

land communities in Ireland bogs and blanket mires are specifically excluded.

The editor is well known for his palynological and stratigraphical studies of mire development. He has brought together in this volume a great deal of information on the vegetation of European mires that is not available in English and is often known only locally. The book is well edited, with few spelling errors, and is written in surprisingly good English. The editor obviously made a major effort in editing the papers by non-English-speaking contributors. Overall, this is a helpful reference book on the vegetation and classification of European mires.

A. W. H. DAMMAN

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## Aging in Cells

**Cellular Ageing.** H. W. SAUER, Ed. Karger, Basel, 1984. x, 276 pp., illus. \$88.75. Monographs in Developmental Biology, vol. 17.

This slim, handsome volume brings together a group of 17 papers (presumably a subset of the best) submitted in response to the announcement of the 20th annual competition of the Heinz Karger Memorial Foundation. In brief introductory remarks by Dr. Thomas Karger and Steven Karger (this event is obviously a family affair), we learn that Dr. Heinz Karger was a director of the publishing house of S. Karger from 1935 until his death in 1959 and that the Foundation has been honoring outstanding scientific researchers from a diversity of fields for the past 20 years through financial prizes awarded as a result of regular competitions. The 20th competition, which I understand was for a cash award of some 20,000 Swiss francs, dealt with the theme of cellular aging. It departed from tradition by permitting review papers as well as reports of original research and by the publication of a collection of the submissions in book form.

The book contains accounts of some outstanding research, and these include the papers by the two prizewinners (who shared the award), Thomas B. L. Kirkwood and James R. Smith. Both are comparatively young investigators, which is a good omen (although we gerontologists have special affection for late bloomers). Smith is an expert in mammalian cell culture and has produced (often in collaboration with Olivia Pereira-Smith) a most elegant series of papers

dealing with the phenomenon of clonal attenuation of normal human diploid cells. Here is an example of a line of gerontological investigation (pioneered by Leonard Hayflick and Paul S. Moorhead) that was pretty much ignored by a number of tumor biologists, who for years utilized, almost exclusively, such immortal cell lines as 3T3 and BHK for their research on in vitro "transformation." Smith's paper describing in vitro demonstrations of replicative mortality of fibroblasts is "must" reading for any investigator interested in the regulation of cell proliferation and the general problem of proliferative homeostasis. A good companion piece to Smith's paper is David E. Harrison's description of his nicely designed investigations of the serial replication of hemopoietic stem cells in vivo. Harrison believes his evidence strongly suggests that these stem cells have an essentially unlimited replicative potential.

Kirkwood is primarily a theoretical biologist, though he has collaborated closely with an experimental geneticist, Robin Holliday (who, incidentally, has two contributions in the volume). In his review essay, Kirkwood argues compellingly that adaptive explanations of aging are unsound and reviews his "disposable soma" theory of aging, which predicts that, in organisms that are iteroparous (reproduce repeatedly) and in which, therefore, one does not observe the tight coupling between reproduction and somatic death found in organisms that are semelparous (reproduce only once), the level of repair of macromolecular damage to somatic cells is insufficient to prevent cumulative damage and, eventually, organismic death. He believes there is a trade-off, in evolutionary strategy, between the energy required for somatic maintenance and that required for reproduction, the investment of resources in maintenance and repair of the soma being always less than what is required for indefinite survival.

Other contributions include a series of papers on senescence of the immune system (including a very useful review by M. E. Weksler and G. W. Siskind), which is the most fruitful system for the investigation of how cell-cell interactions might be altered during aging; a timely review by D. M. Bowen of the selective vulnerability of cholinergic neurons, a topic of immense clinical importance; comparisons between in vitro and in vivo aging, including a description by M. T. Flood and colleagues of a new cellular model system for aging research, human retinal epithelium (photographs of which are displayed on the book jacket); and a

number of papers on cytoplasmic aging. Among these last papers, those by M. M. B. Kay and D. J. Cummings are of special interest. Kay reports evidence that a specific transmembrane polypeptide undergoes proteolytic degradation in a variety of mammalian cell types during aging. Cummings reports on a series of elegant molecular genetic studies that establish a correlation between the excision and amplification of segments of mitochondrial DNA and the clonal senescence of the fungus *Podospora anserina*.

I have little hesitation in recommending the book to my colleagues in gerontology. It is not a systematic or balanced representation of the field, however, and non-gerontologists are likely to be disappointed by it. Nevertheless, the editor and his colleague K. J. Aufderheide (who was given the awesome assignment of writing an integrated overview of this heterogeneous material) have done a creditable job, and we can be grateful to them for persevering.

GEORGE MARTIN

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## Reprints of Books Previously Reviewed

**In Search of Mind.** Essays in Autobiography. Jerome Bruner. Harper and Row, New York, 1984. Paper, \$6.95. Harper Colophon Books. *Reviewed* 224, 720 (1984).

**Man Discovers the Galaxies.** Richard Berendzen, Richard Hart, and Daniel Seeley. Columbia University Press, New York, 1984. \$30; paper, \$10.95. *Reviewed* 199, 763 (1978).

**The Zapotecs.** Princes, Priests, and Peasants. Joseph W. Whitecotton. University of Oklahoma Press, Norman, 1984. Paper, \$9.95. *Reviewed* 220, 661 (1978).

## Books Received

**Asymptotic Theory for Econometricians.** Halbert White. Academic Press, Orlando, Fla., 1984. x, 230 pp. \$39. *Economic Theory, Econometrics, and Mathematical Economics.*

**Atlas of Sedimentary Rocks under the Microscope.** A. E. Adams, W. S. MacKenzie, and C. Guilford. Halsted (Wiley), New York, 1984. vi, 104 pp. Paper, \$24.95.

**Living and Working in the Sea.** James W. Miller and Ian G. Koblick. Illustrated by William Boggess. Van Nostrand Reinhold, New York, 1984. xiv, 433 pp. \$32.95.

**Living with the Louisiana Shore.** Joseph T. Kelley et al. Duke University Press, Durham, N.C., 1984. xii, 164 pp., illus. \$22.75; paper, \$9.75. *Living with the Shore.*

**Making Money with Your Home Computer.** Dana K. Cassell. Dodd, Mead, New York, 1984. xii, 143 pp., Paper, \$5.95.

**Zoological Philosophy.** An Exposition with Regard to the Natural History of Animals. J. B. Lamarck. Introductory Essays by David L. Hull and Richard W. Burkhardt, Jr. University of Chicago Press, Chicago, 1984. Ixvii, 458 pp. \$30; paper, \$15. Translated from the French edition by Hugh Elliot. *in Mechanics and Thermal Sciences.*

# Personnel Placement

SCIENCE publishes each Friday, except the last Friday of the year. Advertising is accepted only in writing; no abbreviations. Any deadline in ad must be at least 2 weeks after date of issue in which ad appears. Also, personnel advertising is accepted only with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual preference.

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**POSITIONS WANTED:** 40¢ per word, plus \$4 for use of box number, per week. \$10 minimum, per week. Prepayment required. This rate is available only to individuals seeking jobs.

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SCIENCE  
1515 Massachusetts Avenue, NW  
Washington, D.C. 20005

## POSITIONS WANTED

**Applied and Industrial Microbiologist, M.S.** Eight years of experience. Three years of managerial experience in pilot/production fermentation plant responsible for process development and production of experimental antibiotics. Five additional years of experience with laboratory and pilot plant biomass to energy conversion projects, including enzymatic hydrolysis, strain and medium optimization, and aerobic and anaerobic fermentations. Also experienced with computer interfacing with instrumentation for data acquisition, analysis, and control. Seeks position in fermentation research or as a group leader in fermentation process development. Box 28, SCIENCE. X

**Aquatic Biologist, Ph.D.** Postdoctoral experience, strong research and publication record, excellent writing/editing skills, expertise in planktonic/benthic, marine/freshwater biology, familiarity with contemporary environmental concerns. Seeks position with emphasis on biological/environmental issues in corporation/consulting firm/nonprofit organization. West Coast preferred. Box 31, SCIENCE. X

**Biochemist/Antibiotic Research, Ph.D.** seeks position with industry/government; preferably in New Haven, Connecticut, Philadelphia, Pennsylvania, or Frederick, Maryland, areas. Six years of experience as group leader in antitumor antibiotics research, including: fermentation, screening procedures, de-replication, isolation, structure analysis, biosynthesis, and mechanism of action. Also familiar with tissue culture techniques. Excellent reputation, publications, and references. Box 14, SCIENCE. X

**Manager—Project Feasibility Studies,** international experience on resource extraction, industrial and water projects. Licensed C.E., Ph.D. in physical science. Box 25, SCIENCE. X

## POSITIONS WANTED

**Clinical Microbiologist, Ph.D., M.P.H.,** 15 years of experience in directing large hospital microbiology laboratory, university teaching, and infection control. Seeking suitable position in clinical/public health microbiology or infection control. Box 22, SCIENCE. X

**Microbiologist, B.A., RM(AAM)** in pathogenic bacteriology/virology, 15 years of experience in veterinary research, diagnostic virology, serology, electron microscopy; veterinary vaccine development; mammalian, insect, and microcarrier cell culture; laboratory design/safety; public speaking, technical writing, publications; equipment purchase; personnel management; resource management planning. Seeks management position/director of quality control with biotech firm. Box 8, SCIENCE. X

**Organic Chemist, Ph.D. (1984)/Process Chemist (M.Sc.),** Research in polymerchemistry, peptide synthesis, process chemistry. Four years of experience in HPLC and modern analytical methods. Fluency in English and German. Seeks employment in academia, university, or industry. Will relocate. Immediately available. Box 27, SCIENCE. X

**Recent Ph.D. in Biochemistry** with knowledge of protein purification; techniques include HPLC, CD, fluorimetry and immunochemistry. Also with 8 months of postdoctoral training in purification and analysis of eukaryotic mRNA. Seeks position in research and/or teaching. Box 28, SCIENCE. X

**Ph.D.—Molecular Biology/Biochemistry (1982)** seeks challenging academic/industrial or postdoctoral position in near future. Research experience with recombinant DNA techniques, hybridizations, DNA sequencing, oligodeoxyribonucleotide probes, colony-screening, enzyme purification/characterization, electrophoresis, isoelectro-focusing, enzymology, tissue culture, isolation/translation of mRNA, specific immunoprecipitations, and more. Box 29, SCIENCE. 2/1, 8

**Ph.D., 1984, Nutrition and Endocrine Aspects in Reproduction.** Experience in protein analysis, endocrine studies in vivo and vitro, electron and light microscope. Desires employment in research/teaching or both, in academic, government, or industry. Immediately available. P.O. Box 656, Arlington, Va. 22216. 2/1, 8

**Research Assistant, M.S.** experienced with recombinant DNA, enzymology, electrophoresis, radioisotopes, nick translation, DNA hybridization, autoradiography, sterile techniques, DNA isolation. Seeks challenging position in molecular biology. Box 30, SCIENCE. X

**Research Scientist, Ph.D.** Experienced in cardiac physiology and metabolism. Recent background in P-31 NMR applications in isolated heart. Diabetes, ischemia, and pathobiochemistry of adrenergic-induced myocardial necrosis. Technical background includes: canine surgery, microsphere technique, lipids, HPLC, oxygen transport, energy metabolism, isolated heart perfusions. Publications (22 articles). Seeking rewarding experience in related areas in academic or pharmaceutical research. Box 24, SCIENCE. X

## POSITIONS OPEN

**ASSISTANT/ASSOCIATE PROFESSOR** (tenure track), **Department of Medicine, Stanford.** The Division of Oncology will be appointing a laboratory based medical oncologist at Stanford. We are searching for an individual with independent research capability and a record of productivity, preferably in the areas of molecular biology as it relates to viral oncology, immunology, genetics, or chemotherapy of neoplasia. In addition, this individual will be expected to participate in teaching programs and patient care in medical oncology. Send résumé, including bibliography and summary of research goals, to: **Dr. Ronald Levy, Chairman, Search Committee, Division of Oncology, Stanford University School of Medicine, Room M211, Stanford, California 94305.** Stanford is an Equal Opportunity Employer and welcomes nominations of women and minority group members and applications from them.

