

spruce, is the oldest pollen recognized, and an analysis shows that the peat in the main northern and western parts of the swamp is entirely a product of freshwater plant growth. The peat formation was once surmised to have resulted from ponding due to beaver activity, but that view is now rejected. (In fact, the beaver does not now occur there.) Instead, sea-level changes, profoundly affecting the water table, may have been responsible.

Charles Handley prepared an annotated list of mammals after exploring past, sometimes anecdotal, reports and making necessary corrections of previous identifications. He believes that the cottontail rabbit is more numerous than previously, owing to drier terrain, related to drainage changes. The marsh rabbit, here in the extreme northeastern part of its range, is not abundant. The white-tailed deer and black bear, both hunted actively, are the largest wild animals of the swamp. It is recorded (p. 299) that between 1763 and 1768 George Washington visited the swamp at least five times and "found a glorious paradise abounding in wild fowl and game."

James Matta reports on aquatic insects; he, too, evaluated earlier records, and he personally made more than 100 individual collections from the swamp. In his paper 155 aquatic insect species are enumerated, with information on preferred habitat, distribution elsewhere, and seasonal appearance. They represent seven orders and 34 families. All records are carefully documented. An editorial note on p. 220 states that 27 species, including many Odonata, have been added by Matta since the manuscript was received for the volume; in view of the rich insect fauna, further collecting may yield additional species.

In addition to the several census-type papers on fauna and flora, several special papers deal with a simulated model involving a population of white-footed mice, the ecology of two dominant tick species that occur in the swamp, and two inadequately known species of ferns.

To summarize, this is a very substantial, useful book that will be valuable for several generations to come as a source of information. The editor and contributors merit hearty commendation. Biologists interested in further field studies should contact the office of the Dismal Swamp National Wildlife Refuge, Suffolk, Virginia 23508.

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Preservation Efforts

Survival or Extinction. The Practical Role of Botanic Gardens in the Conservation of Rare and Threatened Plants. Proceedings of a conference, Kew, England, Sept. 1978. HUGH SYNGE and HARRY TOWNSEND, Eds. Bentham-Moxon Trust, Royal Botanic Gardens, Kew, 1979. x, 250 pp., illus. Paper, \$17.

The adoption of the Convention of International Trade in Endangered Species of Wild Fauna and Flora on 3 March 1973 and its later ratification provided the needed stimulus for many countries to take notice of the conservation problem and even adopt their own laws regarding threatened and endangered species. Initially, many of the signatories to this convention were unable to identify the endangered elements in their own floras so as to develop lists of species eligible for protection. Many workshops and conferences soon followed. The early conferences and the publications stemming from them were dominated by two themes: the rapid destruction of tropical rain forest and the lack of data regarding threatened and endangered species. Now, conference proceedings are citing examples of successful projects and progress along many fronts. Documented accounts of the disappearance of the rain forest continue, however, leaving little grounds for optimism. As a series, the conference proceedings published since 1973 constitute a valuable record of the mobilization and multifarious efforts under way to save or prolong the existence of some of the plant genetic resources, yet they are also a record of the continued extirpation of plant species.

The theme of the conference from which the present volume results was the role botanical gardens can play in the conservation effort. The 34 papers it contains deal mainly with projects and programs involving European flora, although papers concerning Mexico and portions of Asia, Africa, and South America are included. Noticeably absent are papers relating to projects in the United States and Canada, despite the large number of botanical gardens in the two countries. This may be due to the failure of North American botanical garden personnel to participate in the conference or it may reflect the low level of activity in North American gardens prior to 1978. I suspect both answers have some validity.

Thompson's paper on the preservation of plant resources in gene banks within botanical gardens should be compulsory reading for all botanical garden adminis-

trators. Too often such administrators refer to their gardens as living gene banks, but, as Thompson states, the gardens "fulfill virtually none of the functions of a gene bank, nor in their traditional form could they." Botanical gardens can serve important functions in the study and evaluation of species, in increasing the numbers of individuals, and in the reintroduction of stocks into the wild. The problems of maintaining whole plants in living collections are compared with the problems of maintaining the plants or populations in seed banks or in vitro cultures. Seed banks are considered the best means because the cost is lower and there are fewer problems in maintaining the materials.

The activities of the botanical gardens in the U.S.S.R. are summarized by Gogina. Especially interesting is information concerning the formation by the Council of Botanical Gardens of a special committee for threatened plants in 1974 and how the council and committee are coordinating the efforts of 115 gardens throughout the Soviet Union. Individual papers on the threatened flora of Kazakhstan and on the Tbilisi Botanical Garden in Soviet Georgia provide further insight into the direction and scope of their activities.

This collection of papers is superior to other such efforts. It represents an important stage in the documenting of the battle to preserve the world's botanical diversity. The editors have provided a set of consistently good papers, and *Survival or Extinction* is an important reference for anyone working with rare or threatened plant species.

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Compendium of Phase-Transfer Reactions and Related Synthetic Methods. Listed According to Type of Compound Formed. Walter E. Keller. Fluka AG, Buchs, Switzerland, 1979. xxvi, 166 pp., illus. Paper, \$12.

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Modelling and Optimization of Complex System. Proceedings of a conference, Novosibirsk, Soviet Union, July 1978. G. I. Marchuk, Ed. Springer-Verlag, New York, 1979. vi, 294 pp., illus. Paper, \$14.30. Lecture Notes in Control and Information Sciences, vol. 18.

The Molecular Basis of Force Development in Muscle. Papers from a symposium, Miami Beach, No. 1977. Neil B. Ingels, Jr., Ed. Palo Alto Medical Research Foundation, Palo Alto, Calif., 1979. x, 162 pp., illus. \$19.

My First Summer in the Sierra. John Muir. Houghton Mifflin, Boston, 1979. xii, 272 pp. + plates. Paper, \$5.95. Reprint of the 1916 edition.

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Pseudomonas aeruginosa. Clinical Manifestations of Infection and Current Therapy. R. G. Doggett. Academic Press, New York, 1979. xvi, 504 pp., illus. \$41.

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Publications of the World Health Organization 1973-1977. A Bibliography. World Health Organization, Geneva, 1979 (U.S. distributor, WHO Publications Centre USA, Albany, N.Y.). xxx, 358 pp. Paper, \$23.25.

Quantum Electrochemistry. John O'M. Bockris and Shahed U. M. Khan. Plenum, New York, 1979. xx, 518 pp., illus. \$49.50.

R. Buckminster Fuller on Education. Peter H. Wagschal and Robert D. Kahn. University of Massachusetts Press, Amherst, 1979. 192 pp. \$12.50.

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Vitamin D. Metabolism and Function. H. F. DeLuca. Springer-Verlag, New York, 1979. viii, 82 pp., illus. \$15.95. Monographs on Endocrinology, vol. 13.

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ASSISTANT PROFESSOR OF PHYSICS. Duties: teaching physics, physical science, and math. Qualifications: a minimum of Ph.D. degree in physics. Appointment date: 1 August 1980. Salary: commensurate with qualifications and experience. Applications: interested candidates should forward résumé and three letters of recommendation to: **Dr. Israel Tribble, Vice President and Dean of Academic Affairs, Edward Waters College, 1658 Kings Road, Jacksonville, Florida 32209. Application deadline: 10 June 1980. Edward Waters College is a predominantly black, private, 4-year liberal arts college with an enrollment of approximately 700 students.**

ASSISTANT/ASSOCIATE HORTICULTURIST: Southwestern Washington Research Unit, Vancouver. Full-time research in small fruits with emphasis on red raspberry. Physiology, growth and development studies, and cultural methods related to improved production and efficiency of mechanical harvesting. Approximately 25 percent small fruit weed control.

