated in central Illinois. The department offers B.S., M.S., and Ph.D. degrees. Present enrollment includes 500 undergraduate majors, and 90 M.S. and 23 Ph.D. candidates. Minimum qualifications include a Ph.D., academic experience in undergraduate and/or graduate teaching, interest and demonstrated ability in research in some area of biology. Administrative experience is desirable. Area of research expertise is open. Rank and salary are negotiable. The position is available 1 August 1979 and carries a 12-month contract. Send curriculum vitae and three letters of recommendation or inquiries before 15 March 1979 to:

**Dr. Arlan Richardson
Chairperson Search Committee
Department of Biological Sciences
Illinois State University
Normal, Illinois 61761
Telephone: 309-438-3669**

An Equal Opportunity/Affirmative Action Employer

CHIEF CURATOR OF EARTH SCIENCES NATURAL HISTORY MUSEUM OF LOS ANGELES COUNTY

Nominations and applications are requested from distinguished scholars and academic administrators for the position of **CHIEF CURATOR** of Earth Sciences Division, with an anticipated starting date of early 1980. Salary will depend on experience and qualifications. We especially seek nominations for and applications from individuals who have records of significant and sustained scholarly contributions to a museum-related field of earth sciences and have demonstrated a potential for leadership and administration.

The chief curator must have the vision and leadership capability to maintain and enhance the scholarly excellence of the Earth Sciences Division. As the head of the division, the chief curator is responsible for the operation of the division and hence must have the capability to administer programs, engage the advice of and supervise the curatorial staff, and function effectively in a complex administrative environment.

Nominations should be submitted immediately. Applications including a curriculum vitae and names of four references should be submitted before 1 July 1979 to:

**Search Committee
Earth Sciences Division
Natural History Museum of Los Angeles County
Los Angeles, California 90007**

An Equal Opportunity/Affirmative Action Employer

COMPARATIVE ETHOLOGIST/PHYSIOLOGIST. Assistant professor, tenure-track, fall 1979. Ph.D. required, postdoctorate desired. Teach undergraduate courses in ethology, vertebrate biology, elementary biology; graduate courses in area of expertise. Strong research program necessary. Send application letter and curriculum vitae to: **Dr. Saul B. Barber, Biology Department, Lehigh University, Williams Hall No. 31, Bethlehem, Pa. 18015.** *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

DEAN, ALLIED HEALTH SCIENCES UNIVERSITY OF HEALTH SCIENCES/ THE CHICAGO MEDICAL SCHOOL

Dean sought for School of Related Health Sciences in small, private university devoted to educating health professionals; master's programs in physical therapy, immunohematology, and health services administration; baccalaureate programs in physical therapy, medical technology, and radiological sciences. Qualifications: doctorate, experience in allied health administration, teaching, and curriculum development. Send résumé by 1 February 1979, to: **Jean M. Alberti, Ph.D., Chairperson, Dean's Search Committee, University of Health Sciences/The Chicago Medical School, North Chicago VA Hospital, Building 51, North Chicago, Illinois 60064.** *Affirmative Action/Equal Opportunity Employer.*

DEAN, COLLEGE OF AGRICULTURE UNIVERSITY OF MARYLAND, COLLEGE PARK

The dean of the College of Agriculture is the chief administrative officer of the College of Agriculture at this 1862 land-grant university. The dean is responsible for overall administrative leadership and planning for the teaching, research, and extension education functions of the college.

Desired qualifications include an earned doctorate, proven scholarly and professional competence, experience in administration, and understanding of or experience in academic instructional programs, cooperative extension, and continuing education.

Applications and nominations with résumés should be sent by 16 February 1979 to: **Dr. George E. Dieter, Chairman, Dean of Agriculture Search Committee, College of Engineering, University of Maryland, College Park, Md. 20742.**

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

DEAN SCHOOL OF SCIENCE Indiana University-Purdue University at Indianapolis

Indiana University-Purdue University at Indianapolis (IUPUI) invites applications and nominations for the position of dean of the School of Science.

IUPUI, with an enrollment of over 20,000, is the third largest university in Indiana and includes programs in allied health, art, business, dentistry, education, engineering and technology, law, liberal arts, medicine, nursing, physical education, public and environmental affairs, science, and social work.

The School of Science includes the Departments of Biology, Chemistry, Geology, Mathematical Sciences, Physics, and Psychology. The school enrolls approximately 1000 undergraduate majors and serves 12,000 students per semester. With a full-time faculty of 100, the school offers bachelor's degrees in the six departments and master's degrees in biology, chemistry, mathematical sciences, and psychology.

Qualifications include an earned doctorate, eligibility for appointment as a professor in one of the departments, significant experience in teaching and research, and demonstrated ability to work effectively with students, faculty, and administrators.

Salary negotiable depending upon experience and background.

Please send résumé by 15 February 1979, to:

**Scott Evenbeck, Secretary
Search and Screen Committee for Dean
Indiana University-Purdue University at Indianapolis
1201 East 38 Street
Indianapolis, Ind. 46205**

IUPUI is an Affirmative Action/Equal Opportunity Employer.

MC GILL UNIVERSITY, FACULTY OF MEDICINE, DEPARTMENT OF PHARMACOLOGY AND THERAPEUTICS DEVELOPMENTAL PHARMACOLOGY

Applications are invited for a senior faculty position from individuals interested in directing a multidisciplinary group in this area of research. The group is guaranteed adequate research space and facilities, a generous operating budget and sufficient monies for clinical and nonclinical investigators as well as support personnel. Curriculum vitae, bibliography, résumé of current research activity and interest, and names of three referees should be sent to: **Dr. R. I. Ogilvie, Chairman, Department of Pharmacology and Therapeutics, McGill University, 3655 Drummond Street, Montreal, Quebec, Canada H3G 1Y6.**

POSITIONS OPEN

DIRECTOR, LOS ANGELES COUNTY NATURAL HISTORY MUSEUM

Applications are invited for the position of director, Los Angeles County Natural History Museum, which includes the satellite Page Museum of La Brea Discoveries.

Candidates should have a record of research or scholarly achievement, preferably a Ph.D. degree in either of a field of natural science (life or earth sciences) or history. Administrative experience in a museum or a similar institution is required. Ability to secure endowments and grants is expected. The candidate must work with diverse governance and deal effectively with the public.

The director is responsible to the museum Board of Governors, a private support Foundation Board of Trustees, and the elected Board of Supervisors of Los Angeles County. The director supervises 200 plus full-time employees including 43 curatorial personnel. Principal divisions in the museum are earth sciences, life sciences, history, education, and exhibitions.

Salary will depend upon experience and qualifications.

Send inquiries or applications (with two copies of résumé) to: **Ed N. Harrison, Chairman of the Search Committee and President of the Board of Governors, Los Angeles County Natural History Museum, 900 Exposition Boulevard, Los Angeles, California 90007.**

The Museum is an Equal Opportunity/Affirmative Action Employer.

DIRECTOR, BASIC SCIENCE PROGRAM, CANCER CENTER OF HAWAII. One hundred percent, general funds, tenure-track. **Duties:** responsible for ongoing basic science activities in the center. Responsible for planning and development of all new cancer-related research in basic science program. It is expected that the director will also be engaged in independent cancer-related research. **Minimum qualifications:** Ph.D. or M.D. in cancer-related basic science. Director to have been engaged in independent and peer-reviewed and funded cancer-related research for 10 years or more. **Desirable qualifications:** research experience in carcinogenesis or cancer immunology. Salary commensurate with experience and qualifications. Closing date: 1 April 1979. Send résumé and three letters of recommendation to: **Dr. Lawrence Plette, Executive Director, Cancer Center of Hawaii, University of Hawaii, 1997 East-West Road, Honolulu, Hawaii 96822.** *Equal Opportunity Employer.*

DIRECTOR, INSTITUTE OF MARINE RESOURCES, PROFESSOR, SCRIPPS INSTITUTION OF OCEANOGRAPHY. Senior scientist with experience in innovative investigations related to marine resources and management thereof, to lead research groups at Scripps and University of California, Davis; prepare budgets for university funds and assist in obtaining extramural funds; administer statewide Sea Grant College Program; and teach graduate students. Appointed by the president, University of California. Salary (state-funded) to \$44,000 for 11 months, depending on qualifications. Send curriculum vitae and names of references by 31 January 1979 to: **M. M. Mullin, A-008, IMR Search, University of California, San Diego, La Jolla, Calif. 92093.** *The University of California is an Equal Opportunity/Affirmative Action Employer.*

DIRECTOR, UNIVERSITY OF CALIFORNIA LOS ALAMOS SCIENTIFIC LABORATORY LOS ALAMOS, NEW MEXICO

Applications are invited for directorship to begin 1 March 1979. Director is responsible for: management of laboratory with 6500 staff, annual budget of approximately \$300 million; overall management of research programs both classified and unclassified; negotiation of funding support through major contract between University of California and U.S. Department of Energy. Research programs are devoted to medium energy and other experimental physics, theoretical sciences, chemistry including nuclear chemistry, materials sciences, medical physics, thermonuclear energy, and research related to energy and national defense programs operated under contract with U.S. Department of Energy.

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

Applicants should send current résumé by 15 January 1979 to: **President, 715 University Hall, System-wide Administration, University of California, Berkeley, California 94720.**

An Equal Opportunity Employer

POSITIONS OPEN

The University of Michigan, School of Natural Resources, is seeking applicants for academic year, teaching-research positions at the entry level in the following areas: **ECOLOGY; FISHERY MANAGEMENT and AQUATIC ENTOMOLOGY/BENTHIC ECOLOGY**. An earned Ph.D. or equivalent career experience is desired. Applications should be sent to: **Dean William J. Johnson, School of Natural Resources, The University of Michigan, 3516 Dana Building, Ann Arbor, Mich. 48109. A non-discriminatory, Affirmative Action Employer.**

ELECTRON MICROSCOPE TECHNICIAN

An individual with experience in specimen preparation, ultramicrotomy, and operation of transmission microscopes is invited to apply for this 2-year position. Immediate opening. Send résumé and three references to: **Dr. George M. Happ, Department of Zoology, University of Vermont, Burlington, Vermont 05405.**

An Affirmative Action Employer

ENTOMOLOGIST

The Museum of Zoology of The University of Michigan invites applications for a joint appointment with the Division of Biological Sciences as an **assistant curator of insects and assistant professor of biology**, beginning as early as 1 July 1979. Applicants must have a Ph.D. and must have a demonstrated commitment to systematic and evolutionary studies of insects, and to teaching. Four letters of recommendation, curriculum vitae, and copies of publications should be sent to: **Dr. Thomas E. Moore, Museum of Zoology, The University of Michigan, Ann Arbor, Michigan 48109, no later than 15 February 1979. The University of Michigan is a non-discriminatory, Affirmative Action Employer.**

ENVIRONMENTAL CARCINOGENESIS

The Board on Toxicology and Environmental Health Hazards of the National Academy of Sciences is seeking a senior professional in the area of environmental carcinogenesis. The individual will be responsible for the development and implementation of a broad program aimed at the assessment of scientific data on carcinogenesis with emphasis on etiology, extrapolation, and molecular mechanisms. The individual would develop areas of evaluative investigations, determine technical approaches, and function with a study group to provide expert judgmental analysis for the resolution of scientific problems. A Ph.D. degree or equivalent, with evidence of experience and scholarly contributions to the area of carcinogenesis are required. Applicants should submit curriculum vitae to: **Dr. Robert G. Tardiff, Executive Director, Board on Toxicology and Environmental Health Hazards, National Academy of Sciences, 2101 Constitution Avenue, NW, Washington, D.C. 20418. An Equal Opportunity Employer.**

The Johns Hopkins University **ENVIRONMENTAL ENGINEERING FACULTY APPOINTMENT**. Teaching and research involving chemical, biochemical, and biological processes related to treatment of municipal and industrial wastes, industrial processes to assessment of environmental impact. Professor; other ranks considered commensurate with qualifications. *Johns Hopkins is an Equal Opportunity Employer.* Send résumé to: **Dr. M. Gordon Wolman, Chairman, Department of Geography and Environmental Engineering, The Johns Hopkins University, Baltimore, Maryland 21218. Telephone: 301-338-7090.**

Full-time academic **FACULTY MEMBER** in **ANATOMIC PATHOLOGY** for established Department of Pathology. Title and salary commensurate with credentials. Applications will be received until position is filled. Must be eligible for licensure in the state of California. Send résumé and five references to: **George Lundberg, M.D., Chair, Department of Pathology, Room 3453, M.S.I., University of California, Davis, California 95616. The University of California is an Equal Opportunity/Affirmative Action Employer.** Applications will be accepted until position is filled.