## POSITIONS OPEN

The University of Illinois at Chicago, Department of Chemistry, has available two tenure-track or tenure-level **ACADEMIC POSITIONS IN BIOCHEMISTRY.** For one position, the area of specialization is unrestricted; for the second, candidates are sought with an interest in the application of recombinant DNA techniques to protein structure and function or with an interest in cell surface biochemistry. The appointments will be effective in September 1985. Candidates must have a Ph.D. and demonstrate outstanding research potential. Send résumé, list of publications, and statement of research plans, and have four letters of recommendation sent to: **Professor Paul R. Young, Chairman, Search Committee, Department of Chemistry, University of Illinois at Chicago, P.O. Box 4348, Chicago, Ill. 60680.** Deadline is 1 month after appearance of this advertisement. *The University of Illinois is an Equal Opportunity/Affirmative Action Employer.*

### BUFFALO, ACADEMIC RESEARCH PSYCHIATRISTS—DEPARTMENT OF PSYCHIATRY, STATE UNIVERSITY OF NEW YORK (SUNY) AT BUFFALO

Faculty positions recently became available at assistant, associate, and professorial ranks. Seeking academic psychiatrists with strong research commitment. Major areas of interest of department are in schizophrenia and affective disorders, as well as anxiety disorders and geriatric psychiatry. These positions do not carry administrative or clinical responsibilities. The department has excellent clinical resources with accessibility to a wide variety of patients for research projects. There is a generous University Practice Plan for supplementation of income. Inquiries and résumé to: **Marvin I. Herz, M.D., Professor and Chairman, Department of Psychiatry, SUNY at Buffalo, School of Medicine, 462 Grider Street, Buffalo, New York 14215; telephone: 716-898-3251.** *An Equal Opportunity/Affirmative Action Employer.*

### ANIMAL BEHAVIORIST

Instructor or assistant professor of biology, Colby College. A temporary 1-year appointment, starting 1 September 1985. Applicants should be broadly educated in the biological sciences and experienced in animal behavior. Preference may be given to those whose papers are received by 1 April 1985. Send curriculum vitae and three letters of recommendation to: **Dr. Miriam F. Bennett, Department of Biology, Colby College, Waterville, Maine 04901.** *An Equal Opportunity/Affirmative Action Employer.*

**ANIMAL PHYSIOLOGIST:** The Biological Sciences Department of Goucher College seeks candidates for a 1-year appointment at the assistant professor level to replace an individual on sabbatical leave. Teaching responsibilities include animal physiology, an introductory course in vertebrate biology, and a senior seminar in area of the applicant's specialty. Ph.D. expected. Send curriculum vitae and three letters of recommendation by 20 February 1985 to: **Dr. George Delahunty, Department of Biological Sciences, Goucher College, Towson, Md. 21204.** *Goucher is an Equal Opportunity Employer.*

### ASSISTANT PROFESSOR

Applications are invited for 10-month, tenure-track position in a new Exercise and Sport Sciences Department at University of Arizona. Applicants must have Ph.D. or equivalent with specialization in either exercise physiology or biochemistry. Previous research with animals and postdoctoral experience essential; interest in cellular adaptations of cardiac or skeletal muscle is preferred. Requires teaching of physiology to undergraduates and exercise physiology or biochemistry to graduate students. Expertise must attract external funding. Application deadline: 15 March 1985 with starting date of 16 August 1985. Salary: \$28,000. Submit letter of intent, curriculum vitae, three reprints, and three letters of reference to: **Charles M. Tipton, Ph.D., Head, Department of Physical Education, University of Arizona, Tucson, Arizona 85721.** *Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT RESEARCH CHEMIST, Ph.D.,** 5 years of experience, pharmaceutical or chemical QC. Experience in HPLC and electrochemical assay development and ability to design and build electrochemical flow cell electrodes for pharmaceutical compounds required. Salary: \$26,950 per year. Apply to: **Department of Labor, 410 Bradford Street, NW, Gainesville, Georgia 30503.** Reference Control Number GA-5037995. *Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### ASSISTANT PROFESSOR

Position available spring 1985. The Division of Nuclear Medicine and Biophysics, Department of Radiological Sciences, at the University of California, Los Angeles (UCLA), School of Medicine, seeks a highly qualified individual with strong expertise in biochemistry. The successful candidate is expected to initiate an active research program in myocardial metabolism and to demonstrate a commitment to teaching at the graduate and postgraduate levels. Send résumé, the names of three references, and a brief description of research interests by 1 March 1985 to: **Dr. H. R. Schelbert, Division of Nuclear Medicine and Biophysics, Department of Radiological Sciences, UCLA School of Medicine, University of California at Los Angeles, Los Angeles, California 90024. An Equal Opportunity Employer.**

**ASSISTANT PROFESSOR**—Applications are invited for a 3-year position in mammalian physiology. The appointee will take part in freshman courses for both majors and nonmajors and will develop an upper division course in the area of expertise. Ph.D. strongly preferred. Send application, including résumé, summary of teaching experience, transcripts, and three letters of reference, before 22 February 1985 to: **Dr. R. J. Ellis, Chair, Department of Biology, Bucknell University, Lewisburg, Pa. 17837. An Affirmative Action/Equal Opportunity Employer.**

**ASSISTANT PROFESSOR, MICROBIOLOGY.** The Department of Biology, University of Missouri—St. Louis, invites applications for a tenure-track position in microbiology. The position includes responsibility for teaching lecture sections and supervising laboratory activities in a general microbiology course for nursing students. Teaching and practical experience in an allied health area are desirable. Additional teaching opportunities include a graduate course in the applicant's area of specialization and supervision of graduate student research. The successful candidate will be expected to develop a productive research program and secure extramural funding. Send complete curriculum vitae, statement of research interests and goals, reprints of selected research papers, and names, addresses, and telephone numbers of three professional references by 1 March 1985 to: **Chairperson, Microbiology Search Committee, Department of Biology, University of Missouri—St. Louis, 8001 Natural Bridge Road, St. Louis, Mo. 63121.**

**YALE UNIVERSITY, DEPARTMENT OF PSYCHOLOGY:** Position open at ASSISTANT PROFESSOR level beginning fall 1985. The Psychology Department is seeking applications from outstanding candidates for this position without regard to area of psychology. All applicants with exceptional records of teaching and research are invited to apply. Applicants should send curriculum vitae, preprints, and reprints, as well as arrange to have three letters of recommendation sent to: **Robert J. Sternberg, Junior Search Committee, Chair, Department of Psychology, Yale University, Box 11A Yale Station, New Haven, Conn. 06520-7447. Deadline for applications is 31 March 1985. Yale University is an Equal Opportunity/Affirmative Action Employer. Applications from women and minorities are especially encouraged.**

**ASSISTANT RESEARCH IMMUNOLOGIST**—Position available to start 1 September 1985 to work on the cellular and immunological aspects of malignancy, Down syndrome (trisomy 21), and the biochemistry of action of interferon and other biological response modifiers. Applicant must have Ph.D. or equivalent training and at least 6 years of productive postdoctoral research experience in cellular or tumor immunology with special emphasis on cellular interactions, macrophage function, lymphokine biology, and knowledge of cloning, hybridoma, flow cytometric, and protein biochemical techniques. Salary will be commensurate with experience. Send curriculum vitae and three letters of reference by 15 March 1985 to: **Dr. Lois Epstein, Cancer Research Institute, University of California, San Francisco, Calif. 94143. Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.**

**BIOSTATISTICIAN or MATHEMATICIAN** with background in statistics and computer programming, for analyses of radiographic and medical data as they relate to decision-making in health. Apply to: **Barbara J. McNeil, M.D., Harvard Medical School, 25 Shattuck Street, Boston, Mass. 02115.**

## POSITIONS OPEN

### ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE TENURE-TRACK APPOINTMENT IN PHARMACOLOGY

The Department of Pharmacology at St. Louis University School of Medicine is seeking qualified applicants for a tenure-track appointment in **PHARMACOLOGY** at the ASSISTANT PROFESSOR level. Candidates must possess a Ph.D. or M.D. degree (or equivalent), have a period of productive postdoctoral training, and have demonstrated research experience in autonomic, biochemical, cardiovascular, or neuropharmacology. Candidates must be committed to quality teaching and research and will be expected to develop a strong research program supported by extramural funding. Interested persons should send curriculum vitae and bibliography, three letters of recommendation, and a brief description of future research plans to:

**Dr. Thomas C. Westfall  
Professor and Chairman  
Department of Pharmacology  
St. Louis University School of Medicine  
1402 South Grand Boulevard  
St. Louis, Mo. 63104**

*St. Louis University School of Medicine is an Affirmative Action/Equal Opportunity Employer.*

### ASSISTANT PROFESSOR PHARMACOLOGY/TOXICOLOGY

Applications are invited for a 4-year, potentially tenure-track, position at the assistant professor level in the Division of Pharmacology and Toxicology of the College of Pharmacy. The position is available 1 September 1985 or earlier. Duties include both graduate and undergraduate teaching and the establishment of an independent research program. Preference will be given to candidates with a degree in pharmacology or toxicology and with research interests in biochemical toxicology, but all areas of research will be considered. Send curriculum vitae and the names of three references before 1 April 1985 to: **Dr. C. K. Erickson, College of Pharmacy, The University of Texas at Austin, Austin, Texas 78712.**

**ASSISTANT PROFESSOR—WILDLIFE MANAGEMENT/MAMMALIAN ECOLOGY.** A tenure-track, 9-month, full-time appointment. Ph.D. in wildlife biology/wildlife management, or closely related field; experience or training in wildlife diseases, wildlife physiology, or habitat analysis preferred. To teach undergraduate wildlife management courses and graduate courses in methods of field ecology and area of expertise; develop a research program directing undergraduate and M.S. graduate student research. Starting date: 15 August 1985. Send résumé, transcripts, and three letters of recommendation by 1 March to: **Dr. Robert B. Frederick, Department of Biological Sciences, Eastern Kentucky University, Richmond, Kentucky 40475. An Equal Opportunity/Affirmative Action Employer.**

**BIOCHEMISTRY, ASSISTANT PROFESSOR**—Tenure track, fall 1985. University of Montana, Department of Chemistry, seeks Ph.D. with expertise in nucleic acid biochemistry or closely related area. Evidence indicating ability to establish and maintain a vigorous research program and ability to teach graduate and undergraduate biochemistry courses is required. Send résumé and three letters of recommendation to be received 1 March 1985 to: **Professor Walter E. Hill, Department of Chemistry, University of Montana, Missoula, Mont. 59812. An Equal Opportunity/Affirmative Action Employer.**

### BIOCHEMIST OR PHARMACOLOGIST

**Assistant professor.** The Department of Surgery at Washington University School of Medicine solicits applications for an investigator at the assistant professor level to participate in a funded NIH grant investigating the importance of prostaglandin metabolism and the immunoregulation of renal allograft rejection using a dog model. Applicant should be interested in a long-term commitment to a clinically active and research oriented transplantation service. Potential for developing independent research interests and independent funding is a prerequisite. Primarily a research position with minimal teaching responsibilities. Send curriculum vitae, a brief outline of research interests, and three letters of recommendation to: **Dr. Charles B. Anderson, Chief, Division of General Surgery, Washington University School of Medicine, Barnes Hospital, St. Louis, Missouri 63110.**

## MYCOGEN

Mycogen Corporation is a rapidly growing agricultural biotechnology firm specializing in the production of microbial herbicides and insecticides. We presently have openings for persons with the following skills:

**Microbiologist**—Ph.D. with training in microbial ecology and biochemistry. Will carry out studies of the properties of cells in formulations and in the field. Good quantitative skills and the ability to carry out carefully controlled field tests are essential.

**Insect Physiologist**—Ph.D. with training in biochemistry. Will be involved in studies of the mechanisms of action of hormones, viruses and toxins.

**Fermentation Engineer**—M.S./Ph.D. with training in microbiology and biochemistry. Will assist in the development and scale-up of fermentation and recovery processes.

**Fermentation Technician**—Will operate pilot scale fermentation and recovery equipment. Requires knowledge of biology, chemistry and good mechanical skills.

Mycogen offers competitive salaries and benefits and an exceptional working environment. Application can be made by sending a resume complete with references and salary history to:



**Personnel Department, KDF-1  
Mycogen Corporation  
5451 Oberlin Drive  
San Diego, CA 92121**

## U.S. DEPARTMENT OF AGRICULTURE (USDA) AGRICULTURAL RESEARCH SERVICE (ARS) National Program Leaders—Two Positions for (Forage, Pasture, and Range) and (Weed Science)

Highly qualified scientists are needed to assume the duties of national program leader and will serve as the focal point for national leadership and coordination of agricultural research programs relating to (forage, pasture, and rangelands) and (weed science), on the Agricultural Research Service's National Program Staff.