ASSISTANT/ASSOCIATE HORTICULTURIST: Western Washington Research and Extension Center, Puyallup. Full-time research in physiology of horticultural crops. Studies of stress and cultural factors influencing yield components. Physiology of off-season fruiting in strawberry and raspberry. Approximately 25 percent blueberry physiology and culture. Ph.D. required in horticulture, plant physiology, or related field. Candidate will be expected to work cooperatively with faculty members at other locations and advise graduate students. Application deadline: 30 May 1980, or until suitable candidate is found. Submit résumé, academic transcripts, statement of research interests, reprints and copies of manuscripts submitted and/or in press, and names of three references to: **Dr. Orrin E. Smith, Chair, Department of Horticulture and Landscape Architecture, Washington State University, Pullman, Wash. 99164. Telephone: 509-335-9502. Washington State University is an Equal Opportunity/Affirmative Action Employer. We encourage women, minorities, handicapped, Vietnam era and disabled veterans, and aged candidates to apply and to identify themselves on their applications.**

ASSOCIATE TO FULL PROFESSOR IN PATHOLOGY: medical school full-time faculty to participate and coordinate in the pathology course for sophomore medical students and advanced courses for graduate students. An active research program is highly desired. Rank and salary negotiable depending on qualifications and experience. Starting 1 July 1980. Send résumé and three letters of recommendation to: **Dr. P. G. Iatridis, Assistant Dean and Director, Northwest Center for Medical Education, Indiana University School of Medicine, 3400 Broadway, Gary, Indiana 46408. Indiana University is an Equal Opportunity/Affirmative Action Employer.**

ASSOCIATE DIRECTOR—COGNITIVE PSYCHOPHYSIOLOGY LABORATORY

The Department of Psychology at the University of Illinois, Champaign-Urbana, is seeking an associate director for the Cognitive Psychophysiology Laboratory (CPL). The associate director will be appointed in the department at a rank and tenure status dependent on the individual's qualifications. Alternately, the associate director may be appointed as an "academic professional." The applicant will have the administration and scientific responsibility for ongoing programs of research that focus on the use of event-related brain potentials in the study of cognitive function and human engineering. The associate director will be encouraged to develop his or her research program. Minimum qualifications include an earned doctorate and the ability to manage an extensive computer-aided laboratory facility, supervise a staff of scientists, programmers and technicians, and direct the relations of the CPL with federal agencies. Candidates whose primary interests are in psychophysiology, experimental psychology, or engineering psychology will be preferred. In any case, the academic excellence of the candidates will be the foremost criterion. The position is available on 21 August 1980, though a later appointment is possible. The salary will depend on the individual's qualifications. For full consideration, applications must be received by 6 June 1980. Send letter of application and curriculum vitae, and arrange for three letters of reference to be sent to: **Dr. Emanuel Donchin, Professor of Psychology, Department of Psychology, University of Illinois, Champaign, Ill. 61820. Telephone inquiries to Dr. Donchin are encouraged; telephone: 217-333-3384.**

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

POSITIONS OPEN

ASSISTANT RESEARCH POSITION

Ph.D. with expertise in auditory physiology required for position as assistant research physiologist. Experiments will involve chronic extracellular single-unit recordings in the awake cat utilizing a variety of simple and complex acoustic stimuli. Experience in acoustic calibration techniques and use of PDP 11 for data reduction necessary.

Starting date: 1 July 1980. Salary: approximately \$1250 per month. Send résumé to: **Myrna Beltman, UCLA School of Medicine, Brain Research Institute, Los Angeles, Calif. 90024. An Equal Opportunity/Affirmative Action Institution.**

BIOCHEMISTRY—MICROBIOLOGY, assistant professor, recent Ph.D., to start summer 1980. Permanent position at a small, quality liberal arts college for women. Excellence in teaching and a strong commitment to research are required. Send curriculum vitae with covering letter describing research interests and names and addresses of three referees to: **Dr. Sidney L. Beck, Chair, Department of Biology, Wheaton College, Norton, Mass. 02766.**

Biology. ELECTRON MICROSCOPY—GROSS ANATOMY. Assistant professor tenure-track position is available August 1980. Responsibilities include supervision of EM laboratory and technician, offering course work in electron microscopy and neuroanatomy, and assisting in gross anatomy. The candidate would be expected to develop a research program. The Ph.D. is required. Send curriculum vitae and names of three references by 1 June 1980 to: **Dr. Harold G. Marshall, Chairman, Department of Biological Sciences, Old Dominion University, Norfolk, Va. 23508. An Affirmative Action/Equal Opportunity Employer.**

CELLULAR/MOLECULAR BIOLOGIST

Qualified individuals with postdoctoral experience are invited to apply for junior- and senior-level positions in molecular biology at the University of Southern California (USC). Research areas of particular interest include the biochemistry of cell surfaces, immunology, eukaryotic molecular biology, and genetics. The position requires the establishment of a strong research program as well as teaching at graduate and undergraduate levels. Send curriculum vitae and description of research interests to:

**Search Committee
Molecular Biology, ACBR 126
University of Southern California
Los Angeles, California 90007**

prior to 15 June 1980.

USC is an Equal Opportunity/Affirmative Action Employer.

CHAIRPERSON, DEPARTMENT OF FAMILY PRACTICE

The University of Nebraska College of Medicine is conducting an active search for a chairperson of family practice. Applications are sought from Board-certified individuals with established credentials in research and demonstrated leadership in education. Interested applicants should submit curriculum vitae to: **Office of the Dean, University of Nebraska College of Medicine, 42 Street and Dewey Avenue, Omaha, Nebraska 68105. The University of Nebraska is an Equal Opportunity/Affirmative Action Employer.**

The Hahnemann Medical College and Hospital, a University of the Health Sciences, announces its search for the **DEAN of its COLLEGE OF ALLIED HEALTH PROFESSIONS.** The college is fully accredited and offers 14 baccalaureate and associate degree programs in a modern, urban academic medical center. The successful applicant must possess an earned doctorate, proven administrative ability as director of a major academic program, and demonstrated achievement in scholarship and teaching in an academic health center.

Applicants should send curriculum vitae, list of publications, and the names, addresses, and telephone numbers of three references by 30 June 1980 to:

**Richard L. Crowell, Ph.D.
Chairman Search Committee
Department of Microbiology
Hahnemann Medical College
230 North Broad Street
Philadelphia, Pa. 19102**

An Affirmative Action/Equal Opportunity Employer

POSITIONS OPEN

UNIVERSITY OF ST. ANDREWS

Department of Anatomy and Experimental Pathology CELL/TUMOUR BIOLOGIST

A postdoctoral research scientist is required for 3 years to work with Dr. Clive Evans on an MRC-funded project concerned with the role of cell adhesion in metastasis. Starting date: as soon as possible. Starting salary at appropriate point within range £5052 to £5725 per annum (under review), plus USS.

Applications, including curriculum vitae and the names and addresses of at least two academic referees, should be sent as soon as possible to: Dr. Clive W. Evans, Department of Anatomy and Experimental Pathology, University of St. Andrews, St. Andrews, Fife, Scotland, from whom further particulars may be obtained.

CHAIRPERSON, DEPARTMENT OF INTERNAL MEDICINE

The University of Nebraska College of Medicine is conducting an active search for a chairperson of internal medicine. Applications are sought from Board-certified individuals with established credentials in research and demonstrated leadership in education. Interested applicants should submit curriculum vitae to: Office of the Dean, University of Nebraska College of Medicine, 42 Street and Dewey Avenue, Omaha, Nebraska 68105. *The University of Nebraska is an Equal Opportunity/Affirmative Action Employer.*

CHEMICAL CARCINOGENESIS. Opening for a Ph.D. organic chemist or biochemist to study metabolism, disposition, and mechanism of action of mammary gland carcinogens. A 3- to 4-year position available immediately; salary competitive. Send résumé, transcript, and names of references to: Marilyn Green, Administrative Secretary, Department of Laboratory Medicine and Pathology, University of Minnesota, Box 198 Mayo Memorial Building, Minneapolis, Minn. 55455. *Equal Opportunity/Affirmative Action Employer.*

CYTOGENETIC TECHNOLOGIST required—Science background and experience in human amniotic fluid cell and skin fibroblast cell cultures, harvesting, chromosome preparations, banding procedures, microscopic analysis of chromosomes, karyotyping, and so forth. Will also be involved in blood and bone marrow cytogenetics. Competitive salary and benefits. Send résumé to:

K. L. Ying, Ph.D., Director
Cytogenetics and Prenatal Detection Laboratory
Valley Children's Hospital
3151 North Millbrook
Fresno, Calif. 93703
Telephone: 209-225-3000, extension 1131

UNIVERSITY OF MIAMI ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE (RSMAS) 4600 Rickenbacker Causeway Miami, Florida 33149 FACULTY POSITION

The Division of Marine Geology and Geophysics is interested in candidates for a tenure-track faculty position. The successful candidate will be responsible for teaching a course on the global cycling of the elements on a geological time scale, and should be active in research on the evolution of the atmosphere or a related field. Interaction with members of the Division of Marine and Atmospheric Chemistry would also be desirable. Candidates should have at least 8 years of experience beyond the Ph.D., which should include some teaching. Rank commensurate with qualifications.

Submit résumé and names of three references to: C. G. A. Harrison, RSMAS, 4600 Rickenbacker Causeway, Miami, Florida 33149 by 1 June 1980.