THAI NATIONALS

FACULTY POSITIONS available for graduates in biochemistry or related fields. Good opportunity to join a young, dynamic department with active programs in research (currently: nutrition, reproduction, and tropical diseases) and teaching (medical and postgraduate students). Special consideration to those trained in biotechnology, cancer, and endocrinology. Send curriculum vitae to: **Chairman, Department of Biochemistry, Faculty of Science, Mahidol University, Rama VI Road, Bangkok, Thailand.**

POSITIONS OPEN

ENVIRONMENTAL CHEMIST

The Institute for Environmental Studies of the University of Illinois at Urbana-Champaign invites applications for a tenure-track position for an assistant professor of environmental chemistry specializing in organic analysis. The candidates should have a strong background in modern organic analytical techniques including GC, GC/MS, and HPLC and have a major interest in problems of organic compounds in the environment. A Ph.D. and demonstrated ability to conduct and report high quality research are required. The faculty member will be expected to develop an independent research program as well as to work cooperatively with other members of both the institute staff and the general university faculty in interdisciplinary research programs. Teaching responsibilities may include current courses and possible new course development in applicant's areas of interest. Starting date will be either June or August 1979. Salary is open. To apply, send a current résumé, a detailed statement of research goals, and the names of three references to: **Dr. Ben B. Ewing, Director, Institute for Environmental Studies, 408 South Goodwin Avenue, University of Illinois, Urbana, Illinois 61801; telephone: 217-333-2503.** In order to receive full consideration, applications must be received by 31 January 1979 or 30 days after the appearance of this notice. *The University of Illinois is an Affirmative Action/Equal Opportunity Employer. Women and members of minority groups are specifically encouraged to apply.*

ENVIRONMENTAL HEALTH SCIENCES FACULTY POSITIONS

Appointments from assistant to full professor are now available. Appointees will become members of the University of Rochester Environmental Health Sciences Center and also hold faculty positions in appropriate departments of the School of Medicine and Dentistry.

Current research areas are broadly grouped under neurotoxicology, developmental toxicology, and metabolic processes, which encompasses uptake, distribution, and fate of environmental pollutants. Although the center devotes a major part of its research activities to toxic metals, an applicant's research interests need not be restricted to this area.

The primary criterion for appointment will be excellence in original research. Since the center's research interests embrace the full range of biological systems from molecular to whole animal, applications are invited from all scientific specialties. In addition, a person is being sought to direct the graduate educational program, both pre- and post-doctoral students, in toxicology.

Send applications and résumés, including a complete list of original publications to:

**Dr. William F. Neuman, Chairman
Faculty Search Committee
Environmental Health Sciences Center
University of Rochester Medical School
P.O. Box RBB
Rochester, N.Y. 14642**

GENETIC TOXICOLOGY

The Chemical Hygiene Fellowship of the Carnegie-Mellon Institute of Research has an immediate opening for an individual with direct experience or training in cytogenetics, sister chromatid exchange, and DNA repair/damage. Our needs for this previously advertised position have been clarified and individuals who have applied previously will be considered. Candidates who can fill this position early in 1979 and have the closest background consistent with our needs will receive immediate attention. Please submit detailed curriculum vitae, references, and reprints, to:

**A. R. Ryrholm
Carnegie-Mellon Institute of Research
R.D. No. 4, Box 69
Export, Pa. 15632**

*An Equal Opportunity/Affirmative Action Employer
A division of Carnegie-Mellon University*

GENETICIST. Instructor/assistant professor for September 1979. One-year temporary appointment (sabbatical replacement) to teach undergraduate course in genetics, laboratories, and lectures, and an advanced course to seniors and graduate students. Send résumé and three letters of reference to: **Dr. Theodore J. Starr, Department of Biological Sciences, State University of New York, College at Brockport, Brockport, New York 14420, before 1 May. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

ENVIRONMENTAL RESEARCH PROJECT CHESAPEAKE BAY

Environmental research project involved in multi-level study of the dynamic role of submerged macrophyte ecosystems in the Chesapeake Bay seeks to fill two key positions.

NUTRIENT DYNAMICS SPECIALIST (postdoctoral position) to assist in study of nutrient dynamics of estuarine submerged macrophyte communities; experience in ^{15}N and ^{14}C tracer studies desired. **SYSTEMS MODELER/PROGRAMMER** to assist in mathematical modeling and data analysis: B.S. and/or M.S. in engineering field and experience with FORTRAN programming desired.

Salaries commensurate with experience. Send résumé and names of three references by 30 January 1979 to: **W. M. Kemp, University of Maryland, Horn Point Environmental Laboratories, P.O. Box 775, Cambridge, Md. 21613. Affirmative Action/Equal Opportunity Employer.**

FACULTY POSITION—TOXICOLOGY

Applications are invited for an appointment as assistant biochemist (or biologist) in the tenure-track at the Statewide Air Pollution Research Center, University of California, Riverside, effective summer 1979. Applicants should have demonstrated ability in toxicological research in doctoral or postdoctoral experience. The successful candidate will be expected to establish a vigorous research program on the biological effects of air pollutants. Possible areas of expertise with experimental animals, tissue cultures, or microbial cultures would be in mutagenesis, toxicant-caused changes in ultrastructure, biochemical basis for toxicity, and synergism of toxic chemicals. Applicants from other related areas are welcome to apply. Candidates should send biography and bibliography, a statement of current and future research interests, and names of three scientists who have been asked to send letters of recommendation.

Address correspondence to:

**Faculty Search Committee
Statewide Air Pollution Research Center
University of California
Riverside, Calif. 92521**

Applications will be accepted until 1 February 1979, or until a suitable candidate is located.

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

FACULTY POSITION: Associate professor to full professor. Opening available in mechanical design beginning 1 July 1979. Doctorate in mechanical engineering required with research interests in design and related areas such as materials, computer-aided design/manufacturing, and numerical modeling. Professional status is required as evidenced by the P.E. license or appropriate professional experience. Responsibilities include undergraduate and graduate teaching, directing undergraduate and graduate students, and conducting funded research. Applications must be received by 24 February 1979. Send curriculum vitae to: **Professor G. S. Samuelsen, School of Engineering, University of California, Irvine, Calif. 92717.**

All qualified applicants are welcome; women and minority candidates are encouraged to apply.

The Department of Biology at Randolph-Macon College invites applications for two **FACULTY POSITIONS** at the assistant/associate professor level for September 1979:

1) **INVERTEBRATE ZOOLOGIST** with ecological background to teach courses in invertebrate zoology and ecology, and

2) **DEVELOPMENTAL BIOLOGIST** to teach courses in embryology and animal physiology. Those selected will also be expected to teach general biology. Ph.D. required. Research encouraged. Curriculum vitae and three letters of reference must be received by 15 February. Send to: **W. Wallace Martin, Chairman, Department of Biology, Randolph-Macon College, Ashland, Virginia 23005. An Equal Opportunity/Affirmative Action Employer.**

FACULTY POSITION for an individual with research experience and publications in the field of tumor virology with emphasis upon molecular interactions with the cell. Applicants should send their curriculum vitae, a list of publications, and the names of three references to: **The Search Committee, Department of Microbiology, School of Basic Health Sciences, State University of New York at Stony Brook, Stony Brook, Long Island, N.Y. 11794. Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

FACULTY POSITIONS—MICROBIOLOGY/IMMUNOLOGY. Microbiology Department with emphasis on molecular aspects of microbial pathogenesis and immunology seeks candidates for tenure-track or tenured faculty appointments in the following areas: (i) **IMMUNOLOGY**, (ii) medically related **MICROBIAL ELECTRON MICROSCOPY/ECOLOGICAL**, and (iii) **PHYSIOLOGY AND GENETICS OF PATHOGENIC MICROORGANISMS**. Responsibilities include teaching in medical and graduate courses and development of independent research programs. Level of appointment and salary commensurate with training and experience. Applications for appointments beginning 1 May 1979 through 1 October 1979 should be submitted by 1 March 1979. Ph.D. or equivalent professional degree plus postdoctoral research experience required. Submit curriculum vitae and bibliography, three letters of recommendation, and major publications to: **Dr. Randall K. Holmes, Department of Microbiology, c/o Personnel Office, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20014.** *Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION AVAILABLE CELL BIOLOGY Department of Biology Tulane University

The Department of Biology, Tulane University, is continuing its search for a faculty position in the area of cell biology. Applications by 1 February 1979 are invited for this position, which will be filled at the assistant professor level and will commence August 1979. Candidates should be enthusiastic teachers and will be expected to develop and maintain a strong research program. The appointee will be expected to teach undergraduate courses in cellular and molecular biology and a graduate course in his or her field of specialization.

Applicants should send their curriculum vitae and a statement of their research interests and needs to **Dr. Erik Ellgaard, Chairman of Search Committee, Department of Biology, Tulane University, New Orleans, Louisiana 70118.** Applicants should also have three letters of recommendation sent directly to the chairman of the search committee.

Tulane University is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITIONS—BIOCHEMISTRY

Several tenure-track positions at a level to be determined by qualifications are open in the Biochemistry Department, School of Medicine, at the University of North Carolina at Chapel Hill. We seek to establish expertise in any of the following research areas: culture, genetics, and differentiation of eukaryote cells; cell surface interactions; mammalian gene transfer. However, we will consider outstanding candidates regardless of research interests. Excellence in teaching is expected. Send curriculum vitae, the names of three references, and an outline of research plan by 15 March 1979 to: **Dr. Mary Ellen Jones, Chairwoman, Biochemistry Department, University of North Carolina, Chapel Hill, N.C. 27514.** *We are keenly interested in attracting outstanding women and/or minority scientists to this department. Equal Opportunity/Affirmative Action Employer.*

GENETICS: instructor or assistant professor. Duties include teaching introductory genetics, upper division specialty course(s), and general biology. Ph.D. in genetics required; previous teaching experience desirable. Successful candidate will be expected to develop an active research program in genetics. Position begins 27 August 1979. Application deadline is 1 February 1979. Send complete résumé, three letters of recommendation, and complete transcripts to: **Dr. Robert Johnson, Chairperson, Department of Biology, Southeast Missouri State University, Cape Girardeau, Mo. 63701.** *An Equal Opportunity/Affirmative Action Employer.*

MICROBIOLOGY. Instructor or assistant professor. Duties include teaching bacteriology, upper-division specialty course(s), and general biology. Ph.D. in microbiology required; previous teaching experience desirable. Successful candidate will be expected to develop an active research program in microbiology. Position begins 27 August 1979. Application deadline is 1 February 1979. Send complete résumé, three letters of recommendation, and complete transcripts to: **Dr. Robert Johnson, Chairperson, Department of Biology, Southeast Missouri State University, Cape Girardeau, Mo. 63701.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

EXPERIMENTAL BIOLOGIST/ZOOLOGIST
Iowa State University seeks one or more experimental biologists. At least one position will be in physiology or endocrinology; other positions will be from the following areas: developmental biology, neurobiology, or behavior. Appointment will be at assistant or associate professor level. A Ph.D. is essential; postdoctoral experience and strong prospects for funding of research are desirable. Responsibilities include the establishment of a vigorous research program and teaching at undergraduate and/or graduate levels. Applicants should submit, by 9 February, detailed curriculum vitae, three letters of recommendation, and a letter describing their research interests and plans to: **Chairman, Search Committee, Department of Zoology, Iowa State University, Ames, Iowa 50011.** *Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS/SCIENCES

The University of Houston at Clear Lake City, an upper-level university, located midway between Houston and Galveston, adjacent to NASA Space Center, has four tenure-track faculty positions open. Applicants should have a strong commitment to teaching and will be expected to teach courses at both the introductory and advanced levels. Prior teaching and/or industrial/clinical experience is expected. Salary and rank commensurate with experience.

Applicants for the two positions below must have completed their Ph.D. and would be expected to actively pursue research interests.