The successful candidate will focus on building broad multidisciplinary research programs to solve national agricultural problems conducted throughout the United States and in several foreign countries. Candidates must demonstrate skills for program planning, setting research priorities, allocating resources, and evaluating programs.

### QUALIFICATIONS:

In addition to the basic requirement for all grades, candidates must have 3 years' professional experience in the programs related to (forage, pasture, and rangelands) and/or (weed science). Some education may be substituted for a portion of the experience requirements.

The positions are located in Beltsville, Maryland. Grade level is GM-15. Salary range is \$50,495 to \$65,642, based on qualifications and experience. U.S. citizenship is required.

Candidates must contact the person listed below to obtain an application package.

Applications must be received no later than February 28, 1985 and sent directly to:

**Ivy C. Hungerford  
Personnel Division  
U.S. Department of Agriculture  
Room 107, Building 003, BARC-West  
Beltsville, MD 20705**

USDA IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER.

## POSITIONS OPEN

### ASSISTANT PROFESSOR OF ENTOMOLOGY

The Department of Entomology, University of Missouri-Columbia, invites applications for the above 12-month, tenure-track faculty position. Ph.D. in entomology, effective communication and teaching skills, and demonstrated research ability. Responsibilities primarily in extension with complementing research program in forage, soybean, and small grain insect pests. One advanced course in IPM in alternate years. Candidates should submit by 20 March 1985 a letter describing qualifications, interest in the position and professional goals; résumé, transcripts, major publications, and request four letters of reference, all to be sent to: **Chairman, Search Committee, Department of Entomology, 1-87 Agriculture Building, University of Missouri, Columbia, Missouri 65211.**

**UNIVERSITY OF FLORIDA**—Department of Medicine seeks **ASSISTANT RESEARCH SCIENTIST** in the Division of Nephrology and Hypertension. Candidates must hold Ph.D. degree and should have at least 3 years of postdoctoral experience in physiology or related fields. The individual will have responsibility of research investigating the roles of thromboxane/prostaglandins in renal hemodynamics using micropuncture methods. Recruiting deadline: 1 March 1985. Anticipated starting date: 1 April 1985. Contact: **C. S. Wilcox, M.D., Ph.D., Box J-224 JHMHC, University of Florida, Gainesville, Florida 32610. An Equal Opportunity/Affirmative Action Employer.**

**BEHAVIORAL TOXICOLOGIST:** U.S. Environmental Protection Agency is seeking candidates for consideration against a potential opening in the area of behavioral toxicology. This position will be located in the Behavioral Toxicology Branch, Neurotoxicology Division, Health Effects Research Laboratory. It is a federal Civil Service (term) position not to exceed 4 years, although subsequent career opportunities are a distinct possibility. Salary range: \$30,549 to \$47,226, depending upon experience.

The successful candidate will be expected to: (i) develop a program of research to evaluate in laboratory animals the consequences of short-term and long-term exposure to environmental chemicals on acquired behavior (learning, memory, and performance), and (ii) closely collaborate with other scientists similarly evaluating morphological, neurochemical, and neurophysiological processes.

The candidate: (i) should possess a Ph.D. in behavioral toxicology or an allied discipline or possess equivalent experience, and/or (ii) have postdoctoral research experience as evidenced by publications in peer-reviewed journals.

Forward curriculum vitae and names of three persons we can contact for references to: **Dr. R. C. MacPhail, Chief, Behavioral Toxicology Branch, c/o Personnel Management Division (MD-29), Research Triangle Park, North Carolina 27711, by 11 March 1985.**

**THREE POSITIONS IN BIOLOGY.** The Department of Biology of Montclair State College invites applications for three tenure-track positions, beginning 1 September 1985. Applicants must have an earned Ph.D. in an appropriate field and have a commitment to teaching and a desire to develop and maintain a vigorous research program involving student participation. Salary ranges are: assistant professor, \$21,981 to \$29,677; associate professor, \$26,719 to \$36,075.

**TOXICOLOGIST.** Director of a small, but growing, toxicology program. Preference will be given to someone with the ability to teach anatomy and physiology courses. Assistant/associate professor.

**MICROBIOLOGIST.** Someone with a background in the human applications of microbiology and the ability to teach undergraduate microbiology courses. Preference will be given to someone with the ability to teach anatomy and physiology courses as well. Assistant professor.

**POPULATION BIOLOGIST, or ENVIRONMENTAL PHYSIOLOGIST.** Ability to teach undergraduate biology courses is required. The candidate should have an area of specialization in mathematical modeling of biological systems. Assistant professor.

Submit curriculum vitae, description of teaching and research interests, and the names of three references to: **Dr. J. Michael McCormick, Chairman, Department of Biology, Montclair State College, Box C316(S)V45-7, Upper Montclair, N.J. 07043.** Applications close 15 February 1985. *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### BASIC SCIENCE FACULTY MEMBER IN CLINICAL DEPARTMENT

Wright State University School of Medicine, Department of Emergency Medicine, is seeking an **assistant or associate professor** with a Ph.D. in one of the biomedical sciences. This person will assist in development of a research laboratory. Responsibilities will include medical student teaching in basic science, development of a laboratory facility, and assistance in development and implementation of a departmental research program. Opportunities exist for research in cardiac and cerebral resuscitation and magnetic resonance-related activities. Position will offer a supportive environment in an academically stimulating, clinically active, well-respected department. Full-time laboratory technical assistance is provided. Limited equipment funding is available. A secondary faculty appointment in a basic science department would be available if appropriate. Salary and benefits will be commensurate with previous experience and Wright State University School of Medicine standards. Applications with current curriculum vitae and the names of three references should be sent to: **John B. McCabe, M.D., Research Coordinator, Wright State University School of Medicine, Department of Emergency Medicine, P.O. Box 927, Dayton, Ohio 45401.** All applications received by 1 March 1985 will be considered; if the position is not filled therefrom, applications will be considered as received until the position is filled. *Wright State University is an Equal Opportunity/Affirmative Action Employer.*

**BIOLOGY**—The Department of Biology at West Chester University invites applicants for two full-time, tenure teaching/research positions. **PLANT ECOLOGIST/PLANT TAXONOMIST**—Teaching responsibilities will include courses in field botany, plant taxonomy, plant communities, and general biology. Submit information to: **Dr. Frank Fish.** **ANIMAL CELL PHYSIOLOGIST**—Teaching responsibilities will include courses in human physiology, human anatomy, and general introductory biology. Submit information to: **Robert Bernhardt.** Both positions will also include participation in graduate teaching and research in the area of the candidate's specialization. Requirements include a Ph.D. and college teaching experience. Postdoctoral experience is desirable. Expected availability: September 1985. Submit curriculum vitae, a complete set of undergraduate and graduate transcripts, and three letters of commendation postmarked by 1 March 1985 to: **Department of Biology, WEST CHESTER UNIVERSITY, West Chester, Pa. 19383.** *West Chester University is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

### BOTANIST

Assistant/associate professor, tenure-track, Ph.D. required. Teaching responsibilities include introductory biology and advanced undergraduate botany courses, including vascular plant taxonomy. Excellence required in teaching and research. Postdoctoral research and recent publications preferred. Submit curriculum vitae and three letters of recommendation to: **Dr. Thomas Flickema, Dean of Faculty, Northern State College, Aberdeen, S.D. 57401.** Review of completed applications will begin 15 March 1985. Applications accepted until position is filled.

### CHAIRPERSON DEPARTMENT OF BIOLOGICAL SCIENCES

The Department of Biological Sciences at State University of New York at Albany (SUNYA) is seeking a senior scientist to serve as chairperson. The department has 33 faculty and 70 graduate students with research interests in the following areas: Cell and developmental biology, ecology and animal behavior, molecular biology, and neurobiology.

Candidates should have a research program compatible with one of the above areas and a broad appreciation for graduate and undergraduate training in biology. The department expects to make several junior appointments within the above areas in the next several years. A letter of interest and curriculum vitae should be sent before 1 March 1985 to: **Dr. Jon Jacklet, Chair, Search Committee, Department of Biological Sciences, State University of New York at Albany, 1400 Washington Avenue, Albany, N.Y. 12222; telephone: 518-457-4036.**

*SUNYA is an Affirmative Action/Equal Opportunity Employer. Applications from minority persons, women, handicapped persons, and Vietnam veterans are especially welcomed.*

## POSITIONS OPEN

**CHEMIST III (M.S. or Ph.D.)** in biochemistry with a strong background in purification and characterization of polypeptides. Experience with immunoblotting, immunoaffinity chromatography, isoelectric focusing, amino acid analysis, sequencing; HPLC and RIA would be helpful but not necessary. A challenging opportunity to join a group supported by NSF and NIH with an emphasis on bovine luteal peptides. Starting salary \$18,395 (State line). Send résumé and the names of three references to: **Dr. Michael J. Fields, Department of Animal Science, University of Florida, Gainesville, Fla. 32611.**

### CHEMISTRY: ORGANIC CHEMIST/BIOCHEMIST

The Department of Biological and Physical Sciences, Division of Arts and Sciences, invites applications for an anticipated tenure-track position at the assistant/associate professor level commencing August 1985. Responsibilities include teaching, at the undergraduate level, various chemistry courses including organic chemistry and biochemistry. Although teaching is the prime responsibility, research and service are also expected. Desired qualifications include an earned doctorate, preferably in organic chemistry or biochemistry, and some college-level teaching experience in chemistry. Salary is competitive and includes an excellent fringe benefit package. Send résumé, copies of transcripts, and the names and addresses of at least three references by 15 March 1985 to:

**Dr. Robert R. Roales  
Coordinator of Natural Sciences  
Indiana University at Kokomo  
2300 South Washington Street  
Kokomo, Indiana 46902**

*Indiana University at Kokomo is an Equal Opportunity/Affirmative Action Employer.*

### DIRECTOR OF A DEVELOPMENTAL NEUROBIOLOGY RESEARCH CENTER

The Medical School of the University of North Carolina at Chapel Hill (UNC-CH) seeks a **director** for the Biological Sciences Research Center (BSRC), a multi-disciplinary research center devoted to basic research in the broad area of developmental neurobiology and mental retardation. Nominations or applications are invited for the position of director. This center is housed in 33,000 square feet of a modern research building.

The director is the chief administrative officer of the Center and reports to the dean of the School of Medicine. Candidates should have an M.D. or Ph.D. degree, a strong record of neurobiological research achievement, a commitment to continue an active research program, administrative experience, and qualifications for a primary tenure-track appointment in a basic or clinical science department in the School of Medicine. Nominations and applications should be received prior to 1 April 1985 by: **The Search Committee for the Director of the BSRC, Office of the Dean, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, N.C. 27514.** *Women and minorities are encouraged to identify themselves voluntarily. UNC-CH is an Equal Opportunity/Affirmative Action Employer.*

### DIRECTOR, CENTER FOR HEALTH PROMOTION/DISEASE PREVENTION UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Provide leadership for the development of a Center for Health Promotion/Disease Prevention. Drawing on the extensive resources of the Schools of Dentistry, Medicine, Nursing, Pharmacy and Public Health, the Center will design, develop, test, and evaluate a wide range of programs of health promotion and disease prevention and it will participate in the education of health professionals for these programs. The director must have substantial administrative and research experience in health promotion/disease prevention and be qualified for tenure-track academic appointment at the associate or full professor level in an appropriate department of one of the five schools involved. *The University of North Carolina at Chapel Hill is an Affirmative Action/Equal Opportunity Employer and encourages women and minority group members to identify themselves voluntarily.* Send application and curriculum vitae to: **Dr. Harry M. Bohannon, 310 Brauer Hall 209H, Chapel Hill, N.C. 27514.** Applications close 15 March 1985.

## **PSYCHIATRIST-IN-CHIEF**

*Boston's Beth Israel Hospital  
Professor of Psychiatry,  
Harvard Medical School*

Position accountable to the Board of Trustees of the Hospital through its President for management of this nationally known psychiatric service which includes a 15-bed inpatient, short-term diagnostic and referral unit, an ambulatory service of 20,000 annual visits, an extensive consultation-liaison service relating to the other 445 adult beds of this major teaching hospital, a 24-hour emergency unit service, 6 residents in each of 3 years, and 10 psychology interns, and accountable to the Dean of Harvard Medical School for the related scholarly activities of teaching and research. The successful candidate will also engage in multi-disciplinary activities with other clinical departments including social service and nursing, as well as participate in overall institutional strategic planning with hospital administration. You will be expected to create a department of balance, not only with solid research juxtaposed with teaching, clinical practice and sound administration, but with a variety of approaches well integrated with the department's strong tradition of psychoanalytic psychiatry in the general hospital.