An Equal Opportunity/Affirmative Action Employer. A private, independent, international university.

POSITIONS OPEN

UNIVERSITY OF NEBRASKA MEDICAL CENTER DEAN, COLLEGE OF DENTISTRY

Applications and nominations are invited for the position of dean of the College of Dentistry, the University of Nebraska Medical Center. The primary facilities of the College of Dentistry are located on the Lincoln campus of The University of Nebraska, with additional clinical facilities located on the Medical Center campus in Omaha. The college enrolls approximately 300 students in undergraduate programs in dentistry and dental hygiene, and offers graduate study in four specialty areas. The dean reports directly to the chancellor of the Medical Center.

Desired qualifications include an earned doctorate (D.D.S., D.M.D., or equivalent degree preferred), full-time faculty experience in a College of Dentistry, and prior administrative experience in a dental school or in a comparable public or private dental program. Applications accompanied by résumés should be received by 1 July 1980. Direct communications to the chairman of the Search Committee:

Dr. James V. Griesen
Vice Chancellor
The University of Nebraska Medical Center
42nd and Dewey Avenue
Omaha, Neb. 68105

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

DEVELOPMENTAL BIOLOGIST

A modern, well-equipped department which includes gene-cloning facilities seeks a Ph.D. with postdoctoral research experience. The appointment will be at the assistant professor level effective fall 1980. Applicants should have a strong background in genetics and will be expected to offer courses in embryology and genetics and participate in the master's program. Candidates must exhibit a strong interest in maintaining a vigorous research program. Send curriculum vitae, reprints, statement of professional goals, research and teaching interests, and names of three references by 1 July 1980 to: Dr. F. M. Butterworth, Department of Biological Sciences, Oakland University, Rochester, Mich. 48063. *An Equal Opportunity/Affirmative Action Employer.*

SCHOOL OF HUMAN BIOLOGY UNIVERSITY OF GUELPH

Applications are invited from scholars with M.D., Ph.D., or equivalent and a background in human life science, for the position of **DIRECTOR** of the School of Human Biology and **CHAIRMAN**, Department of Human Kinetics, in the College of Biological Science.

This is a term appointment (the normal term being 5 years) and is renewable. An appointment with immediate tenure is possible. The salary will be competitive. Position subject to final budgetary approval.

Duties are to administer an academic unit of 10 faculty and 8 administrative and technical support staff, to participate in the teaching of undergraduate and graduate courses, and to follow own research.

Teaching and research areas of the faculty include: human skeletal biology, bioengineering, ergonomics/human factors, metabolic and respiratory aspects of energetics, behaviour modification and hyperkinesis, and human variability and phylogeny.

Two undergraduate streams in human biology are administered by the school: one a general honours programme in human biology, and the other an honours programme with human movement as a focus. There is a well-equipped research facility with a new and expanding graduate programme leading to a master's degree in the field.

Applications, which will continue to be considered until the post is filled, hopefully by 1 January 1981, should include curriculum vitae and the names of three referees and should be addressed to: Professor Keith Ronald, Dean, College of Biological Science, University of Guelph, Guelph, Ontario, Canada N1G 2W1. Telephone: 519-824-4120, extension 3342.

Northern California College of Chiropractic, a rapidly expanding institution in the San Francisco Bay Area, seeks full-time and part-time **FACULTY** for summer and fall quarters 1980. Applicants must hold a Ph.D. or an M.S. degree. Openings are in departments of Anatomy, Physiology, Chemistry and Nutrition, and Pathology. Send résumé and two letters of recommendation to: Beth Battle, Northern California College of Chiropractic, 1095 Dunford Way, Sunnyvale, Calif. 94087. *Equal Opportunity Employer, M/F.*

POSITIONS OPEN

DEPARTMENT OF DERMATOLOGY at Mount Sinai School of Medicine seeks a Ph.D. with background in collagen chemistry to join ongoing project on mechanism of fibrosis. There will be ample opportunities for independent research. Candidates interested should write to: Raul Fleischmajer, M.D., Chairman, Department of Dermatology, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, N.Y. 10029. *An Equal Opportunity Employer.*

ENVIRONMENTAL CHEMIST—New England College invites applications for a position in analytical, environmental, or biogeochemical areas starting September 1980 at the assistant professor level. Primary responsibilities include teaching introductory and general chemistry, analytical chemistry, and additional support courses, in area of specialty, appropriate for majors in civil engineering biology, geology, and environmental science. Ph.D. required. Send curriculum vitae and three letters of reference to: Office of Academic Affairs, New England College, Henniker, N.H. 03242. *An Equal Opportunity Employer.*

FACULTY POSITION—A full-time tenure-track position is open in the Science Division at Governors State University. Ph.D. in chemistry (preferably organic, analytical, or geochemistry) with a strong background in gas chromatography/mass spectroscopy and chemical analysis of soils/sediments is required. Two years of teaching and research experience desirable. Superior performance in teaching and research are required for tenure. The work load includes graduate (master's) and undergraduate courses in chromatographic techniques, chemical analysis of soils, and gas chromatography/mass spectroscopy and supervision of student research projects. Laboratory space, gas chromatographs, HPLC, and a GC/MS are available.

Starting date is 1 September 1980. Salary: \$20,000 and up for 12-month appointment. Send résumé (three copies) to:

Dr. Clara B. Anthony, Acting Dean
College of Arts and Sciences
Governors State University
Park Forest South, Illinois 60466

Applications must be received by 30 June 1980.

Governors State University, an upper-division commuter institution located approximately 30 miles south of the Chicago Loop, is an Affirmative Action/Equal Opportunity Employer. Applications are encouraged from women and minorities.

FACULTY POSITIONS IN APPLIED PLASMA PHYSICS

Two faculty positions (assistant or associate professor) are available beginning September 1980 in the Department of Nuclear Engineering at Massachusetts Institute of Technology (MIT). Areas of interest include experimental plasma physics, experimental systems design, plasma diagnostics and plasma physics relevant to fusion systems development—divertors, rf heating, and so forth. These positions will involve teaching, thesis supervision, and independent research. Interest and experience in classroom teaching and research supervision is highly desirable. Research will be carried out in the MIT Plasma Fusion Center and successful applicants will be affiliated with the Plasma Fusion Center. Involvement with the ALCATOR experimental program is offered but participation in other existing or new programs is possible. Initial appointments will not carry tenure, but applicants will be eligible for future academic or research staff tenure considerations. Write to:

Professor Norman C. Rasmussen
Massachusetts Institute of Technology
24-102

Cambridge, Massachusetts 02139

MIT is an Equal Opportunity Employer.

IGNEOUS PETROLOGIST—Associate professor for 12-month, tenure-track position. Successful candidate will be expected to develop a strong research program which emphasizes the application of latest experimental and geochemical methods to petrological problems, particularly those related to the formation of oceanic crust and/or volcanic arcs. Salary: \$22,000 to \$35,000 will be commensurate with experience. Send résumé and names of three references by 1 August 1980 to: G. Ross Heath, Dean, School of Oceanography, Oregon State University, Corvallis, Oregon 97331. *Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.*

POSITIONS OPEN

FACULTY POSITION IN ANATOMY

Histology/reproductive biologist sought for position in the Department of Anatomy with primary teaching commitment in histology and with a joint appointment in the Division of Reproductive Biology of Obstetrics and Gynecology. Demonstrated commitment and excellence in research and teaching with special interest in reproductive biology relative to follicular and oocyte involvement in concert with a newly established Human In vitro Fertilization Clinic. Two or more years of experience after the doctoral degree is necessary. Send complete curriculum vitae, including a statement of research interest and names of at least three references, to: **Dr. Robert H. Brownson, Chairman, Department of Anatomy, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, Virginia 23501.**

Affirmative Action/Equal Opportunity Employer

SEARCH REOPENED

FACULTY POSITION— BIOPHARMACEUTICS—PHARMACOKINETICS UNIVERSITY OF CINCINNATI COLLEGE OF PHARMACY

Rank of assistant professor for a full-time, tenurable, academic year appointment. Teaching responsibilities at the undergraduate and graduate levels. Development of active research program expected. Appointment requires a Ph.D. in biopharmaceutics-pharmacokinetics; applicant should possess a B.S. from an accredited college of pharmacy. Salary commensurate with experience. Submit letter of application, curriculum vitae, and three references to: **Dr. A. C. Glasser, Dean, College of Pharmacy, University of Cincinnati Medical Center, Health Professions Building, Location Number 4, Cincinnati, Ohio 45267.**

The University of Cincinnati is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minority groups.