BIOCHEMIST: orientation toward cellular or developmental biology, or genetics, and either plant or animal specialization.

GEOLOGIST (SOFT/ROCK): specialization in sedimentology, petroleum geology, stratigraphy or, perhaps, environmental geology.

Applicants for the two positions below must have completed their M.S., M.A., or Ph.D.:

MEDICAL TECHNOLOGIST: registered M.T. (ASCP) with specialization in toxicology, clinical chemistry, parasitology, hematology, or immunohematology preferred.

INDUSTRIAL HYGIENIST: ABHI registered. Ability to coordinate new program and seek accreditation. Specialization in water/air treatment, toxicology, or environmental technology.

Send curriculum vitae and three letters of reference by 1 February 1979 to:

Dr. Robert C. Hopkins
Director of Sciences
University of Houston at Clear Lake City
2700 Bay Area Boulevard
Houston, Texas 77058
Equal Opportunity/Affirmative Action Employer, M/F/H

FACULTY RESEARCH POSITION in shellfish biology. Assistant professor, tenure-track (12 months), N.J. Oyster Research Laboratory, Rutgers University, New Brunswick, N.J. Ph.D. necessary. Requires a broadly trained person capable of designing and executing field and laboratory studies of commercially important shellfish species, such as the oyster, hard clam, and surf clam; studies must provide basic information on reproduction, growth, mortalities, diseases, stocks, recruitment, and environmental influences thereon. Send curriculum vitae, transcripts, and three letters of reference by 28 February 1979 to: **Dr. J. B. Durand, Chairman, Search Committee, Biology Department, Rutgers University, Camden, N.J. 08102.** *Rutgers University, The State University, is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS: (i) Full-time teaching position. Biochemistry and organic chemistry. First-year assignment to be in organic chemistry. Ph.D. required. (ii) Part-time teaching position. General chemistry. Ph.D. preferred. Both positions available September 1979. Send résumé and three letters of recommendation by 1 February 1979 to: **Chemistry Search, University of Puget Sound, P.O. Box 7297, Tacoma, Wash. 98407.** *An Equal Opportunity/Affirmative Action Employer.*

GENETICS, DEVELOPMENTAL BIOLOGY. Teaching position academic year 1979-1980 and 1980-1981 (continuation dependent on establishment of new tenure-track position). Teaching load two preparations per semester plus a short-term unit. Instructor or assistant professor level. *An Equal Opportunity/Affirmative Action Employer.* **R. M. Chute, Chairman, Department of Biology, Bates College, Lewiston, Maine 04240.**

Scientific

ANALYTICAL TOXICOLOGIST ANALYTICAL CHEMIST

The following positions are available with **NORTHROP SERVICES ENVIRONMENTAL SCIENCES GROUP** located at Research Triangle Park, North Carolina.

ANALYTICAL TOXICOLOGIST: Ph.D. in Analytical Chemistry, Pharmacology, or Toxicology with experience in application of GC, LC, and GC/MS to analysis of xenobiotics and their metabolites. Methods development experience and knowledge of pesticide metabolism required. Will function as leader in group developing, testing, and utilizing analytical methodology for analysis of trace quantities of pesticides and other xenobiotics in human, environmental and animal model systems.

ANALYTICAL CHEMIST: BS or MS in Chemistry or biological science with experience in multi residue pesticide analysis by g-c. Will function as lead residue analyst in support of analysis and methods development groups. Some GC/MS preferred.

For further information, send resume with salary history in confidence to:

NORTHROP SERVICES, INC.

P.O. Box 12313
Research Triangle Park,
North Carolina 27709
An Equal Opportunity Employer M/F

Biologist

DIVISION DIRECTOR ENVIRONMENTAL SCIENCE

ESE, a total environmental services consulting firm has a position available for an outstanding individual with a MS or PhD in the life sciences plus several years experience to manage the Environmental Science Division. Background should include management of large multidisciplinary projects, preferably in utilities, phosphate or surface coal mining.

Will manage and further develop a major division which includes aquatic biology, terrestrial ecology and environmental planning activities. Excellent starting salary and the potential for promotion to Vice President.

If you wish to be considered for this position, send your resume with salary history in confidence to: **Hall A. Acuff**

ENVIRONMENTAL SCIENCE AND ENGINEERING, INC.

P.O. Box 13454
Gainesville, Florida 32604
An Equal Opportunity Employer M/F

POSITIONS OPEN

GENETICIST—NORTHWESTERN UNIVERSITY. Assistant professor, tenure-track. Postdoctoral experience is required. Prefer individual working on eukaryotic system. Send curriculum vitae, reprints, other supporting documentation, and names of at least three references to: **Search Committee, Department of Biological Sciences, Northwestern University, Evanston, Illinois 60201.**

Equal Opportunity/Affirmative Action Employer

Highly qualified **HEALTH PROFESSIONAL** sought as associate chief of staff/education. Applicant must have M.D., D.D.S., Ph.D., or ED.D. Large teaching hospital with medical and allied health programs. Must have experience and interest in comprehensive health-related educational activities. *Equal Opportunity/Affirmative Action Employer.* Send inquiries to: **Chief of Staff, VA Medical Center, North Chicago, Ill. 60064; telephone: 312-689-1900, extension 2841.**

HEMATOLOGY—R & D SOUTH, FLORIDA

International diagnostics firm. Excellent benefit package. Ph.D. with ability to carry out independent research and provide a high level of technical support to laboratory personnel. Please send résumé with salary requirements to: **Box 2, SCIENCE.**

Equal Opportunity Employer, M/F

HEMATOPATHOLOGIST to direct Hematology Section, Clinical Laboratories, Emory University Hospital. Minimum of 4 years of experience in morphology, coagulation, general procedures, and laboratory management in academic medical center with demonstrated abilities in teaching and research required. Faculty appointment and salary commensurate with experience. Reply: **Rex B. Conn, M.D., Department of Pathology and Laboratory Medicine, Emory University School of Medicine, Atlanta, Georgia 30322.** *Emory University is an Equal Opportunity Employer.*

IMMUNOGENETICIST

The Department of Microbiology at Southwestern Medical School is soliciting applications for a junior (tenure-track) or senior faculty position in the area of immunogenetics, for appointment in September 1979. Candidates should have a Ph.D. or equivalent, postdoctoral training, and provide evidence for substantial contributions in this field. Appointee will be expected to participate in teaching programs for medical and graduate students and establish an active research program. Send curriculum vitae and the names of three references to: **Dr. James Forman, Department of Microbiology, Southwestern Medical School, 5323 Harry Hines Boulevard, Dallas, Texas 75235.** *An Affirmative Action/Equal Opportunity Employer.*

ONE IMMUNOLOGIST AND ONE TOXICOLOGIST, both with Ph.D.'s, wanted by leading Japanese pharmaceutical company to work in their R & D institute in Japan. Top salary contract negotiable. Send résumé to: **IMCA, 1111, TBR Building, 2-10-2, Nagatacho, Chiyoda-ku, Tokyo, 100 Japan.**

IMMUNOLOGIST—IMMUNOCHEMIST, IMMUNOGENETICIST—A full-time faculty position at the level of assistant professor. Applicants should have postdoctoral experience in their field and be capable of developing an independent research program. Duties include participation in teaching immunology to medical and graduate students. Send curriculum vitae and names of three references to: **Dr. Gerald D. Shockman, Chairman, Department of Microbiology and Immunology, Temple University School of Medicine, Philadelphia, Pa. 19140.** *Equal Opportunity/Affirmative Action Employer.*

INSTRUCTIONAL COORDINATOR/MEDIA SPECIALIST—Tenure-leading assistant/associate professor in life sciences to develop laboratory programs in general biology using multimedia teaching strategies, coordinating introductory laboratory programs, managing teaching assistants, and engaging in creative pedagogical research. Requires Ph.D. plus teaching experience. Salary commensurate with qualifications and experience. Submit curriculum vitae, three references, and evidence of creativity by 1 February to: **Dr. R. E. Ballinger, Vice Director, School of Life Sciences, The University of Nebraska-Lincoln, Lincoln, Nebraska 68588.** *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

IMMUNOLOGIST, Ph.D., assistant professor position in the Department of Surgery with cross appointment in Immunology. Research interest in experimental and clinical transplant immunology. Experience with immunoabsorbent columns helpful. Send curriculum vitae and three letters of reference to:

**Charles T. Fitts, M.D.
Professor of Surgery
Medical University of South Carolina
Charleston, S.C. 29403**

An Equal Opportunity/Affirmative Action Employer

The Department of Biochemistry at the University of Chicago is seeking an outstanding candidate for a **JUNIOR FACULTY TENURE-TRACK APPOINTMENT.** *The University of Chicago is an Equal Opportunity/Affirmative Action Employer.* Please respond to: **Dr. Donald F. Steiner, Chairman, Department of Biochemistry, University of Chicago, 920 East 58 Street, Chicago, Ill. 60637.**

MARINE SCIENTIST

The Center for Coastal Marine Studies at the University of California, Santa Cruz, is seeking applications for a regular faculty position at the associate professor or professor level. Applicant must be an established marine scientist with an active research program. Interest in teaching at both the undergraduate and graduate levels is required. Applicants working in one of the following marine areas are especially sought in order to enhance possible interaction with existing faculty interests: nutrient regeneration (microbiological, geochemical, biochemical); nearshore circulation; acoustics; geology; geophysics; physiological ecology. However, outstanding marine scientists in other areas also are encouraged to apply.

Send curriculum vitae, names and addresses of references, and other pertinent information, before 26 January 1979, to: **Search Committee, Center for Coastal Marine Studies, University of California, Santa Cruz, Calif. 95064.**

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

NEUROANATOMIST

The Department of Anatomy, University of Virginia, is seeking a senior neuroanatomist. Teaching responsibilities include neuroanatomy for first-year medical students and an advanced graduate course. The department stresses research and the candidate is expected to lead an active neuroanatomical program. Other departmental research interests include developmental and cell biology. Opportunities are available for participation in an interdisciplinary program for graduate study in neuroscience. Interested persons should send their curriculum vitae to: **Chairman, Department of Anatomy, Box 439, University of Virginia Medical Center, Charlottesville, Va. 22908.**

An Equal Opportunity/Affirmative Action Employer

NEUROBIOLOGIST

Applications are invited for an appointment, subject to budgetary approval, at the level of **assistant professor** in the Department of Biology, McGill University. Teaching responsibilities will be at both the undergraduate and graduate levels and will include the direction of an undergraduate neurobiology laboratory. A fully equipped neurophysiology laboratory, specialized for auditory research, is available to the successful candidate. Send curriculum vitae, state of research interests, and the names of three referees before 15 February 1979 to: **E. Mader, Biology Department, McGill University, 1205 McGill Avenue, Montreal, Quebec, Canada H3A 1B1.**

PLANT ECOLOGIST

Applications are invited for an appointment, subject to the availability of funds, of an **assistant professor** (tenure-stream), beginning between June and September 1979. Applications, including curriculum vitae, the names of three referees, and a one-page statement of what the applicant considers to be important questions in ecology and his/her research plans should be received by 15 February 1979. In the biology department there are now 11 active researchers in the fields of ecology and animal behavior. **Ecology Search Committee, c/o E. Mader, Biology Department, McGill University, 1205 McGill Avenue, Montreal, Quebec, Canada H3A 1B1.**

POSITIONS OPEN

MARINE BENTHIC ECOLOGIST—Experienced in identification of hard-bottom epibenthic communities off north-east coasts, with demonstrated research in their ecology; sound scuba-diving experience essential. Appointee will join multidisciplinary project studying artificial reef systems in N.Y. Bight. Requirements: Ph.D. or M.S. with appropriate experience at sea; supervision of research personnel and research inventory desirable. Position immediately available. Send curriculum vitae, publications, and names of three references to: **P. M. J. Woodhead, Marine Sciences Research Center, State University of New York at Stony Brook, Long Island, N.Y. 11794.** *Equal Opportunity/Affirmative Action Employer.*

NEUROPHYSIOLOGIST

SUNY—Upstate Medical Center

The Department of Neurosurgery of State University of New York (SUNY) at Upstate Medical Center invites applications from persons trained in neurophysiology who are committed to research and teaching. Appointment will be at the assistant professor level. Responsibilities for teaching and supervision of neurosurgery residents in the applicant's specialty as well as basic neurophysiology are expected.