Applicants must be eligible to practice medicine in Massachusetts.

Applications and nominations, including a curriculum vitae with bibliography should be sent to: Harold F. Dvorak, M.D., Chairman, Search Committee on Psychiatry, Beth Israel Hospital, 330 Brookline Avenue, Boston, MA 02215. Deadline for applications is March 1, 1985.



**Beth Israel Hospital**

330 Brookline Avenue, Boston, MA 02215

An Equal Opportunity Employer.

## **RESEARCH SCIENTIST CLINICAL LABORATORIES**

**The Upjohn Company**, a leader in the worldwide research, production and marketing of pharmaceuticals, has a Research Scientist opening in its Clinical Research Laboratories. These laboratories determine the safety and efficacy of the pharmaceutical products being evaluated in Upjohn's worldwide clinical research programs. This Scientist will design, implement, and interpret clinical assay and clinical methodology research and will evaluate laboratory instrumentation.

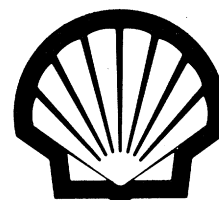
The position requires a Ph.D. in biological sciences, experimental pathology, or biochemistry with one or more years of experience in clinical laboratory operations and methodology research and development. Experience in tissue culture, antibody production and related biological techniques is highly desirable. Excellent verbal and written communication skills are required.

**Upjohn** offers a stimulating research environment, competitive salary commensurate with experience, and an outstanding benefits package. **For confidential consideration, send a current c.v. and resume, list of publications, names and addresses of references, and graduate transcripts (if appropriate) to: PhD Employment Representative, Department 16002G, The Upjohn Company, 7000 Portage Road, Kalamazoo, MI 49001.**

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## **Exploratory Entomologist**

Outstanding opportunity for established research professional at Shell's Biological Sciences Research Center in California.

### **Qualifications**

- Ph. D. in Entomology, Biochemistry, or a closely related discipline.
- Strong professional training and demonstrated practical experience in insecticide toxicology and insect physiology or biochemistry.
- Strong interest in insects and their impact on agriculture.

### **Responsibilities**

- Design and implement interdisciplinary exploratory research programs in insecticide toxicology, insect physiology and biochemistry for the discovery of new methods of control.
- Work closely with Chemists and Biologists on evaluating insect control methods.
- Train and supervise laboratory technicians.

The position offers competitive salary and excellent benefits.

Applicants should be U.S. citizens or have a permanent resident visa.

Interested applicants should send a résumé, in confidence, to:

Manager-Employee Relations  
Shell Development Company  
Biological Sciences Research Center  
P.O. Box 4248  
Modesto, California 95352

**Shell Development Company**

An Equal Opportunity Employer M/F



## Assistant Resident Director Southwestern Research Station of the American Museum of Natural History

The Southwestern Research Station, a year-round biological station in the Chiricahua Mountains of Southeastern Arizona near Portal, has an opening for an Assistant Resident Director starting on or about March 1, 1985. Reporting to the Resident Director, the Assistant Resident Director will be expected to learn the operation and management of the Station from the ground up. This includes handling a wide range of operational responsibilities such as: 1) office management, including recordkeeping and guest registration; 2) management and scheduling of volunteers; 3) shopping for the Station's supplies; 4) overseeing and occasionally participating in cooking and in cleaning housing units, the main house, laboratory and swimming pool; and 5) when necessary, assisting the foreman in maintaining the physical plant and grounds. Related responsibilities may be assigned.

In addition, the Assistant Resident Director must perform the important function of relating to and assisting the researchers and students. As a representative of the Station, he/she must also take steps to interact with local residents to create a climate of understanding between them and the Station's employees and guests. The Assistant Resident Director may carry on his/her own research program so long as it does not interfere with station duties.

Candidates must have a minimum of a BA/BS degree in the biological sciences, with a strong background in field biology and an interest in natural history. They should have experience that will demonstrate the ability to effectively manage, operate and promote the Station. Candidates must have or be able to learn quickly such skills as driving standard transmission vehicles, typing and cooking, and they must be willing and able to adapt to changing schedules and variable workloads as demanded by Station visitations.

The position consists of 40 hours per week, offers free room and board, excellent benefits and a starting salary dependent upon qualifications. Candidates should forward a resume, along with salary requirements to:

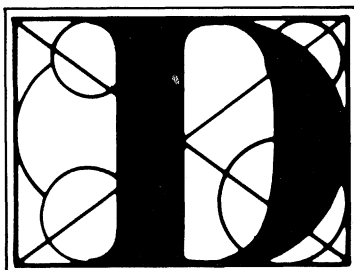


**Jerome Williams  
Personnel Department  
American Museum  
of Natural History**

**Central Park West at 79th Street  
New York, NY 10024**

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## Infectious and Neoplastic Disease Research



What will you  
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At Lederle Laboratories we're putting research to work. We are actively involved in the discovery and development of new pharmaceuticals to treat major diseases and deficiencies. Currently we have important work for individuals who will participate in the areas of purification and characterization of enzymes involved in antibiotic biosynthesis and the development of gene cloning techniques in antibiotic-producing microorganisms.

### **Post-Doctoral Research Fellow**

The successful candidate for this fellowship will have attained a Ph.D. in Biochemistry, Genetics, or Molecular Biology and will have advanced training in the isolation and characterization of enzymes.

### **Molecular Biologist**

This opportunity will require an M.S. in a Life Science (Biochemistry, Genetics, Molecular Biology) with demonstrated skills in host-vector development, protoplast formation and regeneration, and mutagenesis and screening. Industrial experience, particularly with gram-positive organisms is a plus, but not essential.

At Lederle Laboratories, you'll discover a stimulating, highly professional state-of-the-art environment in beautiful Rockland County, just 35 miles from New York City. And, we provide a highly competitive compensation and benefits package, including a 401K savings plan option.

For immediate consideration, forward your resume, including salary requirements, in confidence to: Mrs. Nancy Levine, Professional Employment Coordinator, Lederle Laboratories, American Cyanamid Company, Medical Research Division, Pearl River, New York 10965. An Equal Opportunity Employer m/f



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Since 1906**

## POSITIONS OPEN

### CURATOR POSITION IN VASCULAR PLANT SYSTEMATICS

**SYSTEMATIC BOTANIST:** California Academy of Sciences, Golden Gate Park, San Francisco, California 94118. Curator-level position in the Department of Botany, to begin 1 September 1985. Qualifications include a Ph.D., demonstrated ability to conduct collection oriented research in vascular plant systematics, and experience with curation and development of a major U.S. herbarium. Salary and rank depend on experience and qualifications. Send curriculum vitae, description of future research plans, reprints of three most significant publications, and names of three references by 1 May 1985 to: **Dr. Dennis E. Breedlove**, *An Equal Opportunity Employer*.

**DEVELOPMENTAL NEUROSCIENTIST.** The University of Rochester, Department of Psychology, anticipates filling, in either 1985 or 1986, a tenure-track position at the assistant professor level in the general area of developmental neuroscience. Applicants must have at least 2 years of postdoctoral training. The appointee is expected to develop a strong research program, to teach in the interdepartmental B.S. program in neurosciences, and to teach and supervise students at the graduate level. Opportunities exist within the Psychology Department for interactions with colleagues working in several areas of biological and behavioral development. In addition, extensive interactions are available with other neuroscientists in the School of Medicine and Dentistry, which is within close proximity to the Psychology Building. Send current curriculum vitae, reprints of recent publications, and a statement of research goals, and arrange to have three letters of recommendation forwarded by 15 March 1985 to: **Dr. Carol Kellogg**, Department of Psychology, University of Rochester, Rochester, N.Y. 14627. *The University of Rochester is an Equal Opportunity/Affirmative Action Employer.*

### DISTINGUISHED ECOLOGIST COLORADO STATE UNIVERSITY

Applications and nominations are solicited for the newly created position, Distinguished Professor of Ecology. The position is based in the Zoology Department with close ties to the Natural Resource Ecology Laboratory and the interdisciplinary Program for Ecological Studies. We seek an individual with an active research program in any area of ecology who wishes to contribute to the expanding development of ecological studies at the graduate level. Application deadline is 1 March 1985 or until position is filled. Salary and starting date negotiable. Applications, nominations, and letters of inquiry should be sent to:

**Dr. James V. Ward  
Chairman, Search Committee  
Department of Zoology  
Colorado State University  
Fort Collins, Colo. 80523**

*Colorado State University is an Equal Opportunity/Affirmative Action Employer.  
Equal Opportunity Office: 314 Student Services Building.*

**ECOSYSTEM MODELER/SENIOR RESEARCH SCIENTIST.** The Holcomb Research Institute (HRI) seeks a senior scientist experienced in ecosystem modeling to lead transdisciplinary studies, and to expand related HRI program areas into fully integrated ecosystem studies of watersheds and local landscapes. Developing research may include studies of the alteration by acidic deposition of watersheds in the Midwest, research on scaling-up ecosystem process studies from watersheds to regions and climate change/hydrologic/wetland/CO<sub>2</sub> fertilization interactions.

Requirements: Ph.D. in physical or biological sciences; 10 to 15 years of experience in mathematical modeling of soil, hydrologic, chemical, and biological component interactions in watersheds or equivalent systems; record of research productivity, project management, and publication.

Appointment: 15 April or later. Send letter, curriculum vitae, and three names for reference by 1 March to: **Dr. Orle L. Loucks**, Director, Holcomb Research Institute, Butler University, Indianapolis, Indiana 46208. *An Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**ECOLOGISTS.** Three positions to work on long-term interdisciplinary studies on the effects of reactor discharges on lake, creek, river, and floodplain swamp ecosystems. Advanced M.S. or Ph.D. required in fisheries, entomology, algology, or closely related fields. Positions require working on existing programs and offer opportunity for independent research. Send résumé to: **Dr. James O'Hara, Environmental & Chemical Sciences, Inc., Box 1393, Aiken, S.C. 29802.** An Equal Opportunity Employer.

**EDUCATION—ASSISTANT PROFESSOR.** Department of Geology, **UNIVERSITY OF DELAWARE.** Applications are invited for a tenure-track, junior-level assistant professorship in the field of micropaleontology, effective September 1985. A candidate whose research is on foraminifera is preferred, but specialist in other microfossil groups will be considered. Teaching duties would include historical geology, invertebrate paleontology and micropaleontology, as well as intermittent participation in departmental summer field courses. Supervision of the departmental scanning electron microscope facility would probably be assumed after the first year. The Ph.D. degree is required. Qualified applicants should submit curriculum vitae, a statement of research interests, and the names, addresses, and telephone numbers of three referees by 28 February 1985 to: **Search Committee, Department of Geology, UNIVERSITY OF DELAWARE, Newark, Del. 19716.** The University of Delaware is an Equal Opportunity/Affirmative Action Employer.

### ENTOMOLOGIST UTAH STATE UNIVERSITY

Assistant or associate professor, tenure-track 11-month position, to develop a vigorous program in teaching, research, and extension. Research specialty appropriate to general plant sciences, particularly agricultural crops. Ph.D. required; postdoctoral experience preferred. Deadline: 29 March 1985; available 1 July 1985. Résumé, transcripts, letter of professional goals and research plans, and three letters of recommendation to: **W. A. Brindley, Chairman, Entomology Division, Department of Biology, UTAH STATE UNIVERSITY, UMC 53, Logan, Utah 84322.** An Affirmative Action/Equal Opportunity Employer.

### EXPERIMENTAL EQUIPMENT SPECIALIST UNIVERSITY OF ALABAMA AT BIRMINGHAM Physics Department

The Physics Department at the University of Alabama at Birmingham has a position available for an experimental equipment specialist. This position is for an individual who has expertise and experience in the maintenance, installation, servicing, and design of radiofrequency electronics, digital electronics, optical and laser equipment. It is expected that general and preventive maintenance can be performed on the equipment as well as renovation, redesign, and abinitio design and construction. The salary range for this position is \$14,845 to \$22,270. For more information and to apply, contact: **Professor David L. Shealy, Chairman, Physics Department, University of Alabama at Birmingham, Birmingham, Alabama 35294.**

Deadline for receipt of applications is 1 March 1985. The University of Alabama at Birmingham is an Equal Opportunity/Affirmative Action Employer.