FACULTY POSITION/OBSTETRICIAN—Johns Hopkins University, School of Hygiene and Public Health. Prefer focus on factors determining pregnancy outcome, fetal growth, and newborn health. Requires advanced preparation in obstetrics, public health methods, and demonstrated competence in research. Send curriculum vitae to: **Chairman, Department of Maternal and Child Health, 615 North Wolfe Street, Baltimore, Md. 21205.** *An Equal Opportunity/Affirmative Action Employer.*

IMMUNOCYTOCHEMIST

Postdoctoral fellowship (NIH) available as of 1 July 1980, to participate in immunocytochemical/neuroanatomical/neurophysiological studies of chemoreception. A good background in biochemistry with experience in peptide immunochemistry and immunofluorescence microscopy are necessary. Send curriculum vitae to:

**Dr. Larry J. Stensass
Department of Physiology
University of Utah College of Medicine
410 Chipeta Way, Research Park
Salt Lake City, Utah 84108**

The University of Utah is an Equal Opportunity/Affirmative Action Employer. Deadline for applications is 1 June 1980.

Permanent, tenure-track position is open for **IN-VERTEBRATE ZOOLOGIST** with strong background in physiology. Applicants should hold Ph.D. or equivalent and have teaching experience at college faculty level. Duties of position include teaching general biology, general zoology, entomology, invertebrate zoology, general physiology, and freshman/sophomore seminar. Deadline for application is 6 June 1980. Send curriculum vitae and three letters of reference to: **Dr. Preston Somers, Biology Department, Fort Lewis College, Durango, Colo. 81301.** *An Equal Opportunity/Affirmative Action Employer*

OCEAN/COASTAL MODELER. A position is available in the Department of Ocean Engineering at the University of Rhode Island to work on sponsored research in numerical modelling of ocean and coastal circulation and pollutant transport. Candidates should have a Ph.D. in ocean engineering or related field or an M.S. degree with demonstrated experience in numerical modeling. Submit résumé and reprints by 10 June 1980 to: **Malcolm Spaulding, Ocean Engineering, UNIVERSITY OF RHODE ISLAND, Kingston, Rhode Island 02881.** *An Affirmative Action/Equal Opportunity Employer, M/F.*

POSITIONS OPEN

TEMPLE UNIVERSITY GRADUATE DEAN

Applications are invited for the position of graduate dean. Responsibilities include providing active leadership in the administration of the Graduate School and in the support and expansion of research and creative endeavors. A suitable candidate must have: earned the highest academic degree in his/her field; experience in graduate education; exerted a demonstrable scholarly and professional influence; demonstrated a commitment to research and creative activity in all areas of the university as well as in particular fields of specialization; demonstrated the capacity to be an imaginative and impartial administrator; and the experience and ability to provide leadership for the faculty and programs of the university. The position is available on or before 1 September 1980.

Temple University, a state-related university, is located in Philadelphia, Pennsylvania.

The Graduate School of Temple University offers advanced degrees in 80 fields, from 13 different schools and colleges. There are 1200 graduate faculty engaged in research and training with some 6000 students.

Applicants should send curriculum vitae with names of four references before 1 June 1980 to:

**Professor William Yancey
Chairperson of Search Committee
Office of the Vice President and Dean of Faculties
Temple University
Philadelphia, Pa. 19122**

Temple University is an Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

Position available for **HEAD** of Section of Neurosurgery. Candidate should have demonstrated experience and national reputation as excellent clinician, teacher, and investigator. Experience with a senior responsible position in a division of neurosurgery at a major medical center. Should be qualified for faculty appointment at professor level. Reply to: **Box 127, SCIENCE.** *A nondiscriminatory, Affirmative Action Employer.*

HISTOLOGIST—PHYSIOLOGIST

A tenure-track position at the assistant or associate professor rank (salary range: \$17,280 to \$21,420, depending on qualifications and experience) is open for August 1980. Qualifications include: earned Ph.D. capable of teaching histology, cell biology, and mammalian physiology; and ability to provide instruction, supervision, and routine maintenance in transmission electron microscopy. The successful candidate will be expected to maintain an active research program and to participate in the graduate program leading to the M.S. in biology. Applicants should submit curriculum vitae, copies of representative publications, and three letters of reference to: **Dr. Virginia Foltz, Chairman Search Committee, Department of Biology, Pan American University, Edinburg, Texas 78539** by 30 May 1980.

Pan American University is an Affirmative Action/Equal Opportunity Employer.

NEUROPSYCHOPHARMACOLOGY RESEARCH ASSOCIATE. Recent Ph.D. or M.D. to collaborate in preclinical/clinical research investigating neurotransmitter and receptor mechanisms in depression, schizophrenia, motor disorders, hypertension, and dementia. Position available 1 July 1980, salary and duration negotiable. Send curriculum vitae and three reference letters to: **Chair, Department of Pharmacology, UNIVERSITY OF RHODE ISLAND, Kingston, Rhode Island 02881.** *An Affirmative Action/Equal Opportunity Employer, M/F.*

NUTRITION

Applications are invited for a faculty position in nutrition (rank and salary negotiable, subject to qualifications and experience). An individual is sought who has strong training in the experimental and biochemical aspects of nutrition and interest in the application of this training to problems in human nutrition. The position involves teaching of the metabolic aspects of nutrition at the undergraduate and graduate levels and development of an active research program in biochemical nutrition. Curriculum vitae and names of three referees should be sent to: **Dr. B. L. Walker, Chairman, Search Committee, Department of Nutrition, University of Guelph, Guelph, Ontario, Canada N1G 2W1.** Subject to final budgetary approval.

POSITIONS OPEN

IMMUNOLOGY—FACULTY

One junior faculty position is available in immunology (immunogenetics or immunochemistry) with particular emphasis in oncologic or gerontologic problems. Major activities would be in research, but the recruit is expected to participate in the instruction of medical, graduate, and undergraduate students. Excellent facilities and equipment available in expanding immunology research group affiliated with recently established Cancer and Aging Centers. Position to begin 1 September 1980. Candidates having completed at least 2 years of postdoctoral training should submit curriculum vitae and at least three references before 15 June 1980 to: **Dr. D. M. Goldenberg, Division of Experimental Pathology, University of Kentucky Medical Center, Lexington, Ky. 40536.**

IMMUNOLOGIST/MICROBIOLOGIST

Applications are invited for a tenure-track position at the assistant professor level effective 1 August 1980 in the Department of Microbiology, Southern Illinois University, Carbondale. Primary teaching responsibility will include the delivery of an introductory course in immunology to advanced undergraduates and beginning graduate students. The individual will be expected to develop an active research program. The area of research could be in immunology or in any area of microbiology. Candidates should have a Ph.D. and appropriate postdoctoral experience. Applicants should send curriculum vitae, statement of research experience and goals, and three letters of recommendation to: **Chairman, Microbiology Search Committee, Department of Microbiology, Southern Illinois University, Carbondale, Ill. 62901.**

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

MASS SPECTROSCOPIST

The Food and Science and Human Nutrition Department of the University of Florida invites applications for its position now open, assistant in mass spectroscopy. Primary responsibility is to manage, maintain and operate a state-of-the-art Finnigan 4021 GC/LC/MS/DS, capable of simultaneous positive ion-negative ion chemical ionization operation as well as electron impact. The successful applicant will collaborate and interact with scientists within the Institute of Food and Agricultural Sciences in solving varied problems concerning molecular characterization of contaminants, pollutants, and naturally occurring organic compounds in a variety of substrates. Assistance given in the form of consultations for sample preparation and spectral interpretation is required. A minimum of an M.S. degree in chemistry or related field is required with experience in operating a modern mass spectrometer and dedicated data system; training and experience in gas and high performance liquid chromatographic techniques is highly desirable. Ability to plan and organize equipment usage, data acquisition and storage, as well as individual research projects is a prerequisite; ability to effectively communicate and cooperate with faculty, staff and students is an essential requirement. Salary is commensurate with qualifications and experience. This is a position at the Pesticide Research Laboratory of the Food Science and Human Nutrition Department. *The University of Florida is an Equal Opportunity Employer and invites applications from all qualified candidates.* Applications should include curriculum vitae, a statement of career goals, transcripts, and names of three persons from whom letters of recommendation may be obtained if desired. Return to: **Dr. H. A. Moye, Chairperson, Search and Screening Committee, Pesticide Research Laboratory, University of Florida, Gainesville, Fla. 32611; telephone: 904-392-1978.**

PHYSIOLOGIST—POULTRY SCIENCE

Position available 1 July 1980 for avian physiologist. Ph.D. in physiology with a strong background in biology, physiology, and endocrinology. Interest in teaching undergraduate and graduate-level courses. Should have interest in developing a creative and productive research program in environmental or reproductive physiology. Rank open; salary commensurate with qualifications and experience.