Candidate should submit curriculum vitae, including a summary of teaching and research experience and interests, and arrange for three letters of reference to be sent to:

**Dr. Robert B. King
Professor and Chairman
Department of Neurosurgery
750 East Adams Street
Syracuse, New York 13210**

NEUROPSYCHOLOGIST. Applications are invited for assistant professor (\$14,680 to \$23,030) or associate professor (\$19,280 to \$27,700) position for September 1979. Individuals should be clinical or experimental neuropsychologists with specialization in the areas of developmental psychopathology and/or psychopharmacology. Demonstrated teaching competence and research accomplishments in at least one of these areas is required. Send curriculum vitae by 28 February to: **Dr. Harold Shuckman, Department of Psychology, Queens College of the City University of New York, Flushing, N.Y. 11367.** *Equal Opportunity/Affirmative Action Employer.*

NEUROSCIENTIST

The Department of Neurosurgery, State University of New York (SUNY), Upstate Medical Center, invites applications for the post of laboratory director of its basic science section. The successful applicant will be expected to develop an independent research program involving some aspect of mammalian sensory or motor systems. Responsibilities include guidance of neurosurgery residents in basic neuroscience research projects. Joint appointment with other basic science departments is encouraged.

The major prerequisites for the position are evidence of research ability and skill in student interactions. The Department of Neurosurgery has a well-equipped laboratory including PDP 11 computer. This is a state funded and tenure-track position. Salary and rank will depend on individual qualifications. *SUNY/Upstate Medical Center is an Affirmative Action/Equal Opportunity Employer.*

Individuals interested in this position should send curriculum vitae and three letters of recommendation to: **Search Committee, Department of Neurosurgery, Upstate Medical Center, 750 East Adams Street, Syracuse, N.Y. 13210.**

PATHOLOGIST—UNIVERSITY OF NEVADA. Applications invited for Board-certified pathologist to join expanding department in newly developing medical school. Assistant or associate professor; academic experience desirable. Applications close 18 January 1979. Write: **M. H. Haber, M.D., Chairman, School of Medicine, University of Nevada, Reno, Nevada 89557.** *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

PHYCOLOGIST. The Biology Department has a 1-year opening at the assistant professor level for a Ph.D. with active research interests involving laboratory and field studies of algae. Teaching duties include courses in algae, botany, and plant physiology. Opportunity is also available to supervise undergraduate honors and independent study. Salary dependent upon qualifications and experience. By 30 January 1979, send a résumé, transcripts, description of professional interests, and three letters of reference to: Dr. Joel T. Kerlan, Biology Department, Hobart and William Smith Colleges, Geneva, N.Y. 14456.

An Equal Opportunity Employer

PHYSIOLOGIST

The Department of Zoology at Oregon State University invites applications for a tenure-track assistant professorship in physiology. Preferences will be given to individuals with extensive training in electrophysiological methodology and whose research is organ-system oriented. Desired research areas include: sensory physiology, neurophysiology-neuroendocrinology interfaces of the brain, and systems physiology involving neuroendocrine function. Experience or interest in computer simulation would be beneficial. A Ph.D. is required and postdoctoral experience is preferred. Other qualifications are open. Applications consisting of curriculum vitae, representative reprints, and three letters of reference should be directed to: **Physiology Search Committee, Department of Zoology, Oregon State University, Corvallis, Oregon 97331** by 15 February 1979. *Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.*

PLANT POPULATION ECOLOGIST

Department of Botany and Plant Sciences, University of California, Riverside, announces a position at the assistant professor level—with both an Experiment Station and academic title, available 1 July 1979. The position is a tenure-track, 11-month appointment in the College of Natural and Agricultural Sciences and in the Agricultural Experiment Station. Ph.D. required; postdoctoral experience preferred, but all qualified candidates will be considered. The appointee is expected to teach an undergraduate course in quantitative plant population or community ecology and to develop a graduate course in area of specialization. Must be willing to serve as major professor to M.S. and Ph.D. students. Must have commitment to research in quantitative ecology of natural and agricultural plant communities and in the genetic changes associated with population dynamics. Must be able to interact with physiological plant ecologists.

Send curriculum vitae and official transcripts and arrange to have at least three letters of recommendation sent to: **Dr. Giles Waines, Search Committee Chairman, Department of Botany and Plant Sciences, University of California, Riverside, Calif. 92521.** Application deadline: 15 February 1979.

An Affirmative Action/Equal Opportunity Employer

POSTDOCTORAL: NEUROENDOCRINOLOGY. Available immediately, as well as over next 18 months, Ph.D. or M.D. Applicants with experience in peptide chemistry, radioimmunoassay, and/or clinical neuroendocrinology preferred; emphasis on pituitary-like peptides in brain, peripheral β -lipotropin, and endorphin. Salary at current NIH stipend level. Send curriculum vitae and names of three references to: **Dorothy T. Krieger, M.D., Director, Division of Endocrinology and Metabolism, The Mount Sinai Medical Center, 100 Street and Fifth Avenue, Room 23-66A, New York, N.Y. 10029.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION AVAILABLE: ENZYMOLOGIST. Department of Dermatology, Tufts University School of Medicine. Work involves enzymatic basis of melanogenesis. Starting salary: \$14,000, and up, depending on experience. Send curriculum vitae to: **Dr. M. Okun, P.O. Box 377, Canton, Mass. 02021.**

POSTDOCTORAL POSITION. Available immediately to study regulation of adenylate cyclase, guanylate cyclase, and protein kinase during the cell cycle. Research experience in enzymology and cell biology required. Salary: \$11,880 to \$14,916 per year. Send curriculum vitae, résumé of research experience, reprints, and three letters of recommendation to: **Dr. B. E. Volcani, Scripps Institution of Oceanography, University of California, San Diego, La Jolla, California 92093.** *Affirmative Action/Equal Opportunity Employer.*

5 JANUARY 1979

Senior Toxicologist

Conduct inhalation toxicology studies at Stauffer's new Environmental Health Center in Farmington, Connecticut.

We are seeking a Senior Toxicologist to conduct our new studies in acute, sub-chronic and chronic inhalation. The position offers opportunities to develop improved techniques for aerosol generation, sampling and chamber design, and good prospects for academic affiliation and continuing professional advancement.

We would like you to have an MS or PhD in an appropriate biomedical science and lab experience in inhalation toxicology or aerosol physics. Our new, well-equipped laboratory facilities are adjacent to the University of Connecticut Health Center, and are located in one of the state's most attractive, semirural townships. Please send curriculum vitae, research background, and salary requirements to: **Dr. J.E. Barney, Stauffer Chemical Co., Suite 327, The Exchange, 270 Farmington Avenue, Farmington, CT 06032.**

An Equal Opportunity Employer, M/F



Veterinarian

We are seeking a D.V.M. with both working experience in pathology/toxicology and a talent for directing animal care technicians. If you're an A.C.L.A.M. Certified Veterinarian with this kind of background and ability, this position offers fine opportunities for research, academic affiliation, and professional advancement.

The new Stauffer Environmental Health Center is adjacent to the University of Connecticut Health Center, and is located in one of the state's most attractive, semi-rural townships. In addition to having operational responsibility for our vivarium, we would like you to be interested in the continuing education of technicians under your direction. Please send curriculum vitae, research background and salary requirements to: **Gary Zwicker, D.V.M., Ph.D., Stauffer Chemical Co., Suite 327, The Exchange, 270**

Farmington Avenue, Farmington, CT 06032.

An Equal Opportunity Employer, M/F



POSITIONS OPEN

An opening for a **POSTDOCTORAL** (\$11,880 to \$14,916) or **ASSISTANT RESEARCH METEOROLOGIST** (\$17,500 to \$22,900) exists in the Ocean Research Division at Scripps Institution of Oceanography. Preference is for a candidate with a strong background in one of the following areas: (i) analytical modeling of large-scale air/sea interactions, (ii) climate dynamics, or (iii) descriptive studies of climatic variability. Address inquiries and résumés to: **Dr. Jerome Namias (S), Climate Research Group, Scripps Institution of Oceanography, A-024, La Jolla, Calif. 92093.** The University of California, San Diego, is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL APPOINTMENTS

The Ames Laboratory of the U.S. Department of Energy has a number of vacancies for postdoctoral fellows in the fields of chemistry, physics, metallurgy, and engineering. The appointments would be for 1 year, renewable for a second year if mutually agreeable. In some instances there may be a possibility for continued employment beyond the 2-year postdoctoral appointment if circumstances warrant.

Interested persons should submit a complete résumé, along with the names and addresses of three professional references, to:

**Ames Laboratory
Personnel Office
127 Spedding Hall
Iowa State University
Ames, Iowa 50011**

An Equal Opportunity Employer

POSTDOCTORAL POSITION—BIOCHEMISTRY

To study the role of retinoglycolipids in glycoprotein biosynthesis. Background in lipids and/or carbohydrates essential. Experience in mass spectroscopy will be helpful. The position is available immediately; the salary is \$12,000 per annum. Send inquiries, including curriculum vitae and names of three references, to:

**Dr. K. V. John or Dr. Helmut Ankel
Department of Biochemistry
The Medical College of Wisconsin
8701 Watertown Plank Road
P.O. Box 26509
Milwaukee, Wisconsin 53226**

POSTDOCTORAL POSITION available immediately. Research involves mechanistic and structural studies on nonheme iron dioxygenases. Instrumentation for rapid kinetics, spectrophotometric, magnetic resonance, and Raman studies available. Experience of strong interaction with large group active in studies of redox enzymes is being offered. Applicant with training in enzymology or biophysics preferred. Contact: **Dr. David Ballou, Department of Biological Chemistry, The University of Michigan, Ann Arbor, Mich. 48109.**

A nondiscriminatory, Affirmative Action Employer.

POSTDOCTORAL POSITION. Opportunity for research training in biochemical and immunological aspects of parasitic diseases, starting 1 July 1979. Send curriculum vitae and names of three references to: **Dr. David A. Levy, Department of Biochemistry, The Johns Hopkins University School of Hygiene and Public Health, 615 North Wolfe Street, Baltimore, Maryland 21205.** A Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION (Ph.D.) available in Division of Otolaryngology and Head and Neck Surgery. Experienced in wound healing, tissue culture, and radiobiology. Interest in immunology helpful, though not necessary. Send curriculum vitae and three letters of recommendation to: **Helmuth Goepfert, Chairman, Division of Otolaryngology and Head and Neck Surgery, University of Texas Medical School, Houston, Texas 77030.** An Equal Opportunity Employer.

POSTDOCTORAL POSITION available now for research on the biophysics and biochemistry of ionic channels in nerve membranes. Experience in electrophysiology is desirable. Applicants with backgrounds primarily in physics or in protein chemistry will also be considered. Appointment is initially for 1 year with the possibility of continuation for two additional years. Salary for the first year is \$12,000. Send curriculum vitae and names of three references to: **Dr. Peter Shrager, Department of Physiology, Box 642, University of Rochester Medical Center, Rochester, N.Y. 14642.** An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

POSTDOCTORAL POSITION available 1 March 1979 for studies on the structure and differentiation of immunoglobulin genes in the mouse and/or human. Send a letter describing present research and dissertation research (if different), curriculum vitae, and names of three references to: **Dr. Janet Stavnezer, Sloan-Kettering Institute, 1275 York Avenue, New York 10021.** An Equal Opportunity Employer.