### FACULTY POSITION IN METEOROLOGY

Applications are invited for a research faculty position at the rank of associate or full professor in the Division of Meteorology and Physical Oceanography in the Rosenstiel School of Marine and Atmospheric Science of the University of Miami. The rank and salary will be negotiated, depending upon qualifications. The applicant must hold a Ph.D. in atmospheric science, or closely related field, and have a thorough knowledge of tropical meteorology. We are, more specifically, seeking applications from scientists interested in leading and expanding a core group into new areas including observational studies of convective storms and general circulation in the tropics. The successful candidate will be free to pursue an active research program with interaction with graduate students. Applicants should submit curriculum vitae and the names of three references to: **Dr. Roger Lhermitte, Chairman of Search Committee, Rosenstiel School of Marine and Atmospheric Science, University of Miami, 4600 Rickenbacker Causeway, Miami, Florida 33149.**

The University of Miami is a private, independent, international university and is an Equal Opportunity/Affirmative Action Employer.



# Career Growth Opportunities in Light Microscopy.

At Kodak, we have an unsurpassed capability to move among a matrix of technologies, including chemistry, electronics, optics and biosciences... producing many exciting scientific opportunities.

As a result, we have seen tremendous growth in our analytical sciences laboratories supporting manufacturing, research and development. This growth has created openings for experienced light microscopists.

Successful candidates will have a Ph.D. or equivalent experience in analytical chemistry/materials science. A versatile scientist with broad technical knowledge and a strong interest in light microscopy would be considered.

If you're successful, you could soon find yourself working in our multimillion-dollar, state-of-the-science microscopy laboratory, involved in such activities as image processing/analysis, interferometry, critical dimension determination and surface characterization. You would become an essential member of multidisciplinary teams involved in a broad range of projects.

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**So if you are ready to bring us your technical skills, and join in our exciting scientific breakthroughs, send your resume today to: Personnel Resources, Eastman Kodak Company, Dept. DMIC, Rochester, NY 14650.**

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## POSITIONS OPEN

### NEW FACULTY MEMBER

Eastern Virginia Medical School, Department of Biochemistry, is seeking applications for assistant or associate professor. Applicant should be actively carrying out research in regulation of gene expression in eukaryotic cells or membrane biochemistry, using techniques of recombinant DNA, and/or hybridoma technology. Excellent applicants in other areas of modern biochemistry will be considered. Applicant should also have interest in teaching medical and graduate students. Please send curriculum vitae, bibliography, description of research interests, and names and addresses of three references to: **Dr. Karl A. Schellenberg, Department of Biochemistry, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, Virginia 23501. Affirmative Action/Equal Opportunity Employer.**

The University of Michigan Medical School, Department of Radiology, has on occasion open **FACULTY POSITIONS** within the department and its affiliated hospitals. Physicians filling these positions will take part in the programs of patient care, teaching, and research in the Department of Radiology. They will supervise the activities of house officers and aid in the teaching of house officers and medical students. Qualified applicants must be American Board of Radiology-certified or Board-eligible. Previous training or work experience in an academic institution as well as demonstration of previous academic research and teaching experience are desirable. Academic rank will depend on qualifications and experience. Interested applicants should contact: **William Martel, M.D., Chairman, Department of Radiology, The University of Michigan Medical School, Ann Arbor, Michigan 48109. A nondiscriminatory, Affirmative Action Employer.**

**FACULTY POSITIONS IN AGRICULTURAL BIOTECHNOLOGY:** College of Agriculture and Life Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061. These are tenure-track positions in molecular biology with focus upon agriculture and the life sciences, either plant or animal, with basic research and teaching opportunities in areas related to the research expertise of present faculty and staff. Successful candidates will receive appointments in appropriate academic departments. Applications will be received until the positions have been filled, but are encouraged prior to 1 March 1985. Send complete résumé and names of three references to: **Dr. James R. Nichols, Dean, An Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.**

**VALDOSTA STATE COLLEGE, Valdosta, Georgia. HEAD, DEPARTMENT OF BIOLOGY,** Valdosta State College is accepting applications for the position of head, Biology Department, a tenure-track, 12-month appointment carrying the rank of associate or full professor. Assignment includes 1/3 administration, 2/3 teaching. Position to be filled by 1 July 1985. Deadline for applications is 22 February 1985. Ph.D. in the life sciences required. Teaching and administrative experience preferred. *An Affirmative Action/Equal Opportunity Employer.* Send application, current résumé, transcripts, and names, addresses, and telephone numbers of three references to: **E. Edward Sheeley, Ph.D., Department of Biology, Valdosta State College, Valdosta, Ga. 31698.**

**HEAD AND PROFESSOR, DEPARTMENT OF BIOLOGICAL SCIENCES.** The College of Liberal Arts and Sciences at the University of Illinois at Chicago invites applications and nominations for head of the Department of Biological Sciences. Candidates must have a doctoral degree, a distinguished record of scholarly achievement in the biological sciences (including substantial grant support), demonstrable administrative ability, and a commitment to undergraduate and graduate teaching. The successful candidate, who will assume office on 1 September 1985, will be expected to provide leadership in a growing department currently with 39 faculty. The department offers diverse training leading to B.S., M.S., D.A., and Ph.D. degrees. Applications, including curriculum vitae and publications list, and the names, addresses, and telephone numbers of at least four referees, or nominations should be sent to: **Dr. Louise E. Anderson, Chair, Head Search Committee, Department of Biological Sciences (m/c 066), The University of Illinois at Chicago, Box 4348, Chicago, Illinois 60680. Telephone: 312-996-4547.** The position will be open until filled, but in order to be assured of consideration, applications must be received by 1 March 1985. *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### FACULTY POSITIONS IN BIOCHEMICAL SCIENCES

Applications are invited for two tenure-track positions in the Division of Biochemical Sciences, Department of Chemistry, Lehigh University, anticipated to begin 1 September 1985. Rank is at the assistant professor level but unusually qualified applicants at higher levels will be considered. Applicants are expected to participate in teaching undergraduate and graduate courses and to establish a strong independent research program. Research area is open, but preference will be given to areas which involve tissue culture and/or immunochemistry and which complement existing strengths in protein chemistry and enzymology. Applicants should send curriculum vitae, list of publications, brief description of research objectives, and list of three references to: **Dr. Jack A. Alhadeff, Faculty Search Committee, Department of Chemistry, Lehigh University, Bethlehem, Pa. 18015.** Applications received after 1 April 1985 cannot be guaranteed full consideration. *Lehigh University is an Affirmative Action/Equal Opportunity Employer.*

### FACULTY POSITIONS MOLECULAR PHYSIOLOGY

Department of Physiology and Biophysics  
The University of Iowa College of Medicine

We invite applications from individuals with a strong record of innovative research using current strategies of molecular biology and molecular genetics to investigate fundamental mechanisms of regulation and function of the eukaryotic cell. We are particularly interested in individuals using recombinant DNA, nucleic acid hybridization, or gene transfer techniques to study biologically important processes related to hormone action, membrane transport, or CNS function. Please send curriculum vitae, description of research plans, and the names of three references to: **Dr. Richard A. Maurer, Department of Physiology and Biophysics, The University of Iowa, Iowa City, Iowa 52242.**

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

### HISTOLOGY, NEUROANATOMY, AND MICROBIOLOGY LABORATORY INSTRUCTORS

Two full-time laboratory instructors with responsibilities for laboratory instruction in at least two of the above areas. Requirements: master's/Ph.D. degree and demonstrated teaching ability. Candidates should send detailed curriculum vitae, transcripts, and three letters of reference by 1 March 1985 to: **Sister John Karen Frei, O.P., Ph.D., Dean, Division of Biological and Biomedical Sciences, Barry University, Miami Shores, Fla. 33161. An Equal Opportunity Employer.**

### MEDICAL MICROBIOLOGY

Application is invited for a faculty position effective August 1985. Master's Program in Biomedical Sciences requires Ph.D. faculty with a strong commitment toward excellence in teaching. Responsibilities include teaching lecture and laboratory, advising and counseling students. Applicant should have active research interests. Rank and salary open. Candidates should send detailed curriculum vitae, transcripts, and three letters of reference by 1 March 1985 to: **Sister John Karen Frei, O.P., Ph.D., Dean, Division of Biological and Biomedical Sciences, Barry University, Miami Shores, Florida 33161. An Equal Opportunity Employer.**

### MOLECULAR BIOLOGIST

The University of Texas Health Science Center, San Antonio, Department of Medicine, invites applications for a tenure-track faculty position at the assistant or associate professor level to join an active molecular biology group interested in biosynthesis of factors which influence calcium homeostasis. Ph.D. or M.D. degree and postdoctoral experience required. Facilities available to the applicant include a completely equipped molecular biology laboratory. Opportunities exist for collaborative research with other faculty interests in bone cell biology although the applicant is encouraged to pursue an individual program of research. Submit curriculum vitae and brief description of research interests to: **Dr. Gregory R. Mundy, Professor and Head, Division of Endocrinology and Metabolism, University of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, Texas 78284.**

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

## POSITIONS OPEN

**GENETICIST.** Tenure-track assistant professor to begin 25 August 1985 teaching general genetics, freshman biology, and advanced course of choice. Should be familiar with Apple-type microcomputer hardware. Ph.D. and teaching experience required. Send letter stating teaching and research interests (preferably in animal systems), curriculum vitae, reprints, and letters from three references before 28 February 1985 to: **Dr. Richard V. Anderson, Chair, Geneticist Search Committee, Department of Biological Sciences, Western Illinois University (WIU), Macomb, Ill. 61455. WIU is an Affirmative Action/Equal Opportunity Employer. Applications are especially encouraged from women, minorities, and handicapped persons.**

### HEPATIC TRANSPORT

**POSTDOCTORAL POSITION** available for NIH-funded project studying ion transport by liver plasma membrane vesicles. Applicant must have recent Ph.D. and a strong background in membrane transport. Salary support will be provided for 2 years. Send curriculum vitae and names of three references to: **Bennett L. Blitzer, M.D., Director, Liver Study Unit, University of Cincinnati College of Medicine, 231 Bethesda Avenue (Room 6560), Cincinnati, Ohio 45267.**

**IMMUNOGENETICIST.** The University of Massachusetts Medical School announces a tenure-track opening for a molecularly oriented immunogeneticist. Applicants at any level should send curriculum vitae, a short statement of proposed research, and the names of three references to: **Immunogenetics Search Committee, c/o Department of Molecular Genetics and Microbiology, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605. The University of Massachusetts Medical Center is an Equal Opportunity/Affirmative Action Employer. Minority candidates and women are especially encouraged to apply.**

### LEARNING RESOURCES DIRECTOR

The West Virginia School of Osteopathic Medicine (WVSOM) invites applications and nominations for the position of **learning resources director.**

The director of the Learning Resources Center should be an experienced educator, capable of assisting faculty and others in being more effective educational leaders. Background experience should include utilization of learning resources such as library, audio visuals, graphic arts, interactive video, and computer assisted instruction. The director will assist the Dean for Academic Affairs in constructing appropriate means for evaluating academic programs and faculty.

**QUALIFICATIONS:** An earned doctorate, D.O., Ph.D., or Ed.D., experienced in modern instructional methods and faculty counseling, preferably at a medical school. The director need not be a librarian, but should have considerable experience in library management.

**SALARY:** Salary and academic rank (tenure-track) commensurate with experience and credentials.

**APPLICATIONS:** Interested persons are requested to send a letter of application, curriculum vitae, and three letters of reference by 1 March 1985 to:

**Harry P. Kornhiser, D.O.,  
Dean for Academic Affairs  
West Virginia School of Osteopathic Medicine  
400 North Lee Street  
Lewisburg, West Virginia 24901**

*WVSOM is an Affirmative Action/Equal Opportunity Employer.*

### UNIVERSITY OF SASKATCHEWAN COLLEGE OF PHARMACY MASS SPECTROSCOPIST

A mass spectroscopist is required to work with the Drug Metabolism-Drug Disposition Research Group in the College of Pharmacy, University of Saskatchewan. The position involves the operation and routine daily maintenance of a VG Micromass MM16F and 7070EU Mass Spectrometer and associated data system. Familiarity with modern techniques such as positive and negative chemical ionization, fast bombardment, and HPLC/MS would be advantageous.