Send curriculum vitae, transcripts, publication list, and three letters of reference by 30 May 1980 to: **Dr. M. G. McCartney, Head, Department of Poultry Science, University of Georgia, Athens, Georgia 30602.**

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

POSITIONS OPEN

MEDICAL PHYSICIST— RADIATION ONCOLOGY

The Department of Radiation Oncology, Rhode Island Hospital, has an immediate opening for a medical physicist. This position will include a faculty appointment at Brown University at the level of assistant professor.

The successful applicant will be responsible for the administration of a quality assurance program, and will be expected to become involved in all aspects of the radiotherapy physics activities. Specifically, this will include teaching in the radiotherapy technology school, consulting with other members of the staff concerning patient treatments, making appropriate measurements on the treatment machines, and supervising the work of an assistant physicist who is directly responsible for treatment planning. In addition, the candidate will be expected to become involved in various teaching activities at Brown University, including the supervision of students engaged in research in the department.

The treatment facilities at Rhode Island Hospital include 18MeV, 6 MeV and 4 MeV linear accelerators, a simulator, a transverse axial tomographic unit, a PDP-11/45 and two PDP-11/10 computers, and access to a CT scanner.

Applicants should have a Ph.D. in physics or a related field, with at least one year of full-time experience in radiation therapy physics. Send résumé by 2 June to:

Tom Powell
Employment Representative
Rhode Island Hospital
593 Eddy Street
Providence, R.I. 02902

Rhode Island Hospital and Brown University are Equal Opportunity/Affirmative Action Employers.

MEMBRANE BIOCHEMIST at assistant professor level, experience in amino acid sequencing of membrane molecules. Knowledge of the immunogenetics of the major histocompatibility complex, especially in man, required. Send résumé to: **Fritz Bach, M.D.**, Box 198 Mayo Memorial Building, Department of Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, Minn. 55455. *Equal Opportunity/Affirmative Action Employer.*

MICROBIOLOGIST AND PATHOLOGIST. Two positions are available: (i) **Medical microbiologist/immunologist.** This research-teaching postdoctoral position is available starting 1 September 1980 for a period of 2 years with possible extension to 5 years. Doctorate required. Ample opportunity exists to conduct independent research and to participate in cooperative research programs in the fields of immunobiology and medical microbiology. Undergraduate and graduate teaching in these areas will be expected. (ii) **Pathologist.** Ph.D., M.D., and/or D.V.M. Background and ability to teach basic pathology to first year medical students. General background in medical microbiology desirable. This position is available 1 January 1981 for a 6-month period. The salary for both positions is negotiable. Please send curriculum vitae and three letters of recommendation to: **Dr. Norman D. Reed, Department of Microbiology, Montana State University, Bozeman, Montana 59717.** The closing date for applications is 1 July 1980. *Equal Opportunity/Affirmative Action Employer.*

MOLECULAR VIROLOGIST. Ph.D. in molecular virology. Experience in methods of characterization of proteins and nucleic acids is required. Knowledge of viral genetics is desirable. Postdoctoral research position with academic department interested in the pathogenesis of disease. Reply to: **Dr. H. F. Maassab, Department of Epidemiology, School of Public Health, The University of Michigan, Ann Arbor, Michigan 48109.** *The University is a non-discriminatory, Affirmative Action Employer.*

POSTDOCTORAL FELLOW

A position is available for a person to work on gene regulation with emphases on studies with purified mammalian RNA polymerases. Experience in enzyme purification nucleic-acid hybridization and recombinant DNA technology desirable. The position is available immediately. Send résumé and names of three references to:

Dr. John J. Furth
Department of Pathology
University of Pennsylvania
School of Medicine
Philadelphia, Pennsylvania 19104

POSITIONS OPEN

OBSTETRICS—GYNECOLOGY FACULTY POSITIONS

Openings are available for full-time faculty in obstetrics and gynecology who have Board-certification or eligibility, and are licensable in Ohio.

Primary duties will consist of teaching and patient care. There is a large clinical service and a well-established residency program. Rank and salary dependent upon qualifications.

An opening is also available for a full-time position in maternal-fetal medicine. The candidate must have satisfactorily completed an approved fellowship in maternal-fetal medicine and demonstrated an interest in research, teaching, and service.

Please send curriculum vitae to:

Nicholas J. Thompson, M.D.
Professor and Chairman
Department of Obstetrics and Gynecology
Wright State University School of Medicine
1 Wyoming Street
Dayton, Ohio 45409

The Wright State University School of Medicine is an Affirmative Action/Equal Opportunity Employer.

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

The DEPARTMENT OF OBSTETRICS AND GYNECOLOGY is undergoing a major rebuilding program and is seeking applicants who have an M.D. degree, postdoctoral training, and Board-qualification or certification in maternal/fetal medicine, gynecologic oncology, and endocrinology. Positions at any academic level (instructor thru professor) will be considered. Send curriculum vitae, brief summary of present and future research, and names and addresses of three references to: **Alan E. Beer, M.D., Professor and Chairman, Department of Obstetrics and Gynecology, Women's Hospital, University of Michigan Medical School, Ann Arbor, Michigan 48109.** *A non-discriminatory, Affirmative Action Employer. Code 700DO.*

POSTDOCTORAL ASSOCIATE POSITIONS UNIVERSITY OF IOWA

Please contact the appropriate department to express your specific interest:

ANATOMY—Dr. Terence H. Williams, Basic Sciences Building. Multidisciplinary research emphasizing the following biological systems: nervous, reproductive and cardiovascular. Projects include neuroplasticity, fertilization, prostrate histopathology, monoamines.

BIOCHEMISTRY—Dr. Edward C. Heath, Basic Sciences Building.

INTERNAL MEDICINE—Francois M. Abboud, M.D., professor and head, or Darris Goerdt, telephone: 319-356-2850. Administrator—openings available in all disciplines in internal medicine.

MICROBIOLOGY—Dr. Irving P. Crawford, professor and head, Basic Sciences Building. Research in microbial genetics and physiology, as well as mammalian virology.

PEDIATRICS—William V. Aldershof, General Hospital. Research in all subspecialty areas of pediatrics.

PHYSIOLOGY AND BIOPHYSICS—Dr. Robert E. Fellows, professor and head, Basic Sciences Building. Research in membrane physiology and biophysics, endocrinology, neurophysiology, and mammalian cell biology.

The College of Medicine, University of Iowa, Iowa City, Iowa 52242, is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOW in mitochondrial DNA and senescence in *Podospora anserina*. Available now for 2 to 3 years. Background in biochemistry and DNA/RNA technology important. Salary: \$12,000 to \$14,500, dependent on experience. Send résumé and recommendations to: **Donald J. Cummings, University of Colorado Health Sciences Center, Box B175, Denver, Colo. 80262.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION IN ENZYMOLOGY Research associate needed on 1 July for study of enzymes in the dopamine system, part of a large research program on the biochemistry of mental disorders. Experience in enzymology, HPLC, and/or antibody production desirable. Salary competitive. Send résumé to: **Dr. Creed W. Abell, Professor and Director of Biochemistry, The University of Texas Medical Branch, Galveston, Texas 77550.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL ASSOCIATE

A 1- to 2-year position is available for a recent Ph.D. for studies of molecular biology and/or genetics of tRNA biosynthesis in yeast. Position available about 1 September 1980. Salary: \$12,500.