POSTDOCTORAL POSITION

The Biochemistry Division at the Eunice Kennedy Shriver Center for Mental Retardation has several positions open for persons interested in neurochemistry. The Shriver Center is located in the suburban Boston area and offers a stimulating, intellectual environment. Postdoctoral-level positions are available for candidates with experience in the following areas:

• **ENZYMOLGY.** To study the mechanism of assembly of myelin membranes and the regulation of brain lipid synthesis. Applications should be directed to **Dr. F. Jungalwala.**

• **PROTEIN PURIFICATION AND SEQUENCING.** To study the proteolipid protein from brain myelin. Academic appointments possible. Applications should be directed to **Dr. M. Lees.**

**EUNICE KENNEDY SHRIVER CENTER
200 Trapelo Road, Waltham, Mass. 02154
An Equal Opportunity Employer, M/F**

POSTDOCTORAL POSITION of 2-year duration available immediately for sequence and affinity labeling studies on ribulosebiphosphate carboxylase at salary of \$12,000 for first year. Please send résumé and letters of references to: **Dr. Fred C. Hartman, Oak Ridge-University of Tennessee Graduate School of Biomedical Sciences, P.O. Box Y, Oak Ridge, Tenn. 37830.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION available to study immunity to infectious diseases and cancer. Training in basic immunology is desirable. Campus housing available. Send résumé to: **Dr. Robert J. North, Director, Trudeau Institute, P.O. Box 59, Saranac Lake, N.Y. 12983.** Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION available to investigate the role of phospholipids in the functioning of membrane-associated enzymes and transport systems. Background in biochemistry and phospholipid metabolism. Send curriculum vitae and names of three references to: **Dr. G. A. Orr, Department of Molecular Pharmacology, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, N.Y. 10461.**

POSTDOCTORAL POSITION available after July 1979. The project will consist of electrophysiological experiments in the olfactory pathways of a giant land snail. It is a study of brain mechanisms responsible for species recognition and associative memory of long duration. \$12,000; renewable. Send curriculum vitae and two letters of reference to: **Dr. Ronald Chase, Department of Biology, McGill University, 1205 McGregor Avenue, Montreal, Quebec, Canada H3A 1B1.**

POSTDOCTORAL POSITION available immediately. To study biochemistry of influenza and respiratory syncytial virus. Please send curriculum vitae and two letters of recommendation to: **Dr. Marcel Pons, The Christ Hospital Institute of Medical Research, 2141 Auburn Avenue, Cincinnati, Ohio 45219.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION available immediately (1 to 3 years) for a well-established research project which involves the effect of ion-transporting antibiotics in several types of membrane systems. Experience in cellular or subcellular fractions desirable. Applicants please send curriculum vitae and names of three references to: **Dr. L. K. Steinrauf, Department of Biochemistry, Indiana University School of Medicine, 1100 West Michigan Street, Indianapolis, Indiana 46223.** Indiana University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION, 1979-1980, available immediately, to study the role of protein turnover by vascular smooth muscle in the etiology of hypertension. Experience in biochemistry and muscle physiology required. Send résumé and letters of reference to: **Dr. Richard Odyssey, Department of Physiology, Jordan Medical Education Building, University of Virginia, Charlottesville, Virginia 22901.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS

Several positions available as early as 1 January 1979 for up to 3 years. Research in the areas of bacterial spore membranes; eukaryotic RNA polymerase function; structural and enzymic studies of heparin; protein kinases and membrane phosphorylation; muscular dystrophy, heart and smooth muscle; non-immune related host defense system and phagocytosis by macrophages; and protein nutrition. Applicants should indicate area of preference and send résumé including names of three references to: **Judith A. Finley, Administrative Official, Department of Biological Chemistry, A-312 DMP, College of Medicine, University of Illinois at the Medical Center, 835 South Wolcott Avenue, Chicago, Illinois 60612.**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL RESEARCH ASSOCIATE position available July 1979. Biochemist or physiologist to study transport properties of plasma membrane vesicles isolated from renal cortex. Salary to \$13,000. Send curriculum vitae and three letters of reference to:

**Dr. Peter Aronson
Departments of Medicine and Physiology
Yale School of Medicine
New Haven, Connecticut 06510**

POSTDOCTORAL RESEARCH ASSOCIATE. Position available immediately for parasitologist to study developmental and cell biology of helminths with emphasis on in vitro procedures. Biochemical background preferred. Send curriculum vitae and three letters of reference to: **Dr. Paul R. Weinstein, Department of Biology, University of Notre Dame, Notre Dame, Indiana 46556.** An Equal Opportunity Employer.

POSTDOCTORAL RESEARCH OPPORTUNITY in the Mineral Research Unit at Mayo Clinic. Background in organic or medicinal chemistry sought for collaborative investigation involving vitamin D synthesis and vitamin D metabolism. Address inquiries to: **R. Kumar, M.D., Mineral Research Laboratory, St. Marys Hospital, Rochester, Minnesota 55901.**

An Equal Opportunity/Affirmative Action Institution

POSTDOCTORAL RESEARCH POSITION is available immediately for studies on the role of cyclic nucleotides in platelet function under supervision of a biochemist in collaboration with physiologists, and a pharmacologist. Applicants must hold a Ph.D., M.D. and/or D.V.M., and will be selected on a competitive basis. Prior biochemistry experience (for example, enzyme assay and radioimmunoassay) is important. Résumés should be sent to: **Dr. Arnold White, Dalton Research Center, University of Missouri, Columbia, Missouri 65211.** An Equal Opportunity Employer.

POSTDOCTORAL RESEARCH POSITIONS in (i) chemistry, (ii) biochemistry, (iii) biophysics, and (iv) pharmacology to synthesize novel actinomycin D analogs, and to study the comparative cellular DNA and nucleic acid binding properties of the synthetic analogs versus actinomycin D and other intercalative agents, their cell membrane transport properties in tissue culture or in experimental animal tumors, inhibition of synthesis of macromolecular components in cells, for example, RNA, DNA, or protein and final evaluation of the agents against series of tumor lines both in tissue culture and in transplantable host systems. Strong background in (i) microchemical techniques, (ii) biochemistry (cell transport, cellular metabolism), (iii) biophysical techniques (spectrophotometric, fluorometric, CD/ORD, and NMR), and (iv) tissue culture of mammalian cells and in preclinical pharmacology involving experimental animals is essential. Salaries commensurate with experience. Available immediately. Send curriculum vitae and letters of reference to: **Dr. Sisir K. Sengupta, Department of Obstetrics and Gynecology, Boston University Medical Center, 80 East Concord Street, Boston, Mass. 02118.**

UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE

Otorhinolaryngology (#143) PROFESSOR AND HEAD—of Department of Otorhinolaryngology.

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, Okla. 73190.** We are an Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORATE OR RESEARCH ASSOCIATE IN FISH ECOLOGY

Applications are solicited from individuals with expertise in fish ecology or closely related fields. Marine and/or larval fish experience desirable but not essential. Successful applicant will coordinate study of interspecific interactions among larval fishes in the St. Lawrence estuary. Tenure up to 3 years. Forward curriculum vitae and two letters of reference by 15 February 1979 to:

Dr. W. C. Leggett, Biology Department, McGill University, 1205 McGill Avenue, Montreal, Quebec, Canada H3A 1B1.

The Department of Civil Engineering at Carnegie-Mellon University invites applications for the position of **PROFESSOR** and **DEPARTMENT HEAD**. Applicants should have a strong interest in undergraduate and graduate civil engineering education, administrative experience, and a proven research record in one of the following areas: structural, environmental, or transportation engineering. Applications should be received prior to 1 February 1979 and should be addressed to: Professor Steven J. Fenves, Search Committee Chairman, Department of Civil Engineering, Carnegie-Mellon University, Schenley Park, Pittsburgh, Pa. 15213. An Equal Opportunity/Affirmative Action Employer.

Coastal and Oceanographic Engineering Department at the University of Florida invites applications for a **FULL PROFESSOR** position. Desired areas of expertise are naval architecture and ocean wave spectra. Ph.D. in related field required. Inquiries and résumés should be sent to: Dr. D. Max Sheppard, Acting Chairman, Coastal and Oceanographic Engineering Department, University of Florida, Gainesville, Florida 32611.

The Harvard School of Public Health welcomes applications for a tenured **PROFESSORSHIP** in the biomedical sciences in the Department of Nutrition. The candidate is expected to head the department, which has postdoctoral, doctoral, and master's students, substantial laboratory space, and some endowment. The university is committed to integrate the activities of its various faculties in both research and teaching, and this senior level person would be expected to forward these goals in the nutritional sciences, particularly as they relate to public health problems. Broad qualifications for the position might typically include a Ph.D. and/or M.D. degree; a distinguished record of biomedical research relevant to or involving nutritional sciences; ability to teach nutrition-related graduate courses, and to attract promising students and junior faculty to the field; leadership, administrative experience, and interdisciplinary orientation which includes an interest in health policy issues.

Send curriculum vitae, a list of publications, a statement of current and future interests in nutritional sciences, and the names of two individuals who would be willing to respond to a request for evaluation to:

Emily Morrison
Harvard School of Public Health
677 Huntington Avenue, Room 1013
Boston, Massachusetts 02115

Harvard University is an Equal Opportunity Employer with an Affirmative Action Program.

RESEARCH ASSOCIATE/POSTDOCTORAL. Biochemists or physical biochemists to join group to study protein-protein, and protein-membrane interactions in the rapidly emerging area of coated vesicle self-assembly. \$11,000 to \$14,000. Send résumé and telephone numbers of three references to: Dr. Thomas F. Roth, Department of Biological Sciences, University of Maryland, Baltimore County, Catonsville, Maryland 21228.

An Affirmative Action/Equal Opportunity Employer

RESEARCH ASSOCIATE

Senior electron microscopy technologist. Ability to take, prepare, and interpret electron micrographs of animal and human malignant melanomas. Will participate at all levels of experiments, both clinical (handling tissues from patients) and research (experimental procedures with animals). Minimum of 5 years of experience. Salary commensurate with experience. Send curriculum vitae and references to: W. H. Clark, Jr., M.D., Department of Dermatology, University of Pennsylvania, 3400 Spruce Street, Philadelphia, Pa. 19104.

MRI

INTERNATIONAL OPPORTUNITIES

Midwest Research Institute is an independent not-for-profit organization performing research for industry, government, and public and private groups. MRI scientists operate from four Kansas City divisions in fields including economics, management science, chemistry, biology, energy, environment, and materials research. The North Star Division in Minneapolis specializes in energy management, pollution monitoring regional economics, and industrial research. In Golden, Colorado, MRI operates and manages the U.S. Department of Energy's Solar Energy Research Institute, which is dedicated to supporting the widespread utilization of solar energy technology.

The Institute has undertaken a multi-year program with the Department of the Treasury and the Saudi Arabian Government to upgrade the consumer protection and quality control capabilities of the Kingdom. The program includes provisions for a U.S. management team of representative experts to establish the basic functional capabilities of the quality control agency and its associated laboratories and implement a phased infusion of Saudi Arabians trained in the U.S. or by the team. Team members will be stationed in Jeddah, Dammam, Riyadh, and Hail and will work closely with counterpart Saudi Arabians. The current in-country staff of seven members will increase to about 45 in the third year, and scale down in subsequent years. During the next year numerous analytical chemists and food microbiologists will be chosen to join the team.

ANALYTICAL CHEMIST

Words with Saudi counterpart in planning, conducting and recording food quality control analysis, procedures and research; conducts training of Saudis as an important part of the job; conducts analyses and provides technical assistance and expertise on methods and protocols for determination of metals, pesticides, and chemicals occurring in food products. Ph.D., M.S. or B.S. with a minimum 2 years laboratory experience in analytical chemistry related to food sciences.

FOOD MICROBIOLOGIST

Works with Saudi counterpart in conducting sample analyses and establishing standard operating procedures related to microbiological contaminants. Conducts training of Saudis as an important part of the job. Analyzes Saudi Arabian basic food micro-biological procedures and standards and implements a program for modifying those to meet the objectives of the Kingdom. Ph.D., M.S. or B.S. with a minimum 2 years experience in food microbiology laboratory analytical procedures and sampling techniques.

The selection process, which will include comprehensive interviews, will take place over a period of several months. We will focus on professional qualifications and interpersonal skills as a trainer, as a member of the current team, and as a participant in a unique cultural environment. Actual relocations will begin after January 1, 1979.

An excellent compensation package includes tax equalization and extensive benefits. Furnished villas are provided with appliances, utilities and all services. An auto (and all services) is provided for business or personal use. A generous educational allowance program is available for U.S.-type schooling for dependents in or outside of Saudi Arabia. A month's annual vacation to the U.S. and storage or transportation of household goods are also provided.

Hiring arrangements include a minimum 2-year assignment. If you seek an overseas challenge, please send resumes in confidence to Mr. Glen Crosier, Manager, Staff Relations.