Salary in accordance with experience. Please apply to:

**Dr. G. McKay  
College of Pharmacy  
University of Saskatchewan  
Saskatoon, Saskatchewan, Canada S7N 0W0**



## PRESIDENT CONSORTIUM FOR SCIENTIFIC COMPUTING, INC.

The Consortium for Scientific Computing is a non-profit corporation formed by 12 major research universities to operate a state-of-the-art supercomputing center to be known as The John von Neumann Center for Scientific Computing. The Center will be located in Princeton, New Jersey and will provide supercomputing facilities for the national academic research community as well as the Consortium institutions.

Its President will serve as chief operating officer and be responsible for planning, directing, and managing the Consortium's activities as well as working with the Consortium's Board of Trustees to initiate the von Neumann Center.

The successful candidate should have a doctorate in science or engineering or an equivalent combination of education and management, extensive experience in information systems management or in the management of a large research group having considerable computer usage, and 3-5 years of experience as a senior administrator. We are seeking an individual who is a polished professional, who has excellent people and communication skills, and who is a doer with consistent results.

Please send your resume to Professor James D. Bruce, Chairman of the CSC Search Committee, Massachusetts Institute of Technology, Room 10-219, 77 Massachusetts Avenue, Cambridge, Massachusetts 02139. (Electronic mail address: JDBruce MIT-MULTICS.ARPA)

The Consortium for Scientific Computing, Inc. is an equal opportunity employer.

Participating Institutions: University of Arizona, Brown University, University of Colorado, Harvard University, Institute for Advanced Study, Massachusetts Institute of Technology, New York University, University of Pennsylvania, Pennsylvania State University, Princeton University, University of Rochester, and Rutgers University.

## ***Gastrointestinal Research Scientist***

G.D. Searle Research and Development Division has an excellent career opportunity for an experienced Gastrointestinal Pharmacologist/Physiologist. The successful candidate will have a Ph.D. in Pharmacology/Physiology, 2 years post-doctoral training and 2-4 years industrial experience. Primary responsibilities include designing and conducting studies using established and new animals models to identify potentially useful agents for treating gastrointestinal disorders. Superior writing and verbal communication skills, as well as prior supervisory responsibility, are required.

Searle R&D is located in north suburban Chicago. We offer excellent compensation, comprehensive benefits and relocation assistance. For prompt, confidential consideration, send your detailed resume to:

Sheila Copeland #7CB-9  
Sr. Employment Counselor  
Searle R&D Division  
4901 Searle Parkway  
Skokie, IL 60077

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# **SEARLE**

# ENGINEER

## **Technology Evaluation Group**

We seek an innovative, creative professional with a breadth of business perspective to explore and analyze commercial opportunities in connection with Corporate Research diversification R&D.

Here you will be responsible to assess the commercial viability of products and processes at the research stage. This includes: researching market needs and pricing relative to competing technology; identifying product/process costs; computing probable economic potential and profitability. Candidate will be called upon to generate new technical/business opportunities from internal and external sources, prepare business/technology plans, and coordinate activities with research staff. The ability to carry out and follow through with development and commercialization of projects as warranted is essential.

The successful candidate must possess at least an MS in Biochemical or Chemical Engineering with related biotechnology education and/or background; an MBA would be helpful. 3-5 years experience in industrial R&D, engineering and manufacturing is required.

Additional qualifications include superior interpersonal and communication skills to interface with staff, management and external organizations. Ideal candidate will have an entrepreneurial flair, with a potential for future venture management.

Join our team of professionals in Naperville, Illinois, located just 30 miles west of Chicago, offering many alternative lifestyles. Selected candidate will enjoy a highly competitive salary and benefits package. Confidentiality is assured when you forward your resume to:



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**AMOCO RESEARCH CENTER**

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Naperville, IL 60566  
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## HARVARD SCHOOL OF PUBLIC HEALTH

### PROFESSORS OF BIOSTATISTICS

Applicants are being sought for two tenured Professorships in Biostatistics in the Department of Biostatistics at the Harvard School of Public Health. One will take a leading role in developing and participating in the biostatistics teaching program in the Department. The other will be concerned with teaching and research in the application of statistical methodology to cancer research and will hold an appointment at the Dana-Farber Cancer Institute as well as in the Department of Biostatistics. Candidates for both positions must have distinguished records of research in biostatistics. These two positions are in addition to the position previously advertised for a Professor of Biostatistics to lead the research and teaching program in biostatistics and the environment. Applicants may indicate if they wish to be considered for more than one of these positions.

Candidates should send curricula vitae, statements of current and future interests, and the names of at least three individuals who would be willing to respond to a request for evaluation to one of the following search committee chairmen:

**Dr. John Cairns, Chairman**  
Search Committee for a Professor of  
Biostatistics (Teaching Program)  
Harvard School of Public Health  
665 Huntington Avenue, Room 709  
Boston, MA 02115 U.S.A.

**Dr. Donald Hornig, Chairman**  
Search Committee for a Professor of  
Biostatistics (Cancer Research)  
Harvard School of Public Health  
665 Huntington Avenue, Room 1308  
Boston, MA 02115 U.S.A.

HARVARD UNIVERSITY IS AN EQUAL OPPORTUNITY EMPLOYER WITH AN AFFIRMATIVE ACTION PROGRAM.



## INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS (ICRISAT)

needs

### PROGRAM LEADER, SORGHUM IMPROVEMENT

To provide scientific and administrative leadership to sorghum improvement under the general supervision of the Director of Research. He will formulate and implement research programs that will meet the program goals set by the Institute. Currently the Sorghum Improvement Program has subprograms in breeding, entomology, pathology, physiology, and microbiology involving 14 scientists. The Program Leader will provide leadership in coordinating sorghum research programs at ICRISAT Center and cooperative programs. He will participate in the overall guidance and management of the Institute, in its global activities, and in fostering appropriate institutional interrelationships.

**Qualifications:** Doctorate in an appropriate discipline with an excellent academic record, proven administrative ability to lead a team of scientists and coordinate interdisciplinary research programs, and ability to speak and write English well are essential. Substantial experience in sorghum research, at least ten years postdoctoral research experience, and ability to speak French desirable.

The appointee will be based at ICRISAT Center, Patancheru, 30 km NW of Hyderabad. Hyderabad offers good access by air to international airports (Bombay, Delhi, Madras, Calcutta) and has good living conditions, recreational facilities, and medical and educational facilities (for children to age 10-12 years).

Send resume and names of three referees within 60 days of this advertisement to **Director General, ICRISAT, Patancheru P.O. 502 324, AP, India.**

## POSITIONS OPEN

**ICHTHYOLOGIST.** The HUNTSMAN MARINE LABORATORY is seeking an experienced ichthyologist at the Ph.D. level. Major responsibilities include the curation of a major zoological collection, identification of all life history stages of fishes found in the Northwestern Atlantic, and administration (personnel supervision, budget, coordination). Development of an independent funded research program and cooperative studies with research scientists from universities and Department of Fisheries & Oceans Canada is expected. Salary is commensurate with experience. Submit curriculum vitae and two letters of reference before 15 March 1985 to: **Executive Director, Huntsman Marine Laboratory, St. Andrews, New Brunswick, Canada E0G 2X0.**

### IMMUNOLOGIST

M.S. or Ph.D. with experience in research on identification, characterization, and isolation of antigens and antibodies of immune reactions in renal diseases and in the field of experimental models for well established academic medical research group. Please send curriculum vitae and references to: **Kurt Lange, M.D., FACP, FACC, Renal Section, Immunology, Lenox Hill Hospital, A University Affiliate of New York Medical College, 100 East 77 Street, New York, N.Y. 10021.**

### INVERTEBRATE PALEONTOLOGIST

Pending final authorization, the Department of Natural Sciences, Florida State Museum, seeks applicants for an assistant curator beginning 1 July 1985. Preference will be given to people involved in Cenozoic research. Applicants must have a Ph.D. and be expected to develop a research program in invertebrate paleontology and curate the invertebrate fossil collection. Teaching opportunities exist. Applicants should send a letter of interest, curriculum vitae, and the names of three references to be received by 15 March 1985 to: **Dr. Elizabeth S. Wing, Search Committee, Florida State Museum, University of Florida, Gainesville, Fla. 32611. Equal Opportunity/Affirmative Action Employer.**

### MOLECULAR CELL BIOLOGISTS

The Department of Cell and Tumor Biology at Roswell Park Memorial Institute in Buffalo, New York, intends to hire two or three outstanding scientists at the junior and/or senior faculty level. We are looking for individuals with demonstrated ability to conduct active research programs in molecular aspects of cell biology, to teach at the graduate level, and to interact productively with colleagues. Salary will be determined by level of experience. Start-up funds are available.

Roswell Park Memorial Institute is the world's oldest cancer research institute. In addition to supporting research into the causes, treatment, and prevention of cancer, the Institute also supports research into various aspects of basic biology. Current research in the Department of Cell and Tumor Biology is devoted to understanding eukaryotic regulatory mechanisms at a molecular level. We are particularly interested in the regulatory roles of nuclear structure, chromatin, specific DNA sequence elements, intracellular and extracellular molecules, and oncogene products.

If interested, please send your curriculum vitae, description of research plans, and the names of three references by 1 March 1985 to: **Dr. Mary Woodworth, Search Committee Chairperson, Department of Cell and Tumor Biology, Roswell Park Memorial Institute, Buffalo, New York 14263. An Equal Opportunity/Affirmative Action Employer.**

### PLANT PHYSIOLOGY/PLANT BIOCHEMISTRY

Assistant Professor

(Advanced rank possible in exceptional circumstances)

Broadly trained applicants with backgrounds in plant physiology/biochemistry are desired. Experience in electron microscopy and histological techniques preferred. Teaching responsibilities will include courses in biochemistry and plant physiology. A 3-year appointment of a tenurable position requiring a Ph.D. degree. Postdoctoral experience desirable. Position available 1 July 1985. Please send curriculum vitae, statement of research/teaching interests, and the names and addresses of three references by 20 February 1985 to: **Dr. H. W. Art, Chairman, Biology Department, Williams College, Williamstown, Mass. 01267.**

An Equal Opportunity/Affirmative Action Employer, Williams College especially welcomes applications from women and minority candidates.

## RESEARCH PHYSICIST OR CHEMIST OR ELECTRONICS ENGINEER

GS-12, \$31,619 to

\$41,105 per annum

(Salary dependent  
upon qualifications)

NRL provides a campus like atmosphere that fosters exchange of new ideas, techniques, and approaches to problems and encourages continuing education and publication of research results.

Take advantage of this unique research opportunity, contact Ms. Pat Hetzler or Ms. Leah Reusche at (202) 767-3030 (call collect) to obtain application forms and information on procedures for applying. All applications must be postmarked by 15 March 1985.

## NAVAL RESEARCH LABORATORY

Civilian Personnel Division • Code 68-098-11.1:LR (S)  
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AN EQUAL OPPORTUNITY EMPLOYER • U.S. CITIZENSHIP REQUIRED

The Electronics Technology Division of the Naval Research Laboratory presents an outstanding opportunity for you to become a member of a superb team of scientists and engineers who conduct research and development for tomorrow's Navy. As a member of the team, you participate in the pursuit of basic research leading to growth of thin film semiconductors. This research centers around a Molecular Beam Epitaxy system dedicated to the growth of Ga As and Al Ga As thin film layers. Specific duties involve sample preparation, substrate and oven controller calibration, dopant calibration and interpretation of optical and transport characterization measurements made on the MBE layers.

## Harvard University Graduate School of Education

Faculty opening for **Developmental Psychologist**, at the senior level (tenured professor or non-tenured associate professor), beginning in September, 1985 or later. Background in cognitive and social development from childhood through adulthood required. Interest in applications to schooling and more broadly to educational practices and policies appropriate.

**Qualifications:** Earned doctorate, publications, evidence of ability to teach graduate students, undertake/supervise research.

**Terms:** Full-time at either tenure professor level or non-tenured associate professor level; non-tenured appointment normally 3-5 year renewable terms.

**Applications Deadline:** March 1, 1985; cover letter; 2 writing samples; curriculum vitae to:

Professor Robert A. LeVine,  
Chairperson, Search Committee,  
Harvard Graduate School of Education,  
13 Appian Way,  
Cambridge, MA 02138.

An affirmative action/equal opportunity employer

## HARVARD UNIVERSITY

## CHAIRMAN DIVISION OF RESEARCH

THE CLEVELAND CLINIC FOUNDATION is a world-renowned center of medical excellence. In our progressive environment, a dedicated and skilled team of physicians and scientists foster an outstanding combination of team spirit and independent vision. We now have an exceptional opportunity for a resourceful professional capable of directing our acclaimed Division of Research.