Send curriculum vitae and letters of recommendation to: **Dr. Anita Hopper, Department of Biological Chemistry, The Milton S. Hershey Medical Center, The Pennsylvania State University, Hershey, Pa. 17033.**

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POSTDOCTORAL FELLOW to assist in the Scientific Committee on Problems of the Environment in studies of the effects of climate change. The fellow would initially work in Boulder, Colorado, with a longer period of time elsewhere under a SCOPE senior scientist. Nonrenewable appointments will be made for 6, 12, or 18 months to begin spring 1980 and must expire by 30 June 1982. Applicants must be U.S. citizens and hold a Ph.D. related to methods for estimating the effects of climate change on biological, physical, and social systems. Further information and application forms may be obtained from: **Gilbert F. White, IBS Number 6, University of Colorado, Boulder, Colo. 80309.** Applications must be submitted by 31 May 1980. *The University of Colorado is an Equal Opportunity/Affirmative Action Employer.*

Oregon State University **POSTDOCTORAL POSITIONS** available 1 June 1980 to study luminescence of DNA and related compounds. Experience in luminescence spectroscopy of biological materials is desirable. Salary is \$15,000 for 12 months. Deadline for applications is 30 May 1980. Later graduates may be considered. Send curriculum vitae and names of three references to: **Dr. Malcolm Daniels, Chemistry Department, Oregon State University, Corvallis, Oregon 97331.** *Oregon State University is an Equal Opportunity/Affirmative Action Employer and complies with Section 504 of the Rehabilitation Act of 1973.*

POSTDOCTORAL POSITIONS (TWO)

Available 1 July 1980 for 2 to 3 years to study biochemical genetics of human disease using cultured cells in ongoing projects in cystic fibrosis and DNA repair disorders. Contact: **Dr. M. Buchwald, Department of Genetics, The Hospital for Sick Children, 555 University Avenue, Toronto, Ontario, Canada M5G 1X8.**

POSTDOCTORAL POSITION available 1 July 1980 for work on problems of electrical excitation in internally perfused voltage-clamped giant axons. Renewable. Experience in membrane biophysics desirable but not essential. Candidates with Ph.D. in physical sciences will be considered. Send curriculum vitae and names of three references to: **Dr. L. Goldman, Department of Physiology, School of Medicine, University of Maryland, Baltimore, Maryland 21201.**

POSTDOCTORAL POSITIONS (two) now available to study cellular electrophysiological and ion transport properties of cultured heart cells. Send curriculum vitae and names of references to: **Dr. Melvyn Lieberman, Department of Physiology, Box 3709, Duke University Medical Center, Durham, N.C. 27710.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION. Available immediately in the area of glycoprotein biosynthesis in cultured mammalian cells. Experience with carbohydrates or membranes and background in biochemistry preferred. Salary: \$13,000 to \$15,000. Please send curriculum vitae and names of references to: **Dr. S. J. Turco, Department of Biochemistry, University of Kentucky Medical Center, Lexington, Ky. 40536**

An Equal Opportunity Employer

POSTDOCTORAL POSITION available. Must have Ph.D., M.D., or D.V.M. in hand. Available 1 July 1980. Organ System Toxicology with emphasis on the kidney. Experience in drug metabolism and pharmacokinetics desirable. Salary commensurate with qualifications and experience. Send curriculum vitae and three letters of recommendation to:

Dr. Jerry B. Hook, Director
Center for Environmental Toxicology
Michigan State University
East Lansing, Mich. 48824

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HEAD, ENVIRONMENTAL MARINE GEOLOGY 330-078-006

Salary: \$34,590 - \$43,530

Ref. No.: 80-SM-OC-EMR-KH-1212

Energy, Mines and Resources Canada
Geological Survey of Canada
Atlantic Geoscience Centre
Bedford Institute of Oceanography
Dartmouth, Nova Scotia,
Canada

Duties:

The incumbent manages the scientific research program of the Environmental Marine Geology subdivision of the Atlantic Geoscience Centre. This subdivision is concerned with modern marine geological processes i.e. geological and geophysical work on the coastlines, at sea and in the laboratory. The incumbent has the responsibility for a staff of approximately 25 specialists in organic and inorganic geochemistry, sedimentology, coastal geomorphology, paleontology, and paleoecology and for an annual budget of approximately \$1,000,000. He/She must ensure that a high degree of interaction and co-operation occurs with national and international government organizations, private industry and universities. Present programs of the subdivision include studies of: the Canadian coastal regimes; of sediment budgets in the Bay of Fundy; of sediment dynamics on the shelf; of the effects of ice-berg scour; of bioturbation on the slope; and of fluxes of elements in deep-sea sediments.

Qualifications:

University graduation at the Doctoral level in Geology, Geophysics, Geochemistry, Physical Oceanography or a comparable field relevant to the position OR an equivalency. Significant experience in research in Geology or Physical, Chemical or Biological Oceanography, applied to modern marine sedimentary systems. Experience in supervision of scientific and technical staff and management of scientific research programs. Evidence of a good scientific reputation.

Language requirements:

Knowledge of English is essential.

"Additional job information is available by writing to the address below or by telephoning M.J. Keen at (902) 426-2367;

Toute information relative à ce concours est disponible en français et peut être obtenue en écrivant à l'adresse suivant ou en téléphonant à M.J. Keen (902) 426-2367".

How to apply:

Send your application form and/or résumé to:

Kathy Hiland (Mrs.)
Senior Management Staffing Program
Public Service Commission of Canada,
L'Esplanade Laurier
17th Floor, 300 Laurier Avenue, West,
Ottawa, Ontario. K1A 0M7
Closing date: June 15, 1980.

Please quote the applicable reference number at all times.

POSITIONS OPEN

POSTDOCTORAL POSITION THEORETICAL ATOMIC PHYSICS

A postdoctoral position is available in theoretical atomic physics. Area of interest includes: (i) the development of new hyperspherical coordinate methods for studies in atomic structure and in electron-atom collisions; and (ii) the study of ionization and charge transfer in heavy-ion collisions.

This position is for 1 year with subsequent renewal for a second year subject to the availability of funds and to mutual agreement. The stipend will be \$14,500 to \$15,500 per annum, depending on experience. Application, including a résumé and the names of three references, should be received by: **Dr. C. D. Lin, Department of Physics, Kansas State University, Manhattan, Kansas 66506** by 30 May 1980.

Kansas State University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION FOR BASIC RESEARCH AVAILABLE 1 JULY 1980

Research in metabolism of vascular smooth muscle of normal, hypertensive, and atherosclerotic animals using incubated tissue and cell culture techniques. Ph.D. in biochemistry, physiology, or related area preferred. Send curriculum vitae and three letters of reference to: **Dr. Richard Odessey, Department of Physiology, University of Virginia Medical School, Charlottesville, Virginia 22908.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS available immediately for M.D.'s and Ph.D.'s in the NIH-supported **DIABETES RESEARCH TRAINING PROGRAM** at the University of Texas, Houston. There are opportunities for research in the fields of molecular biology, physiology, biochemistry, pharmacology, cell biology, and epidemiology. Faculty is drawn from the Medical School, Graduate School of Biomedical Sciences, School of Public Health, and the University of Texas Cancer Center. Research training is coupled with a joint University of Texas-Baylor educational program which acquaints trainees with the clinical problems of diabetes and provides an overview of the current state of diabetes research. Salary according to NIH stipend scale. For more information, call or write with curriculum vitae to: **Dr. Victor Lavis, Program Director, Department of Medicine, University of Texas Medical School, P.O. Box 27008, Houston, Texas 77025; telephone: 713-792-5508.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS available in biochemistry and immunology. Study of carbohydrate and metal ion interactions with lectins using NMR spectroscopy. Investigation of hapten-antibody interactions using NMR techniques and immunochemical methods, including cell fusion studies to produce monoclonal antibodies. Send curriculum vitae to: **Dr. C. F. Brewer, Department of Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, N.Y. 10461.**

POSTDOCTORAL POSITION—CELL BIOLOGY. Available 1 July 1980 for in vitro studies of leukocyte migration across epithelium. Experience in cellular immunology, cell biology, or tissue culture desirable. Send curriculum vitae to: **Eva B. Cramer, Ph.D., Department of Anatomy and Cell Biology, State University of New York, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, N.Y. 11203.** *Equal Opportunity/Affirmative Action Employer.*

POSTGRADUATE RESEARCH GENETICIST position is currently available in the Department of Pomology, University of California, Davis. A Ph.D. is required in plant genetics. Applicants should have a strong background in strawberry genetics as it applies to evolutionary relationships, population dynamics, and breeding. A working familiarity with DNA biochemistry is essential. Duties will include the characterization of the genome organization in the *Fragaria* spp. complex, isozyme fingerprinting, field experimentation, and data analysis. Salary commensurate with experience. Applicants should send their résumé along with two letters of recommendation to: **Dr. Royce S. Bringham, Department of Pomology, 1039 Wickson Hall, University of California, Davis, Calif. 95616.** Final filing date is 31 May 1980.

The University of California is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.