MIDWEST RESEARCH INSTITUTE

425 Volker Blvd.

Kansas City, Missouri 64110

Equal Opportunity Employer m/f

POSITIONS OPEN

RESEARCH ASSISTANT

Opportunity to do basic research in cell biology-biochemistry. Specific background required in both animal cell tissue culture and enzymatic assays. Experience with radioisotopes a must. Experience with amino acid assays, that is, TLC or HPLC a plus.

Applicant must have B.S. or M.S. degree in biology or biochemistry and be able to work independently. If interested, please send résumé, including salary history, in strict confidence to:

Roberta E. Cohen, Employment Manager

MERRELL-NATIONAL LABORATORIES

2110 East Galbraith Road

Cincinnati, Ohio 45215

Equal Opportunity Employer, M/F

Merrell

PSYCHOLOGY

McMASTER UNIVERSITY. The Department of Psychology invites applications for a term (tenure-track) appointment at the assistant or junior associate professor level commencing 1 July or 1 September 1979. Salary and level of appointment will be dependent on qualifications: minimum for an assistant professor is \$17,000 in 1978-1979 and \$21,950 for an associate professor. Applicants with an interest in the physiological or other biological approaches to behaviour will be considered. Preference will be given to applicants who are eligible for employment in Canada at the time of application. Send curriculum vitae, reference letters, and reprints to: **Search Committee, Department of Psychology, McMaster University, Hamilton, Ontario, Canada L8S 4K1.**

PULMONARY PHYSIOLOGIST. Research position evaluating pulmonary function in small laboratory animals exposed to inhaled pollutant compounds. Current studies include measurements of lung mechanics, lung volume, CO diffusion capacity, and distribution of ventilation. Individual will be expected to use and refine these measurements and develop new measurements as appropriate. Minimum academic background in M.S. degree. Previous experience in evaluating pulmonary function in experimental animals preferred. Selected candidate will be encouraged to pursue and develop personal research interests in the area of pulmonary physiology.

Reply in confidence with detailed résumé to: **L. P. Henderson, BATTELLE-NORTHWEST, P.O. Box 999, Richland, Washington 99352.**

An Equal Opportunity Employer, M/F

Wayne State University School of Medicine
Department of Radiation Therapy and the
Associated Central Radiation Therapy Facility
are soliciting candidates for the positions of:

RADIATION THERAPIST
RADIATION PHYSICIST
RADIATION BIOLOGIST
COMPUTER SCIENTIST

Names of candidates with their curriculum vitae and bibliographies should be sent to:

William E. Powers, M.D., Chairman
Department of Radiation Therapy
Harper/Grace Hospital
3990 John R. Street
Detroit, Mich. 48201

Wayne State University School of Medicine and the Central Radiation Therapy Facility are Equal Opportunity/Affirmative Action Employers.

RESEARCH ASSOCIATE position available next July for a postdoctoral (M.D. or Ph.D.) biochemist interested in working in the field of microtubule proteins. Appointment for 2 to 4 years. Stipend (minimum): \$15,000. Contact: **Dr. Martin Flavin, Laboratory of Cell Biology, NHLBI, NIH, Bethesda, Md. 20014.**

RESEARCH ASSOCIATE

The individual will be responsible for all phases of the operation in a tissue culture laboratory, including all isolation, media preparation, and so on. Will be expected to participate in studies concerned both with cell growth and metabolism, and cellular ultrastructure. Must have a master's degree in biology or biochemistry with 2 years experience. Contact:

Personnel Office
The University of Texas Health Science
Center at San Antonio
7703 Floyd Curl Drive
San Antonio, Texas 78284

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

RESEARCH ASSOCIATE—Immediate opening for individual with experience in **AMINO ACIDS SEQUENCE ANALYSIS.** Research involves structural analysis on influenza virus proteins. Salary up to \$20,000, depending on experience. Send curriculum vitae and names of references to: **Dr. E. D. Kilbourne, Chairman, Department of Microbiology, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, N.Y. 10029. An Equal Opportunity Employer.**

Massachusetts General Hospital, Harvard Medical School. **RESEARCH ASSOCIATES:** qualified physicians or biochemists seeking two or more years of postdoctoral research in laboratory and clinical studies of severe adult respiratory failure in a Specialized Center of Research, are invited to apply for positions in pulmonary hemodynamics, surgery, pathology, coagulation, microvascular angiography, and prostanoid metabolism. Send curriculum vitae to: **Dr. Warren M. Zapol, Department of Anesthesia, Massachusetts General Hospital, Boston, Massachusetts 02114. An Affirmative Action/Equal Opportunity Employer, M/F.**

RESEARCH ASSOCIATE, M.S., electron microscopist position available immediately with established group investigating low density lipoprotein receptor interactions and lipoprotein metabolism. Broad experience in electron microscopic technique essential. Background in autoradiography, immunocytochemistry, freeze-fracture, and SEM desirable. Send résumé and references to: **Haven Street-Allen, Department of Personnel, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235. An Equal Opportunity Employer, M/F/H.**

RESEARCH INSTRUCTOR. The Department of Pharmacology, University of Virginia School of Medicine, has a research instructor position available, effective 1 February 1979. Applicants must have a Ph.D. degree in pharmacology or biochemistry and a minimum of 2 years of postdoctoral research experience in the area of insulin control of metabolism including glycogen synthesis and regulation of cyclic AMP-dependent protein kinase. Experience in protein including peptide synthesis and sequencing chemistry is also desirable. Address all inquiries including curriculum vitae to: **Dr. Joseph Lerner, Chairman of Pharmacology, University of Virginia School of Medicine, Charlottesville, Virginia 22908.**

An Affirmative Action/Equal Opportunity Employer

SENIOR BIOORGANIC CHEMIST for 3 years of work on action of chemical carcinogens on sterols and bile acids related to colon cancer. Salary open. Position available immediately in research facility in New York City. Send résumé and three references to: **Personnel Department BC, Public Health Research Institute, 455 First Avenue, New York, N.Y. 10016.**

An Equal Opportunity Employer

SPECIALIST IN NATURAL RESOURCES/ ENVIRONMENTAL POLICY

A private nonprofit corporation located in Washington, D.C., seeks a qualified technical officer to assist in the management of a comprehensive natural resources/environmental policy program. Ph.D. or equivalent experience; broad background in the direction of projects in the fields of environmental policy and resource management; demonstrated skill in written and technical communication; experience in program management essential. Salary: \$32,000 to \$34,000. Please send résumé to **Box 1, SCIENCE. An Equal Opportunity Employer.**

POSITIONS OPEN

PROGRAM DIRECTOR FOR BIOMEDICAL SCIENCES PROGRAM

Program director for newly approved interdisciplinary Ph.D. program, offered jointly by Old Dominion University/Eastern Virginia Medical School. Position available July 1979. Participation in teaching and research is expected. The program is directed toward students interested in receiving a broad knowledge base to aid them in taking an interdisciplinary approach to biomedical problems. An administration/management option is available. The director will implement program policy, represent the program to the community, manage finances, and seek funding. Ph.D. and/or M.D.; 5-year full-time, university-level teaching and research experience; publications; and evidence of administrative abilities and successful external funding required. Salary is competitive. Send résumé and list of references by 9 February for full consideration to:

Dr. Paul J. Homsher

Biomedical Sciences Program of Old Dominion University/Eastern Virginia Medical School
700 Botetourt Street

P.O. Box 1980

Norfolk, Va. 23501

Both institutions are Affirmative Action/Equal Opportunity Employers.

PROTEIN DATA BANK

The Protein Data Bank anticipates an opening for a scientist to work on the data base. Duties would include solicitation of new data, extraction of information from the primary literature, and processing of contributed data into the standard data bank format. The appointee would be involved in writing computer programs to derive a variety of useful information (for example, Ramachandran plots) from the atomic coordinate entries. There would be limited time available for independent research. Applicants should have an advanced degree, knowledge of macromolecular structure analysis, and computer programming experience. For additional information on the Protein Data Bank, see *J. Mol. Biol.* 112, 535-542 (1977).

This position is expected to commence in January 1979.

To apply, please contact:

Dr. T. F. Koetzle

Chemistry Department

Brookhaven National Laboratory

Associated Universities, Inc.

Upton, Long Island, New York 11973

An Equal Opportunity Employer, M/F

RESEARCH ASSOCIATE

Immediate opening for individual at postdoctoral or equivalent level of experience to undertake independent study in area of mammalian cellular senescence and transformation. Familiarity with tissue culture and cell manipulation technique an asset. Starting salary: \$11,000 to \$12,000 per year. The position will be for at least 2 years. Send curriculum vitae and names of three references to:

Audrey L. Muggleton-Harris

Department of Life Sciences

Worcester Polytechnic Institute

Worcester, Massachusetts 01609

Worcester Polytechnic Institute is an Equal Opportunity/Affirmative Action Employer, M/F, and subscribes to HEW Sections 503, 504, and Title IX.

VETERINARY PATHOLOGIST

Primary function will be the establishment and operation of a research diagnostic pathology service laboratory in support of our basic animal health and research program. Collaborative and independent research also encouraged. Candidate should be D.V.M. with pathology Board-certification or eligibility. Experience in primate pathology helpful. Vacancy presently exists. Please furnish résumé, availability, and salary requirements by 1 February 1979 to: **Personnel Manager, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284. Equal Opportunity/Affirmative Action Employer.**

DREXEL UNIVERSITY BIOMEDICAL ENGINEERING AND SCIENCE INSTITUTE SEARCH REDEFINED

Drexel University invites nominations and applications for the following two positions (1) Director of its Biomedical Engineering and Science Institute, and (2) Endowed Ernest N. Calhoun Chair Professor of Biomedical Engineering and Science.

Director—A nationally known research oriented biomedical engineering/scientist is sought with leadership qualities and administrative skill to direct the Institute's multidisciplinary program. The Institute is comprised of 13 full-time faculty from the various colleges of the university, and offers programs leading to the master's and doctorate degree in biomedical engineering and biomedical science. Over 50 students are enrolled in the programs of the Institute. Close academic/research relationships exist with Philadelphia area medical schools.

Endowed Ernest N. Calhoun Chair Professor of Biomedical Engineering and Science—This generously endowed chair is designed for a nationally recognized scholar and productive researcher in biomedical engineering/science with established records of teaching and research. The distinguished Calhoun Chair Professor is expected to pursue an active research program within the Institute for Biomedical Engineering and Science.

Interested applicants may apply for one position or the other by submitting the curriculum vitae and names of five references to:

Dr. Kenneth N. Geller, Director
Center for Multidisciplinary Studies and Research
Drexel University 1-220
Philadelphia, PA 19104

Closing date for applications is February 15, 1979. Drexel University is an Equal Opportunity and Affirmative Action Employer.

SIMON FRASER UNIVERSITY KELOWNA SCHOOL OF RESOURCE MANAGEMENT DIRECTOR

Simon Fraser University invites applications for the position of director of the Kelowna School of Resource Management. The university is planning to introduce this interdisciplinary program in natural resource management in September 1979. The school, located in Kelowna in the Okanagan Valley, will offer third- and fourth-year courses toward a bachelor's degree. The university expects to appoint six faculty this year with additional appointments being made over the next 18 months to total 15 full-time faculty. Final program approval and budgetary support from the Universities Council of British Columbia are pending; a final decision is expected before the end of 1978.

The director will be expected to provide leadership in the development of the school's programs and will be responsible for the administration of the school. Candidates should have demonstrated management abilities and leadership qualities. Previous experience in an interdisciplinary natural resource management program is preferred. The ability to communicate effectively with senior officials of universities, colleges, industry, governments, and the general public is important.

The position falls within the senior academic administration of the university and salary and terms of appointment will be negotiated with this in mind.

The preferred date of appointment is 1 July 1979, but a different starting date could be negotiated. Applicants should send curriculum vitae and the names of three referees to:

Dr. D. R. Birch
Acting Vice-President, Academic
Simon Fraser University
Burnaby, British Columbia, Canada V5A 1S6

FACULTY POSITIONS 1979-1980 KING FAISAL UNIVERSITY COLLEGE OF MEDICINE DAMMAM, SAUDI ARABIA

The expanding College of Medicine, now in its fourth year, is accepting applications from qualified men and women for the 1979-1980 academic year in:

CHEMISTRY	PATHOLOGY
BIOLOGY	COMMUNITY
PHYSICS	MEDICINE
BIOCHEMISTRY	EPIDEMIOLOGY
ANATOMY	MICROBIOLOGY
PHYSIOLOGY	PARASITOLOGY
PHARMACOLOGY	

Doctorate or equivalent degree required. Language of instruction is English. Interviews to be held in London and Houston in late February 1979.