In this challenging role, you will be charged with providing the leadership necessary to plan and direct a dynamically innovative Program of Research. You will apply your expertise through diverse channels which include providing direction and counsel to a distinguished staff of 44 PhD and/or MD level senior scientists; chairing various Research Committees; representing the Division both internally and externally; and conducting your own research projects.

The background of the successful candidate will include a distinguished record of achievement in clinical and basic scientific research which has led to recognition of individual expertise in more than one specialized field. In addition, the candidate will possess at least 10 years' experience in an administrative/management post which successfully demonstrates sound leadership abilities. An MD or PhD or MD/PhD degree is required.

This prestigious opportunity offers an excellent compensation package. You will also enjoy the combination of cultural, recreational and educational advantages found only in Northeast Ohio. For prompt and confidential consideration, direct your resume to: **Maurice Hanson, MD, THE CLEVELAND CLINIC FOUNDATION, 9500 Euclid Avenue, Cleveland, OH 44106.**

## THE CLEVELAND CLINIC FOUNDATION

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## KING SAUD UNIVERSITY (Formerly University of Riyadh) RIYADH, SAUDI ARABIA COLLEGE OF AGRICULTURE

King Saud University has vacant faculty positions of Professor, Associate Professor, and Assistant Professor for Ph.D. holders and/or holders of academic titles earned at accredited universities who would be employed on contract basis as of commencement of the academic year 1985-86, which begins on July 27, 1985. THE LANGUAGE OF INSTRUCTION AT THE COLLEGE IS ARABIC. THE COLLEGE HAS THE FOLLOWING DEPARTMENTS:

ANIMAL PRODUCTION

PLANT PROTECTION

AGRICULTURAL ENGINEERING

AGRICULTURAL ECONOMICS AND RURAL COMMUNITY

SOIL SCIENCE

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3. Monthly transport allowance.
4. Relocation allowance.
5. End-of-service gratuity.
6. Free medical and dental care covering family.
7. Contribution by University to tuition fees of non-Arabic-speaking children.

Interested academicians are kindly requested to send non-returnable photocopies of their academic diplomas and specialized experience certificates together with their resumes (including lists of their publications and references) and written applications indicating the position applied for and the subjects qualified to teach to:

Dean, College of Agriculture

King Saud University

P. O. Box 2460

Riyadh 11451, Saudi Arabia

Address and telephone number, if available, should also be included so that applicant may be contacted for interview.

and

Ms. Aida Ganim

King Saud University Office

2425 West Loop South, Suite 450

Houston, TX 77027 USA

## POSITIONS OPEN

### MOLECULAR GENETICS POSITION

Applications are invited for a tenure-track faculty position at the level of assistant or associate professor, depending on experience and record, in the general area of eukaryotic molecular genetics.

Applicants must have a strong background in molecular genetics or related areas. Those with postdoctoral experience and expertise with plant nuclear genes, DNA-transformation systems, and/or transposable elements will be given preference. However, other areas of expertise and organisms which may complement, but not duplicate, existing departmental programs will be considered.

The position will involve approximately 75 percent research and 25 percent instruction and is on a 12-month basis (24 days of vacation). Individual will be expected to develop an independent, vigorous, and competitive research program which would complement existing research efforts in the department. In addition, the individual will be expected to organize and teach a graduate level course in a specialized area of molecular genetics, and to participate in other teaching and training activities in the department.

Applications must be received by 15 March 1985. Send curriculum vitae, reprints of refereed publications, three letters of recommendation, and a summary of research and teaching goals to:

**Dr. John G. Scandalios**  
Professor and Head  
Department of Genetics  
North Carolina State University  
Box 7614  
Raleigh, N.C. 27695-7614

*North Carolina State University is an Affirmative Action/Equal Opportunity Employer*

**MOLECULAR GENETICS—ZOOLOGY.** The Department of Zoology at the University of Tennessee-Knoxville invites applications for a tenure-track position in GENETICS at the assistant professor level, beginning 1 September 1985. Applicants must be trained in techniques of eukaryotic molecular genetics. Research interests in developmental or evolutionary genetics are preferred, but no specific area is mandated. Two or more years of postdoctoral experience and a record of research productivity are expected. Applicants should submit curriculum vitae, reprints, and a description of future research goals, and have three or four letters of reference sent by 15 March 1985 to: **Dr. Jeffrey MacCabe**, Department of Zoology, University of Tennessee, Knoxville, Tenn. 37996. *The University of Tennessee is an Equal Opportunity/Affirmative Action Employer.*

### MOLECULAR VIROLOGIST

Ph.D. or equivalent degree with an interest in pathobiology of **HERPES SIMPLEX** latency and reactivation in animal models using in situ hybridization and related techniques. Assistant/associate professor level investigator with demonstrated ability to carry out independent research and postdoctoral candidate is sought for **PERMANENTLY ENDOWED** laboratory at a nonprofit UCLA-affiliated hospital. Competitive salary and benefits based on qualifications. Send curriculum vitae, letter outlining research interests, and names of three references to:

**Anthony B. Nesburn, M.D.**  
Cedars-Sinai Medical Center (RA)  
c/o 8635 West Third Street—Number 390W  
Los Angeles, California 90048

*An Equal Opportunity/Affirmative Action Employer*

**POSTDOCTORAL POSITION** available in *Drosophila* molecular genetics to study the enzymology of DNA repair. Background must include purification and characterization of proteins or recombinant DNA technology, including gene cloning. Send curriculum vitae and names of three references to: **Dr. W. A. Deutsch**, Department of Biochemistry, Louisiana State University (LSU), Baton Rouge, Louisiana 70803. Applications accepted until position is filled. *LSU is an Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** in molecular biology of growth regulation available immediately. Experience in recombinant DNA techniques including library screening, DNA sequencing, and site directed mutagenesis preferred. Due to funding restrictions, applicants must be U.S. citizens or permanent residents. Please send curriculum vitae and names and addresses of three references to: **Dr. R. Stephen Lloyd**, Department of Biochemistry, Vanderbilt University, Nashville, Tenn. 37232.

## POSITIONS OPEN

### MOLECULAR VIROLOGY

Ph.D. with training in molecular virology required (newly qualified or with 1 to 2 years of postdoctoral experience) for research into the molecular biology of human liver viral disease using recombinant DNA and allied technologies with a view to developing vaccines/diagnostics. Experience in immunological techniques would also be desirable but not essential.

Chiron is a leader in the biotechnology field with a proven record of success in several areas including the hepatitis field where an HBV vaccine has been developed from genetically engineered yeast. We now wish to strengthen our team investigating related viral diseases with a view to developing new human vaccines and diagnostics. We offer an attractive working environment close to the major universities of Northern California, salaries and benefits commensurate with experience and qualifications, interaction with an outstanding group of scientific consultants, and an excellent opportunity for personal and professional growth. Send curriculum vitae, including publication list and references, in strict confidence to: **Diana Wyles**, Administrative Assistant, **CHIRON CORPORATION**, 4560 Horton Street, Emeryville, California 94608.

*Chiron Corporation is an Equal Opportunity/Affirmative Action Employer.*

**PHARMACEUTICAL**—Assistant Director of Regulatory Product Registration. Excellent opportunity with successful and growing ethical drug firm. Position responsible for coordination, review, preparation, and submission of regulatory documents to the FDA for prescription and OTC products. Coordinate with various functional areas such as research, product development, medical, and so forth, concerning development of technical information and data to support registration documents; coordinate and respond to FDA inquiries and requests. Requires technical degree such as pharmacy or pharmacology, 5 years of pharmaceutical industry experience in areas such as clinical research, pharm-tox, or biopharmaceutics. Minimum of 3 years of DRA experience preparing A&DAs/NDAs, working knowledge of FDA regulations, and FDA contact experience. Competitive compensation, benefits, and relocation assistance. Based in Columbus, Ohio. Send résumé in confidence to: **Professional Employment, ADRIA LABORATORIES, P.O. Box 16529, Columbus, Ohio 43216.** *An Equal Opportunity Employer, M/F.*

**PHARMACOLOGIST.** Assistant/associate professor, tenure-track position available immediately in the multidisciplinary office of preclinical education. Preference will be given to candidates with postdoctoral experience, a strong commitment to both teaching and research, and those who have active research grants. Responsibilities will include teaching pharmacology to osteopathic medical students and the development of vigorous research program. Please submit curriculum vitae, a statement of professional goals, and three letters of reference by 15 March 1985 to: **Dr. George Brenner**, Pharmacology Search Chairman, The Oklahoma College of Osteopathic Medicine and Surgery, 1111 West 17 Street, Tulsa, Okla. 74107. *Affirmative Action/Equal Opportunity Employer.*

### POSTDOCTORAL POSITION IN STREAM ECOLOGY

Postdoctoral research project available addressing the biogeochemistry of stream ecosystems influenced by the activity of large animals. **Minimum qualifications:** Ph.D. in biological or chemical science. **Desired qualifications:** Ph.D. in biological or chemical science with demonstrated research potential in hydrology, stream ecology, element cycling, and ecosystem productivity, as well as an interest in multidisciplinary collaborative research. **SALARY:** \$22,000. Effective 1 June 1985 for 1 year with possible extension for second year.

Send résumé and names of three references postmarked by 15 March 1985 to:

**Dr. Robert Naiman**  
Associate Director, Water Division  
Natural Resources Research Institute  
University of Minnesota, Duluth  
214 Research Laboratory Building  
2205 East 5 Street  
Duluth, Minn. 55812

*The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

## POSITIONS OPEN

### PLANT CELLULAR GENETICIST

Position available immediately for research scientist at biotechnology company in the Philadelphia area. Minimum requirements include Ph.D. in genetics, postdoctoral experience, and experience with plant somatic cells, haploids, or protoplasts.

Send curriculum vitae and three letters of reference to:

**Dr. David A. Evans**  
DNA Plant Technology Corporation  
2611 Branch Pike  
Cinnaminson, New Jersey 08077

**POSTDOCTORAL POSITIONS** available for research on hemoparasitic diseases (*Anaplasma*, *Babesia*, *Trypanosoma*). Responsibilities will involve cloning, analysis, and expression of genes coding for membrane surface proteins. Prior experience with recombinant DNA techniques, especially using expression vectors, will be an advantage. Please send curriculum vitae to: **Dr. Anthony F. Barbet**, Department of Veterinary Microbiology and Pathology, Washington State University, Pullman, Wash. 99164. *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** is available immediately to study catecholamine interactions with hypothalamic and pituitary hormones. Experience with tissue culture, enzymology or immunochemistry is preferred. Salary commensurate with qualifications. Send résumé, research plans, and names of three references to: **Dr. Nira Ben-Jonathan**, Department of Physiology and Biophysics, Indiana University School of Medicine, Indianapolis, Indiana 46223. *An Equal Opportunity/Affirmative Action Employer*

**POSTDOCTORAL POSITIONS IN REPRODUCTIVE ENDOCRINOLOGY**, available summer 1985 to recent Ph.D.'s and M.D.'s to work with members of the Reproductive Endocrinology Center. Areas of basic and clinical research in reproductive endocrinology include: neuroendocrinology (P. Goldsmith, R. Jaffe, M. Martin, S. Monroe, R. Weiner); hormone structure and action (M. Jacobs, R. Kuhn, H. Papkoff, J. Roberts, P. Sileri); immunology (D. Stites); developmental and cell biology (C. Cunha, D. Friend, D. Fujii, R. Glass). Fellowships are available to U.S. citizens and permanent residents. Send curriculum vitae to: **Dr. Pentti Sileri**, Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco, Calif. 94143. *An Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION**—To study with monoclonal antibodies the physicochemical properties and molecular/cellular function of phytochrome, a morphogenetically active protein. Background in protein chemistry and/or hybridoma technology desirable. Minimum salary: \$17,000. Available spring/summer 1985. Details upon request. Send résumé and names of three references to: **Dr. L. H. Pratt**, Botany Department, University of Georgia, Athens Ga. 30602; telephone: 404-542-3732.

**POSTDOCTORAL POSITION IN NEUROSCIENCE** available immediately. The individual will use immunocytochemical methods to study the synaptic circuitry of defined retinal neurons. Experience with basic morphological and biochemical techniques is desirable. Salary support is available for at least 3 years. Applicants should send curriculum vitae to: **Dr. Christopher Brandon**, Department of Biological Chemistry and Structure, The Chicago Medical School, 3333 Green Bay Road, North Chicago, Illinois 60064.