POSITIONS OPEN

POSTDOCTORAL POSITION IN DEVELOPMENTAL NEUROBIOLOGY

Position available for Ph.D. or M.D. with outstanding qualifications in the neurosciences or cell biology to study roles played by neurotransmitters and hormones in neuronal differentiation. Position is available immediately at a starting salary of \$13,380. Send curriculum vitae and three letters of recommendation to:

Dr. Jean M. Lauder
Laboratory of Developmental Neurobiology
Department of Anatomy
111 Swing Building 217H
University of North Carolina
School of Medicine
Chapel Hill, North Carolina 27514

The University of North Carolina is an Equal Opportunity Employer.

POSTDOCTORAL RESEARCH ASSOCIATE in biochemistry and physicochemical characterization of biological secretions. Chemical engineering, bioengineering, or physical chemistry background preferred. Beginning immediately. Send résumé and two references to:

Professor Mitchell Litt
Department of Bioengineering
University of Pennsylvania
220 South 33 Street, Towne Building 285
Philadelphia, Pa. 19104

POSTDOCTORAL RESEARCH ASSOCIATE

Position is available immediately for chemist, biochemist, or medicinal chemist with experience in synthesis, chromatography, and tracer study to participate in NIH-supported research on metabolism and anti-inflammatory activity of new steroids. Send curriculum vitae and names of references to: **Dr. H. J. Lee, School of Pharmacy, Florida A and M University, Tallahassee, Fla. 32307; telephone: 904-599-3301.**

POSTGRADUATE POSITION

Ph.D. with expertise in vocalization analysis and evoked potential recording in human subjects, cats, and kittens required for position as postgraduate research neuroscientist. Ability to use PDP-11 for vocalization spectrograms and evoked potential averaging required. Experience in recording from and maintaining normal and lesioned kittens essential.

Position available 1 Sept 1980, at a monthly rate of approximately \$1133. Send résumé to: **M. Beltman, UCLA School of Medicine, Brain Research Institute, Los Angeles, Calif. 90024.** *An Equal Opportunity Employer/Affirmative Action Institution.*

QUANTITATIVE ECOLOGY/INSECT POPULATION DYNAMICS. Faculty, tenure-track. Incumbent to develop program to complement pest management programs on agricultural pest problems. Opportunity to teach. Salary and rank commensurate with education and experience. Application deadline: 1 June 1980 or until suitable candidate is found. Submit résumé and three letters of recommendation to: **Dr. Eldon E. Ortman, Head, Department of Entomology, Purdue University, West Lafayette, Ind. 47907.** Telephone: 317-493-9185. *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH AGRONOMIST. Career Federal Service. Plans and conducts a comprehensive weed-control research program in field and horticultural crops in Alaska. Incumbent conducts research to develop a better understanding of the biology, life cycles, and ecology of the most important weeds; develops improved integrated weed management systems; and develops an understanding of the behavior, fate, and effects of herbicides in soils. Location: Palmer, Alaska; GS-11/12-level position. Salary range: \$20,611 to \$24,703, plus 20 percent cost of living allowance. *Equal Opportunity Employer.* Contact: **Barbara Lamm, USDA-SEA/AR-NCR-8, 2000 West Pioneer Parkway, Peoria, Ill. 61615.** Telephone: 309-671-7319.

RESEARCH SPECIALIST for collaborative research in the circulatory system. M.S. in physical or biological science or equivalent work experience with supervisory responsibilities. Train others in laboratory in research techniques; develop and modify research protocols; analyze experimental data and prepare initial drafts of manuscripts for publications; plan experiments for laboratory. Apply to: **Paul C. Johnson, Ph.D., Professor and Head, Department of Physiology, College of Medicine, University of Arizona, Tucson, Ariz. 85724.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

RESEARCH ASSOCIATE position open 1 September 1980, to study the neuropharmacological basis of rewarding properties of abused drugs; \$12,000 to \$15,000 per year. Background in biochemical, histological, and behavioral methods essential. Send curriculum vitae and names of three references to: **Dr. S. A. Lorens, Building 135, Neuropharmacology, Loyola University Medical Center, 2160 South First Avenue, Maywood, Ill. 60153.**

RESEARCH ASSOCIATE—AGRONOMY. Available 1 June 1980. Temporary, 2-year assistant rank position to conduct research on the foliar application of phosphate to cereals. Requires basic knowledge of plant physiology and biochemistry, with experience in cell isolation and fractionation and in measurement of photosynthesis and respiration. Salary: \$14,000 per year. Send résumé, transcripts, and names and addresses of three persons who have been asked to submit letters of reference by 1 June 1980 to: **Dr. J. C. Engibous, Chairman, Department of Agronomy and Soils, Washington State University, Pullman, Wash. 99164.** *An Equal Opportunity/Affirmative Action Employer. Women, minorities, and handicapped persons are encouraged to apply and identify themselves as such in their applications.*

RESEARCH FELLOW

Cell and Molecular Biology Department. Professional degree, M.D., Ph.D., or D.D.S., 1 to 3 years of experience in animal virology and immunology and cell culture procedures. Knowledge and experience in the use of anesthetics, chemotherapy helpful. Research experience involving human herpesvirus infections in man or animal models desirable. Salary: \$14,000 per year. Must supply three letters of recommendation. Contact: **Georgia State Employment Service, Ninth Street, Augusta, Ga. 30901.** *Equal Opportunity Employer.*

SENIOR FACULTY POSITION IN VIRAL ONCOLOGY

Applications are invited for a tenure-track position at the associate professor level at the University of Pennsylvania School of Veterinary Medicine. The position is to conduct research primarily on the bovine leukemia virus system. The appointee will be expected to develop an active and independent research program in coordination with the ongoing studies in the Leukemia Unit. Candidates should have a strong background and experience both in the molecular and biological aspects of mammalian viruses, preferably tumor viruses. They should also have demonstrable ability to obtain research funding. Minimum qualifications are a Ph.D., D.V.M., or M.D. Salary is open and will depend on qualifications and experience. The position is available immediately. Applicants should submit curriculum vitae, copies of representative publications, and the names of three referees to:

Dr. Jorge F. Ferrer
Chief, Comparative Leukemia Studies Unit
University of Pennsylvania
School of Veterinary Medicine
New Bolton Center
382 West Street Road
Kennett Square, Pa. 19348

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

SENIOR FACULTY POSITION IN TUMOR IMMUNOLOGY

Applications are invited for a tenure-track position at the associate professor level at the University of Pennsylvania, School of Veterinary Medicine, to conduct research on the virus-host and tumor-host immunological interactions in the bovine leukemia system. Priority will be given to those with experience in viral immunology. Candidate should have demonstrable ability to obtain research funding. Salary will depend on qualifications and experience. Minimum qualifications are a Ph.D., D.V.M., or M.D. The position is available immediately. Applicants should submit curriculum vitae, copies of representative publications, and the names of three referees to:

Dr. Jorge F. Ferrer
Chief, Comparative Leukemia Studies Unit
University of Pennsylvania
School of Veterinary Medicine
New Bolton Center
382 West Street Road
Kennett Square, Pa. 19348

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FMC FMC FMC PRODUCT SPECIALIST

New position required for rapid growth product line. Responsibilities include: preparation of promotional and technical product literature; organizing and leading seminars/workshops with actual or potential customers; working with targeted accounts and key people in the field. B.S./M.S. in biochemistry or natural science with research and/or sales experience required along with sound knowledge of natural hydrocolloids, P.A.A., electrophoresis, and IEF. Salary up to mid twenties to start.

Send resumes to:

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FOOD AND DRUG ADMINISTRATION (FDA) PUBLIC HEALTH SERVICE DEPARTMENT OF HEALTH, EDUCATION AND WELFARE DEPUTY COMMISSIONER OF FOOD AND DRUGS \$47,889 to \$50,112.50 per annum

Applications are invited for the position of Deputy Commissioner of Food and Drugs, Food and Drug Administration, Rockville, Maryland. The deputy commissioner shares with the Commissioner of Food and Drugs responsibility for planning, executing, and evaluating FDA's legislated mission to protect the public health of the nation's 220 million consumers as it may be impaired by food and food additives, drugs, biological products, cosmetics, medical devices, and ionizing and nonionizing radiation-emitting products and substances. The agency operates with a \$320-million budget and approximately 7500 medical, scientific, professional, and administrative personnel located throughout the United States.