SALARY RANGES (annual, paid monthly in Saudi riyals):

Professor: \$26,118 to \$33,378
Associate Professor: \$23,359 to \$29,712
Assistant Professor: \$19,039 to \$24,757
Lecturer: \$11,906 to \$16,444
(30 percent allowance for M.D. degree)

BENEFITS:

Free furnished housing, educational allowances, airfare to and from Saudi Arabia for family of four, 60-day paid vacation, liberal overweight allowance. No Saudi income tax.

Send two copies of résumé and three references to:

Dr. Tawfik Tamimi
Dean, Faculty of Medicine
King Faisal University
c/o Saudi Arabian Educational Mission
2221 West Loop, South
Houston, Texas 77027
OR
c/o P.O. Box 2
Sunbury on Thames
Middlesex TW16 6EH England

TOXICOLOGIST

Our growing Corporate Toxicology Department has an immediate new position open for a Toxicologist, reporting to the Manager of Corporate Toxicology. Primary responsibilities will include all phases of pre-clinical, dermal toxicological evaluation.

Minimum candidate qualifications are:

- Ph.D. in Toxicology or Pharmacology.
- Post Doctoral to three years' experience in conducting toxicity studies with primary emphasis in dermatological studies.

Alcon Offers:

- Opportunity for professional and personal career growth with an outstanding, quality-oriented company.
- A competitive starting salary.
- Comprehensive life-health insurance coverage (including dental).
- An excellent Profit Sharing Trust program.
- A Southwest life-style in the dynamic Dallas/Fort Worth Metroplex area which offers a wide variety of cultural and recreational diversions in a lower cost-of-living area.

If you are qualified professionally and ready to grow with a growth organization, please send your detailed résumé, in strictest confidence to:

Ken G. Stevens, Corporate Placement Manager

Alcon LABORATORIES, INC.

(Alcon logo)
P.O. Box 1959
Fort Worth, Texas 76101
An Equal Opportunity Employer, M/F

Research

ASSOCIATE DIRECTOR CLINICAL RESEARCH

We seek a bright, aggressive, action-oriented thought leader with strong research interests to fill a challenging position.

Applicants should have a MD degree or a PhD in pharmacology, biochemistry or health related science. The ideal candidate will have a working knowledge of biostatistics and practical experience in clinical research. Demonstrated managerial ability is an absolute must.

This position reports to the Director of Ophthalmic Research and is accountable for activities encompassing all facets of clinical research. These range from protocol design to study summarization and include investigator selection, study negotiation, monitoring, biostatistical data analyses and data presentations for NDA submission.

Allergan Pharmaceuticals, a multinational leader in specialty ophthalmic products, is located in Orange County, California, convenient to a vast array of educational, cultural and recreational centers.

We offer a dynamic growth environment, excellent opportunities for career advancement, attractive salaries commensurate with experience, plus excellent benefits including profit sharing and a stock purchase plan.

If you are an organizer with a proven track record in getting things done, please forward a detailed resume and recent salary history, in strict confidence to:



**ALLERGAN
PHARMACEUTICALS
EMPLOYEE RELATIONS**

2525 Dupont Drive
Irvine, CA 92713

Equal Opportunity Employer M/F

POSITIONS OPEN

STAFF PHYSIOLOGIST

Participate in and provide morphology/pathology expertise to various aspects of the heavy-ion radiology program. The incumbent will also function as an independent investigator working in the areas of early and late effects of radiation on normal tissues, and on radiation carcinogenesis. Some participation in the heavy-ion radiography program may be involved. The incumbent will be expected to seek grant support for independent studies of his/her choice, providing such studies are within the overall scope of the divisional program. Prefer a Ph.D., D.V.M., or M.D. degree with emphasis on morphology/pathology/pathophysiology. Send two copies of curriculum vitae and names of three references to: **Dr. Edward L. Alpen** through **Ron Lowder, Personnel Office, Lawrence Berkeley Laboratory, 1 Cyclotron Road, Berkeley, Calif. 94720. An Equal Opportunity/Affirmative Action Employer, M/F.**

SURFACE PHYSICIST/CHEMIST

Fusion energy research on plasma-wall interaction phenomenon involving atomic hydrogen chemical sputtering and surface cleaning. UHV and surface physics/chemistry experience appropriate. Appoint at research associate or senior research associate level. Appointment for 3 years initially. Well-qualified scientist sought. Appropriate salary available. Write: **Professor P. C. Stangeby, University of Toronto, Institute for Aerospace Studies, 4925 Dufferin Street, Downsview, Ontario, Canada M3H 5T6. Telephone: 416-667-7729.**

Florida Institute of Technology, Jensen Beach, Florida, School of Applied Technology, is recruiting for several full-time **TEACHING POSITIONS** at the instructor or assistant professor level to begin either 15 March 1979 or 15 September 1979. These positions involve 15 to 18 teaching hours per week along with committee work and student counseling.

- 1) Botanist/Ecologist
- 2) Zoologist/Terrestrial Ecologist
- 3) Microbiologist/Parasitologist
- 4) Aquaculture/Marine Invertebrate Zoologist
- 5) Environmental Chemist/Engineer

Send résumé, transcripts, and three letters of reference to: **Dr. R. Hogg, Head of Natural Science Department, Florida Institute of Technology, 1707 N.E. Indian River Drive, Jensen Beach, Fla. 33457.**

TEACHING/RESEARCH POSITIONS (three) in physical oceanography, ocean engineering (coastal and/or mining) available at the assistant or associate professor level. Ph.D. required. Undergraduate/graduate teaching with strong research interest and field orientation desirable. Send résumé and names of references to: **N. W. O'Hara, Head, Department of Oceanography and Ocean Engineering, Florida Institute of Technology, Melbourne, Fla. 32901. An Equal Opportunity Employer.**

WRITER/EDITOR for two periodicals in national and international family planning/population fields. Edit articles, digest papers published in professional journals or presented at meetings; cover and report on professional meetings in United States and abroad. Minimum of 5 years of experience in editing, writing, reporting. Advanced academic training in social science helpful, ability to understand, interpret statistics essential. Familiarity with family planning/population field desirable. *Equal Opportunity/Affirmative Action Employer, M/F.* Send résumé to: **Box 3, SCIENCE.**

FELLOWSHIPS

RESIDENCY/FELLOWSHIP in chemical pathology for 12 months or more, effective 1 January 1979, is available at VA Medical Center, Allen Park, Mich., affiliated with Wayne State University School of Medicine. Automated and special chemistry, toxicology, immunochemistry, and radioimmunoassay are included in this program. Salary dependent upon qualifications. Send inquiries to: **George Kaldor, M.D., Chief, Laboratory Service, VA Medical Center, Allen Park, Mich. 48101. An Equal Opportunity Employer.**

FELLOWSHIPS

Two-year **POSTDOCTORAL FELLOWSHIP** in biochemistry/cell biology available immediately at the Jules Stein Eye Institute, University of California, Los Angeles. Eligibility limited to U.S. citizens and permanent residents. Position should attract someone wishing to work on mechanism of phagocytosis and/or chemistry of plasma membranes. Send résumé, statement of research interest, and names of three references to: **Dr. Michael Hall, Jules Stein Eye Institute, University of California, Los Angeles, School of Medicine, Los Angeles, Calif. 90024. An Affirmative Action/Equal Opportunity Employer.**

DOCTOR OF ARTS IN BIOLOGY: FELLOWSHIPS are available for qualified persons interested in the D.A. degree in biology. The program stresses preparation for undergraduate teaching at colleges and universities. Applicants should hold a master's degree in some area of biology. Deadline for receipt of applications is 15 February 1979. For more information contact: **Dr. Donald P. Streubel, Chairman, D.A. Committee, Department of Biology, Idaho State University, Pocatello, Idaho 83209. An Equal Opportunity Employer.**

Gerontological Society Research Fellowship Program invites applications from social and biomedical gerontologists for positions in governmental offices on aging and organizations involved in the field of aging. Fellows' interests will be matched with agencies needs. Possible projects: needs assessment to an epidemiological study of aging. The program is designed to provide the academic with new research directions as a result of their exposure to the administrative process. The stipend will be \$3,500 for a 3-month, full-time, or 6-month, half-time, placement. Deadline: 2 March 1979. More information: **Gerontological Society, 2728 Durant, Berkeley, Calif. 94704. AoA-DHEW grant supported.**

RADIATION ONCOLOGY TRAINING

Postdoctoral fellowship training appointment in radiation oncology at NCI Radiation Cancer Center in Bluegrass region. NRS fellowship includes clinical and research training and clinical neutron therapy training. Must be U.S. citizen or have permanent immigrant status. Must have M.D. degree, ECFMG, and minimum of 1 year of U.S. training. Three-year training program. Separate program in medical physics for qualified Ph.D. applicants.

Applicants should send curriculum vitae, names of three references, and request application forms from: **Chairman, Radiation Therapy Oncology Center, University of Kentucky Medical Center, 800 Rose Street, Lexington, Ky. 40506.**

The University of Kentucky is an Equal Opportunity Employer.

PRE- AND POSTDOCTORAL FELLOWSHIPS

Training program in **BEHAVIORAL TOXICOLOGY** under the supervision of an interdisciplinary faculty seeks candidates with backgrounds in biopsychology, psychopharmacology animal behavior, or related disciplines to participate in a program concerned with the neurobehavioral effects of environmental pollutants.

Applications and additional information are available from:

**Dr. Zoltan Annau
Department of Environmental Health Sciences
The Johns Hopkins University
School of Hygiene and Public Health
615 North Wolfe Street
Baltimore, Maryland 21205**

POSTDOCTORAL FELLOWSHIP (2 years), available immediately for research on immune mechanisms (cellular and viral) of autoimmune disease. Background in immunology or neurosciences desirable. Send curriculum vitae and names of three references to: **Dr. Roberta Meyers Elliott, Jules Stein Eye Institute, University of California, Los Angeles, School of Medicine, Los Angeles, Calif. 90024. An Equal Opportunity/Affirmative Action Employer.**

INVERTEBRATE NEUROBIOLOGY

Research fellowship available for 2 to 3 years to study molecular mechanisms involved in control of electrical properties of molluscan neurones. Experience with intracellular recording (preferably in *Aplysia*) required. Curriculum vitae and three letters of recommendation to: **Dr. I. Levitan, FRIEDRICH MIESCHER-INSTITUT, P.O. Box 273, CH-4002 Basel, Switzerland.**

WORKSHOP

PHYTOPLANKTON BEHAVIOR IN RESERVOIRS

Under sponsorship of the U.S. Army Corps of Engineers, a workshop on Phytoplankton Interactions in Reservoirs will be held 10 to 12 April 1979 at Asilomar Conference Center, Monterey, California. Contributed papers and short presentations are invited. For further information please contact:



**Dr. Marc Lorenzen
Tetra Tech, Inc.
3700 Mt. Diablo Boulevard
Lafayette, California
Telephone: 415-283-3771**

TRAINING PROGRAMS

PREDOCTORAL—POSTDOCTORAL NUTRITIONAL EMPHASIS PROGRAMS

Various departments in five health sciences schools and area hospitals are participating in providing multidisciplinary research and educational opportunities in nutrition.