This is a Civil Service position in the Senior Executive Service (SES) with a salary of \$47,889 to \$50,112.50 per annum, depending on qualifications. The individual selected, if not presently in SES, must serve a 1-year probationary period. Candidates must have had experience which involved developing and recommending policy, or interpreting and applying overall policy; organizing and carrying out specific programs; and evaluating and recommending significant changes in organizational structures and methods of operation. Candidates must also have had executive experience in an organization with a multimillion dollar budget and several thousand employees. Candidates meeting the basic eligibility requirements will be evaluated on the degree to which they possess the following qualifications: knowledge of the social, political, and economic forces affecting public health programs; ability to represent the organization with key individuals and groups outside the agency; ability to plan, implement, and evaluate programs; ability to decide agency policy; ability to enforce rules and regulations; ability to implement equal employment opportunity programs; ability to improve the employment and career opportunities for minorities, women, handicapped, and/or members of special interest groups within his/her organization; knowledge of governmental budgeting and resource allocation systems; knowledge of FDA's goals, organization, and operations; and knowledge of the social, political, and economic forces affecting regulatory programs designed to protect the public health.

Commissioned Officers interested in performing the duties within the Commissioned Corps may submit a résumé. Commissioned Officers wishing to enter SES and all other applicants must submit an SF-171, Personal Qualifications Statement (available at all federal Job Information Offices). All applicants should submit a supplemental statement detailing the extent to which they possess the qualifications outlined above. Each qualification should be addressed separately and pertinent experience, education, training, and awards described. Failure to submit the supplemental statement may result in an applicant being eliminated from consideration or given less than due credit in the rating process. Applications should be sent to: The Division of Personnel Management (HFA-440), Food and Drug Administration, Parklawn Building, 5600 Fishers Lane, Rockville, Maryland 20857. For further information, contact: Janice M. Lynch, telephone: 301-443-3634.

Applications of women and/or minority group members are especially solicited.
The Food and Drug Administration is an Equal Opportunity Employer.

DIRECTOR NATIONAL MEDICAL AUDIOVISUAL CENTER

The National Library of Medicine is seeking a creative experienced health sciences educator-manager with an understanding of the use of educational technology in the health sciences to serve as Director of its National Medical Audiovisual Center. Applicants should have made recognizable contributions to health sciences education and must demonstrate an ability to involve the health sciences community in the programs of the Center.

At the GS-15 level (\$40,832-\$50,112) this position is in the career Civil Service.

Send resume or SF-171 by May 30, 1980 to Personnel Officer, National Library of Medicine, NATIONAL INSTITUTES OF HEALTH, Public Health Service, 8600 Rockville Pike, Bethesda, MD 20209. An Equal Opportunity Employer.

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POSITIONS OPEN

RESEARCH TRAINING IN SALIVARY SECRETION

Positions are available 1 July 1980 for research training in the biochemistry, microbiology, nutrition, physiology, and pathology of salivary secretion. Applicants should have Ph.D. or a professional degree (M.D., D.D.S., D.V.M., or equivalent) and must be U.S. citizens or have permanent visas. Graduate programs leading to Ph.D. or M.S. are available. Stipends: \$13,380 to \$17,040, depending on experience.

Send curriculum vitae and statement of research interests to: **Dr. Patricia Keller, Department of Oral Biology, SB-22, University of Washington School of Dentistry, Seattle, Wash. 98195.**

University of Washington is an Equal Opportunity Employer.

SABBATICAL REPLACEMENT

Assistant professor level. Ph.D. with teaching experience. To teach 400-level molecular genetics course; 1 August to 31 December 1980 appointment. Salary commensurate with qualifications and experience. Applications received until 30 May and should be addressed to: **Dr. R. C. von Borstel, Chairman, Department of Genetics, University of Alberta, Edmonton, Alberta, Canada T6G 2E9.**

The **DIVISION OF ENVIRONMENTAL CHEMISTRY AND GEOCHEMISTRY OF SCIENCE APPLICATIONS, INC. (SAI)** invites applications for two positions in its Trace Environmental Laboratory located in La Jolla, California.

SENIOR CHEMIST (ORGANIC). An opening is anticipated during summer 1980 for a recent graduate, Ph.D. environmental chemist/geochemist with a strong background in organic sampling and analysis techniques. Special consideration will be given to those applicants demonstrating a strong potential for project management roles, the abilities of clear expression and creativity, and experience in experimental design and field sampling.

ASSOCIATE CHEMIST (ORGANIC). An immediate opening exists for an M.S. environmental chemist/geochemist with 3 to 5 years of experience in organic sampling and analysis techniques. Requirements include extensive experience in organic extraction procedures, separation chromatography and capillary GC, as well as a familiarity with HPLC, IR and GC/MS. Special consideration will be given to those applicants having experience with data reduction software and hardware and in electronic instrumentation. Responsibilities will include in-laboratory technical leadership for a growing trace organic analysis team.

Please send résumé, stating position of interest and salary requirement, to: **Dr. Robert F. Shokes, Division of Environmental Chemistry and Geochemistry, Science Applications, Inc., 464 Prospect Street, La Jolla, Calif. 92037. Telephone: 714-454-3811, extension 2632. An Equal Opportunity Employer, M/F.**

VETERINARY PARASITOLOGIST—The Department of Parasitology, College of Veterinary Medicine, University of Georgia, has a position available for a research associate in veterinary parasitology. Requirements for the position include D.V.M./M.S., Ph.D., or equivalent degree with research training or experience in laboratory maintenance of filariae, filarid immunology, light and electron microscopy, testing of anthelmintics, and biostatistics. Duties include codirecting a filariasis repository service and directing commercially supported projects dealing with anthelmintic testing and immunodiagnosis of helminth infections. Deadline: 1 June 1980. Annual salary is \$16,000. Send curriculum vitae with the letter of application to: **Dr. John W. McCall, Associate Professor, College of Veterinary Medicine, University of Georgia, Athens, Georgia 30602. An Equal Opportunity/Affirmative Action Institution.**

VIROLOGIST

Full-time position available for postdoctoral associate. Research and training in genetics and replication of DNA invertebrate viruses. Experience in contemporary nucleic acid and/or protein synthesis techniques required, and experience in tissue culture preferred. Application deadline and position available: August 1980. Qualified applicants send curriculum vitae and names of three references to: **Dr. H. Alan Wood, Boyce Thompson Institute at Cornell University, Tower Road, Ithaca, New York 14853. An Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

RESEARCH ASSOCIATES, Ph.D. biochemistry, cell or molecular biology, are available for at least 3 years. Positions in metabolic regulation involves studies of the role of cyclic AMP-dependent phosphorylation in the hormonal regulation of gluconeogenesis and transport processes in kidney. These systems will be examined with isolated enzymes and with epithelial cells in culture.

Other positions are available to study the biosynthesis and secretion of cell surface antigens in tumor cells and acidic mucin glycoproteins in respiratory tissue. Salary range from \$13,500 to \$16,000. Send résumé and references to: **Dr. Joseph Mendicino, Department of Biochemistry, University of Georgia, Athens, Ga. 30602.**

SENIOR SCIENTISTS

Fields: molecular genetics, electron microscopy, and cancer biochemistry. A Basic Cancer Research Institute nonprofit, independent, academic atmosphere academic appointment. Excellent environment in growing southeast area. *We are an Equal Opportunity/Affirmative Action Employer.* **Box 128, SCIENCE.**

SEMINARS

MICROSCOPY IN MATERIALS SCIENCE SEMINARS 2 to 6 June and 14 to 18 July

Topics to be covered include: theory and structure of microscopes, analysis of microstructure, X-ray fluorescence, replicas, thin films and metallurgical interpretation.

TRANSMISSION ELECTRON MICROSCOPY FOR THE LIFE SCIENCES 9 to 13 June and 21 to 25 July

Topics to be covered include: TEM instrumentation, support films, negative staining, shadowing, fixation and embedding, thin sectioning, post-staining, and photography.

SCANNING ELECTRON MICROSCOPY SEMINAR 16 to 20 June and 28 July to 1 August

Topics to be covered include: coating techniques, critical point drying, x-ray fluorescence, vacuum techniques, photography, and maintenance.

MICROSCOPY OF PARTICLES 23 to 28 June and 11 to 15 August

Topics to be covered include: sources and collection of particles, optical and electron microscopy instrumentation, and sample preparation. Contact: **B. L. Gabriel, Electron Microscopy Laboratory, Department of Physics, Elmhurst College, 190 Prospect, Elmhurst, Ill. 60126; or telephone: 312-279-4100, extension 413.**

TRAINEESHIPS

NLM POSTDOCTORAL TRAINEESHIPS (two M.D.'s and one Ph.D.) available in health sciences and computer technology. The traineeship includes specially tailored course work and research. Possibility of earning an M.E. in biomedical engineering for candidates with appropriate background. Apply to:

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University of Virginia
Box 377, Medical Center
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