Brochures are available through: **The Multidisciplinary Graduate Group in Nutritional Sciences, Biochemistry Department, Cary Hall, State University of New York at Buffalo, Buffalo, New York 14214.**

GRADUATE STUDY

GRADUATE STUDIES. Medical University of South Carolina. Predoctoral traineeships available for study leading to the Ph.D. degree in the Department of Anatomy, Basic and Clinical Immunology and Microbiology, Biochemistry, Biometry, Pathology, Pharmacology, Physiology, or the interdisciplinary program in Molecular and Cellular Biology and Pathobiology. Stipends are \$3900 per year and are awarded on a competitive basis. For application and catalog, write to: **Dean, College of Graduate Studies, Medical University of South Carolina, 171 Ashley Avenue, Charleston, South Carolina 29403. The Medical University is an Equal Opportunity/Affirmative Action Employer.**

GRADUATE ASSISTANTSHIPS IN EVOLUTIONARY ECOLOGY are available for Ph.D. candidates conducting laboratory research on life history evolution and population dynamics with guppies. Prefer individuals with background and interests in ecological theory, mathematics, and statistics. Applications due 1 March 1979. Contact: **Dr. M. Boyce, Department of Zoology, University of Wyoming, Laramie, Wyoming 82071. University of Wyoming is an Equal Opportunity/Affirmative Action Employer.**

COURSES

MARINE BIOLOGICAL LABORATORY
Woods Hole, Massachusetts
will conduct a residential laboratory course
BIOLOGICAL ELECTRON MICROSCOPY
for **TECHNICIANS**
22 to 27 April 1979

This program emphasizes specimen preparation and is intended primarily for technicians with some experience in conventional transmission electron microscopy who wish to add to their formal training. The course also will be of value to inexperienced persons with some theoretical preparation but lacking laboratory practice. The training may be especially appropriate to personnel in anatomic pathology laboratories. No more than 12 students will be accepted. The instructor-in-chief is Morton Maser of Marine Biological Laboratory.

Other short courses on electron microscopy, scanning electron microscopy, freeze-etching, and diagnostic microscopy will be offered by the laboratory in the spring.

Application materials and additional information are available from: **Office of Admissions, Marine Biological Laboratory, Woods Hole, Mass. 02543. Telephone: 617-548-3705.**

An Equal Opportunity/Affirmative Action Institution



PATHOLOGIST & SENIOR TOXICOLOGIST

Ayerst Laboratories, a major ethical pharmaceutical firm, has 2 outstanding career opportunities in our animal health division.

PATHOLOGIST

A.D.V.M., M.D., or PhD is required and board certification is desirable. Responsibility will include experimental design, directing the histology laboratory, interpreting and evaluating histological sections, providing histological service for veterinary research as well as preparing reports for submission to Government regulatory agencies.

SENIOR TOXICOLOGIST

Responsibilities will include the design and supervision of drug safety evaluation studies, supervision of the preparation of draft toxicology reports, preparation of final reports and assisting and conducting, reviewing, and reporting special toxicity reproductive or mutagenicity studies. PhD in toxicology pharmacology or related area required.

Our facility is located in the scenic Adirondack Mountains-Lake Champlain region of N.Y. State: A friendly, lower-cost-of-living area within a short drive to Montreal, the Lake Placid Winter Olympics Site & Vermont Ski Centers.

We offer a competitive starting salary with a full line of benefits, including dental and prescription plans and fully paid relocation & interview expenses.

Send resume and salary requirements to:

Kerry McDonnell
Asst. Pers. Mgr.

Ayerst.

AYERST LABORATORIES
ROUSES POINT, NEW YORK 12979
An equal opportunity employer, M/F

SURFACE EFFECT SHIPS PROJECT HAS OPENING FOR Director of Design and Technology, GS-15

\$38,160 to \$47,500 Per Annum
(depending upon experience)

Top technical authority responsible for the formulation, technical content, integrity and execution of the in-house, laboratory, support contract and major contract R&D efforts of the SES program of the Department of Navy. Responsibilities encompass directing total program implementation from the evaluation and development of studies of SES technologies to the design and formulation of prototypes. Must have broad and significant experience in research and development in the field of Surface Effect Ships and conventional ship design. Civil Service status not required.

Submit SF-171 (Personal Qualifications Statement) to:

**David W. Taylor Naval
Ship R&D Center (SC)
Civilian Personnel Department
Code 712.3
Bethesda, Maryland 20084**

An Equal Opportunity Employer

Director Biomedical Engineering Research

We have an exceptional opportunity for an individual to direct the software and hardware development of an automated cytogenetic analysis system (research project).

The ideal candidate must have a Ph.D., MS or equivalent experience along with a background in biomedical systems, computer interfacing, minicomputers and microprocessors systems. Must have excellent communication skills in order to deal effectively with non-engineering personnel; some familiarity with pattern reorganization helpful.

Biomedical Engineer

Seeking an individual to maintain and develop hardware for an automated cytogenetic analysis system. BS, MS or comparable experience along with a strong background in mechanical and electrical engineering will be required.

Compensation commensurate with ability and experience coupled with a full range of benefits. To further explore these fine opportunities send detailed resume of past work and salary history, in confidence, to:

Personnel Dept.

NORTHWESTERN UNIVERSITY
339 E. Chicago Ave.
Chicago, Illinois 60611

Equal Opportunity Employer m/f

Chief, Medical Neurology Branch

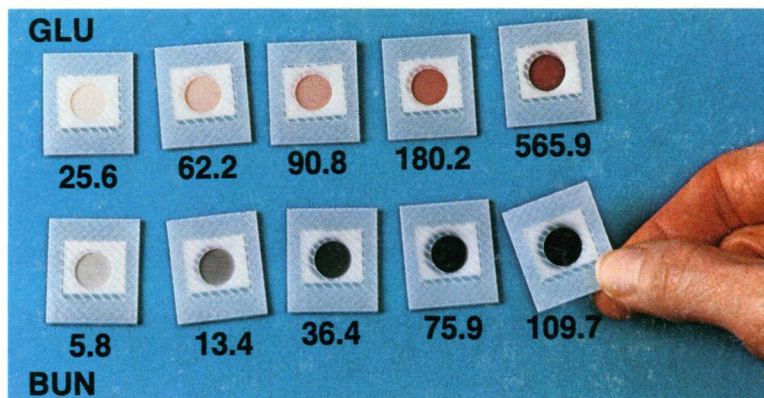
The National Institute of Neurological and Communicative Disorders and Stroke invites nominations and applications for the position of Chief, Medical Neurology Branch. The laboratory is located within the Intramural Clinical Research Program and utilizes laboratory and hospital facilities to conduct a range of basic and clinical research in neurological diseases. Candidates must meet the following mandatory qualifications requirements: an M.D. with 5 years experience (at least 1 year of which must be equivalent to the GS-15 level in the Federal service) in research work in one or more specialty areas such as pharmacology, virology, immunology, pathology, microbiology, biochemistry, and physiology; evidence of significant scientific research and/or clinical achievement in neuroscience, such as publications in leading scientific journals, service on editorial boards of professional journals, consultantships, lectures, etc.; experience in developing a basic biomedical or clinical research program and exercising effective administrative control over the work of professional and supporting staff, including the ability to implement EEO objectives. Desirable qualifications include a high degree of scientific peer recognition; training and education in addition to the M.D.; leadership of a basic or clinical research program; and honors and awards indicative of outstanding contributions to the field of neuroscience. Candidates will be evaluated by a panel of specialists on the extent to which they possess the desirable qualifications.

This position is designated for the Senior Executive Service (subject to the approval of the U.S. Civil Service Commission) with a current salary range of \$44,700 to \$47,500 per annum. The position could also be filled through the Commissioned Corps of the U.S. Public Health Service with the salary level being dependent upon length and breadth of experience.

Nominations and applications should include a Curriculum Vitae, bibliography, SF-171 (Personal Qualifications Statement) and the names of at least two references, and should be submitted by February 19, 1979 to: Dr. Donald B. Calne, Clinical Director, Intramural Research Program, NINCDS, National Institutes of Health, Public Health Service, Building 10, Room 6D-20, 9000 Rockville Pike, Bethesda, Maryland 20014. An Equal Opportunity Employer.

NATIONAL INSTITUTES OF HEALTH

Out of photographic technology but not at all photographic



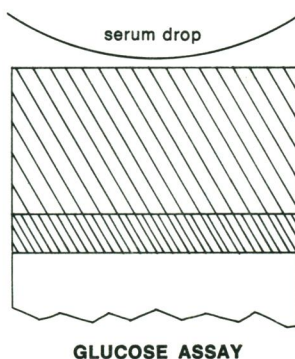
KODAK EKTACHEM Clinical Chemistry Slides.
Actually, nobody handles them or looks at them.

At several hospitals in recent months, laboratory tests for blood glucose (GLU) and blood urea nitrogen (BUN) have been done by a new method based on little squares of film, 16 mm x 16 mm, in plastic mounts as though for a projector. But they bear no images.

In health care, society can ill afford novelty for the sake of novelty. To justify our massive multidisciplinary effort, we must first tell you that the popular image of the clinical laboratory, source of the numbers with which today's quantitatively thinking physicians do their thinking, is out of date. The bubbling glassware representing science at work can't handle the volume of routine tests routinely ordered. Nowadays little test tubes move through very complex machines as liquids are added, withdrawn, stirred, filtered, heated, cooled, bubbled, scanned, etc. in mechanical imitation of the chemists who were called in when the doctors stopped relying on just the gross appearance of the patient and the patient's contents.

Our approach restores simplicity. No pipes, no squirts. The only liquid is the serum under assay. It works because we know how to coat layer upon tissue-thin layer of compositions within which chemical and physical events and interactions can be controlled with a nicety that seemed preposterous when first proposed for color photography long ago. In those days color photography meant three-in-one cameras and infinite patience. Photography has become what it is today because the more that's packed into the layers of the film, the

simpler the manipulation outside the factory. So it is to be in clinical chemistry, we intend. To wit:



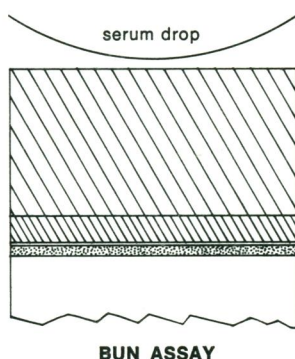
80% air **SPREADING LAYER** whitened with TiO_2 . Precision metering by isotropic porosity instead of fancy plumbing. A variation of 10% in drop volume would make only 1% difference in serum per unit area reaching reagent layer.

REAGENT LAYER

Contains

1. glucose oxidase, enzyme that catalyzes oxidation of glucose to gluconic acid, releasing H_2O_2 ;
2. peroxidase, enzyme that catalyzes coupling, in proportion to H_2O_2 present, of
3. 7-hydroxy-1-naphthol to
4. 4-aminoantipyrine to make dye;
5. buffer to maintain pH near optimum for both reactions

TRANSPARENT SUPPORT through which density of dye to be formed will be measured against white reference



SPREADING LAYER

Same as for GLU

REAGENT LAYER

Loaded with urease, enzyme which releases NH_3 and NH_4^+ from urea. Buffered to pH 8 to push equilibrium toward NH_4^+ .

BARRIER LAYER

Cellulose acetate butyrate passes only nonionic substances, bars buffer and OH^- which would cause dye to form if they penetrated.

INDICATOR LAYER

Cellulose acetate carrying an indicator that gives color weakly with NH_3 and not at all with NH_4^+ . (Otherwise the range of color density would be too wide for convenient reading because the corresponding BUN range of medical interest—4 to 130 mg%—is so wide.)

TRANSPARENT SUPPORT through which dye density will be measured

For answers to the kind of questions that are prompted by more than just passing curiosity, write to R. Barnes Parsons, Kodak, Rochester, N.Y. 14650.

Now wait till you hear about the little chip of nonphotographic film for assaying triglyceride in serum. It contains ATP, the storage stuff for biological energy, and four enzymes, including peroxidase from horseradish and an oxidase we prepare from *Streptococcus faecium*. Or our film for amylase assay. Or the one for bilirubin. We could go on and on. In fact, we have.



The KODAK EKTACHEM GLU/BUN Analyzer is our own version of an instrument which accepts undiluted serum samples and blank KODAK EKTACHEM Clinical Chemistry Slides, measures concentration of GLU or BUN or both, and accumulates the used slides for disposal. It receives push-button instructions to set itself for GLU or BUN, applies a 10- μl drop to the appropriate type of slide with no carryover from one sample to the next, incubates for the proper number of minutes at 37°C, and uses the TiO_2 -impregnated spreading layer of the slide as a background for a photomultiplier to read reflection density through a narrow-band filter at 540 nm for GLU or 670 nm for BUN. The precision required of that reflectometer unit was the kind of challenge to which optical engineers in the color photography business have become accustomed. The microprocessor in the unit even corrects for nonlinearity of reflection density with dye concentration!