The Department of Physical Medicine and Rehabilitation, University of Michigan Medical Center, invites applications for an expected **PHYSIATRIC POSITION** from Board-certified or -eligible physiatrists. This position may include participation in inpatient adult and pediatric case management, outpatient clinics, resident and medical student teaching, EMG and consultation programs. Research opportunities are also available. Previous work experience in an academic institution desirable. Salary and academic appointment appropriate to experience and training. Position available July 1985. Send curriculum vitae and two letters of recommendation to: **Theodore M. Cole, M.D.**, Chairman, Department of Physical Medicine and Rehabilitation, University of Michigan Hospital, RM E3117 Box 33, 1405 East Ann Street, Ann Arbor, Michigan 48109-0010. *The University of Michigan is a nondiscriminatory, Affirmative Action Employer.*

**CHAIRPERSON  
PHYSIOLOGY PROGRAM**

The Sophie Davis School of Biomedical Education of The City College of The City University of New York (CUNY) invites applications for the position of **CHAIRPERSON** of the Physiology Program at the rank of associate or full professor. This is a full-time tenure-track position. The appointment will be at a competitive salary commensurate with qualifications. The successful candidate should be an established investigator in an area of physiological research with a strong commitment to medical education and the development of innovative teaching programs. He/she is expected to provide the academic leadership for development of the program, to promote research and scholarly activity, and to enhance the quality of instruction, as well as to provide the necessary organizational and supervisory competencies. Minimum qualifications include a Ph.D. or M.D. degree, a demonstrated record of teaching effectiveness and research, and a background in medical education.

The School is responsible for an innovative 7-year program leading to a combined B.S./M.D. degree. The goals of the School are to train primary-care physicians who will practice superior preventive and therapeutic medical care in underserved urban communities and to provide access to a career in medicine for black and Hispanic students and students of other ethnic backgrounds whose communities have been historically underserved by primary-care physicians.

The position is available 1 September 1985. Letters of application must include curriculum vitae and three references. Applications must be postmarked no later than 31 March 1985 and should be addressed to: **Dr. A. J. Garro, Chairman, Physiology Search Committee,**

**The Sophie Davis School  
of Biomedical Education  
The City College of CUNY  
Convent Avenue at 138th Street  
New York, N.Y. 10031**

*An Equal Opportunity/Affirmative Action Employer*

## Head of Molecular Biology Department

# BIOGEN

Biogen, a rapidly growing biotechnology company with laboratories in the U.S. and Switzerland, has the following position available in our Cambridge facility.

A vacancy exists for the Head of Molecular Biology to direct a staff of 27 people. The position involves significant administrative obligation, as well as scientific responsibilities for planning and evaluating research strategies from conception through production. The position reports to the President, Biogen Research Corp., and administers the molecular biology phases of projects in other departments, as well as the budgeting, personnel, and scientific issues within the Molecular Biology group itself.

The successful candidate must have a strong background in either eukaryotic or prokaryotic molecular biology using recombinant DNA technology, and experience in directing a research group, either in an industrial, university or basic research institute setting.

Biogen offers an excellent compensation and benefits package. Please send your CV and the names of 3 references to: Ms. Nancy Pye, Manager of Human Resources, Dept. MB-5, Biogen Research Corp., 14 Cambridge Center, Cambridge MA 02142. An equal opportunity employer.

## SUMMER 1985 TEN ENVIRONMENTAL SCIENCE AND ENGINEERING FELLOWSHIPS

### Applications Invited

The American Association for the Advancement of Science (AAAS) invites applications for ten environmental science and engineering fellowships available for summer 1985. Postdoctoral to mid-career scientists, engineers, and other appropriate professionals are encouraged to apply. **The deadline for applications is 1 March 1985.** The 10-week appointment is scheduled for 10 June through 16 August 1985. The awards will be announced prior to the end of April 1985.

The persons selected will work closely with the Environmental Protection Agency (EPA), Office of Research and Development, and assist it in identifying and assessing the significance of long-range environmental problems and opportunities. The award consists of a taxable stipend of \$600 per week and a nominal additional amount for temporary relocation expenses and travel in connection with the fellowship.

Each awardee will undertake a detailed, future-oriented research project of mutual interest to the fellow and one of EPA's research or program offices. A project report will be prepared by each fellow at the completion of the summer's work. The selection of projects and research approach will be designed to meet the purpose of the program stated above as well as to fit the fellow's professional goals. Broad areas of research interest within EPA include environmental risk assessment, biological pesticides, acid deposition, mobile source air pollution; oxidants, gases and particles; municipal wastewater and industrial wastes; drinking water; hazardous waste; chemical testing and assessment; pesticides; radiation; and energy.

Candidates are expected to be postdoctoral to mid-career professionals, to be critical thinkers, articulate, adaptable, and able to work with a variety of people from different professional backgrounds. Applicants should have backgrounds in the physical, biological, or behavioral sciences or any field of engineering or any other relevant professional field.

Persons interested in further information and details on selection criteria and requirements should contact: **Patricia S. Curlin, Environmental Science and Engineering Fellows Program, American Association for the Advancement of Science, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036; telephone: 202-467-4310.**

## STATEWIDE DIRECTOR OF MESA

MESA is a \$2-million program that delivers educational services to underrepresented minorities in junior highs, high schools, and universities and colleges at more than 160 locations throughout California. The program is aimed at ensuring that these students successfully prepare for and major in math- and science-related fields. The statewide director of MESA is responsible for the management and coordination of MESA's activities and reports to the director of the Lawrence Hall of Science (LHS) at the University of California, Berkeley, which administers MESA. The statewide director is charged with developing fund-raising, programmatic, and research agendas; supervising senior staff who in turn help to define and implement these agendas; operationalizing policies as outlined by the LHS director; linking MESA with school districts, universities and colleges, elected officials, and corporate donors; developing and writing funding proposals to foundations and agencies; and ensuring that the various facets and levels of day-to-day operation work toward MESA's programmatic objectives.

We are seeking an individual with substantial managerial experience and the ability to operate a multilevel organization with regional field offices and both public and private constituencies. The candidate should be able to exercise a strong leadership and at the same time establish a collegial atmosphere, working smoothly with other senior professionals and coordinating their activities into an effective educational effort. The initial appointment will be for the period of 1 July 1985, or sooner if possible, to 30 June 1986, with renewal based on annual review of performance by the LHS director.

### Qualifications:

- Advanced degree in relevant field. Formal training in management and business desirable.
- Experience in managing complex organizations.
- Experience in working with minority programs preferred.
- Experience in interacting with top executives in education, industry, and government.
- Experience in teaching and/or administration in secondary school or university educational areas preferred.
- Proven fund-raising abilities.
- Strong oral and written communication skills.

Salary range: \$44,800 to \$56,400, dependent upon experience.

Application deadline: Submit letter of application, résumé, and three references before 1 March 1985 to:

**Dr. Marjorie Gardner  
Director, Lawrence Hall of Science  
University of California  
Berkeley, Calif. 94720**

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



## POSITIONS OPEN

**POSTDOCTORAL POSITION IN BIOCHEMICAL TOXICOLOGY.** Position available immediately to study the regulation of mammalian heme biosynthesis and cytochrome P-450-mediated reactions. Research involves enzymology, HPLC, stable isotopes, metal analysis, and in vivo studies. Salary: \$16,000 to \$18,000, depending on experience. Send curriculum vitae and three letters of reference to: **Dr. Alvaro Alvares, c/o Civilian Personnel, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20814-4799.**

**POSTDOCTORAL OR RESEARCH ASSOCIATE**—Immediate opening to work for 2 to 3 years in the area of molecular biology in a reputed Cancer Research Center in New York. Work involves molecular cloning and expression of viral and cellular genes. Should have experience with recombinant DNA techniques. Salary negotiable. Send curriculum vitae and three letters of reference to

Box 21, SCIENCE

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately for 1 to 2 years to work on 1 and 2-D NMR (500 MHz) studies of drug-oligonucleotide complexes and the effect of DNA polymorphism on drug binding using equilibrium and stopped-flow methods. Send curriculum vitae and names of three references to: **Dr. Richard Shafer, Department of Pharmaceutical Chemistry, University of California, San Francisco, Calif. 94143. An Equal Opportunity/Affirmative Action Employer.**

### PROTEIN CHEMIST

Must have several years of experience in purification of proteins and peptides. Competitive salary, based on experience. Send curriculum vitae and references to: **Employment Manager, Human Resources Department, Children's Hospital of San Francisco, 3700 California Street, San Francisco, Calif. 94118.**

Equal Opportunity Employer

## POSITIONS OPEN

### POSTDOCTORAL POSITION FISHERIES SCIENCE/ECOLOGY

Applicants should be recent Ph.D.'s with relevant training and interest in population assessment/dynamics, environmental effects on stock fluctuations, recruitment mechanisms, or population/community energetics. The successful applicant may choose to develop his/her own research program or to work with faculty on existing fisheries and interdisciplinary research programs. Research opportunities on the Chesapeake Bay and its tributaries, or on a broader geographical scale, will be available to the successful candidate. The initial appointment will be for 1 year with a possible second-year renewal. Salary is \$20,000 per year. Applicants should send statement of interest, curriculum vitae, relevant reprints, and names of three references to: **Head of the Laboratory, Chesapeake Biological Laboratory, Center for Environmental and Estuarine Studies, University of Maryland, P.O. Box 38, Solomons, Md. 20688.** Applications received by 1 April 1985 will be assured of full consideration. A decision will be made by 1 May 1985. *The University of Maryland is an Equal Opportunity Institution with respect to both Education and Employment.*

**POSTDOCTORAL POSITION** available immediately in neuropsychopharmacology to study in vitro and in vivo binding of radioligands to CNS monoamine receptors. Work is directed towards the identification of ligands for eventual use with the imaging techniques of PET and SPECT. Experience with receptor-binding techniques and radioiodination desirable. Send curriculum vitae and references:

**Alan Frazer, Ph.D.  
Veterans Administration Medical Center (151 E)  
University and Woodland Avenues  
Philadelphia, Pa. 19104**

### POSTDOCTORAL POSITION

The University of Georgia Marine Institute at Sapelo Island announces a postdoctoral position in marine science. Applications will be accepted in all disciplines of marine science with preference being given to estuarine/nearshore ecology, microbiology, botany, and chemistry. Salary: \$18,000 for 1 year, with possible extension to a second year. Application closing date: 1 April 1985. Apply to: **Chairman, Postdoctoral Search Committee, Marine Institute, Sapelo Island, Ga. 31327.** *The University of Georgia is an Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL RESEARCH ASSOCIATE** position available immediately to study molecular mechanisms of ion transport across epithelial plasma membranes. Research experience with membrane protein isolation or with reconstitution of transport in proteoliposomes preferred. Position offered for up to 4 years at starting annual salary of \$15,000 to \$25,000, depending on qualifications. Potential for extension as nontenure-track faculty member. Send curriculum vitae and three letters of recommendation to:

**Dr. Peter S. Aronson  
Department of Physiology  
Yale University School of Medicine  
P.O. Box 3333  
New Haven, Conn. 06510**

### BIOCHEMICAL/MOLECULAR ENDOCRINOLOGY POSTDOCTORAL RESEARCH ASSOCIATES

These positions are within an interdisciplinary program supported by an NIH training grant. Eleven laboratories offer training in numerous areas of endocrinology; the biochemical areas represented are liver carbohydrate metabolism (J. B. Blair, Ph.D.); stimulus-secretion coupling (F. R. Butcher, Ph.D.); gene expression/recombinant DNA (R. F. Kletzein, Ph.D.); androgen/estrogen action (M. G. Mawhinney, Ph.D.); and hormonal regulation of gene expression/recombinant DNA (Jeannine Strobl, Ph.D.). Positions filled as available, depending on candidate qualifications and need of laboratories involved. Application information and more detailed descriptions of these research programs are available on request from:

**Dr. George A. Hedge  
Professor and Chairman  
Department of Physiology  
West Virginia University Medical Center  
Morgantown, West Virginia 26506-6302  
Equal Opportunity/Affirmative Action Employer**

## CHAIR OF BOTANY

The appointee to the newly created **Chair of Botany** could be expected to assume the duties of Head of the Department at some time in the future. As such he will provide leadership in teaching and research. A wide range of research facilities within the major fields of plant physiology, ecology, systematics and taxonomy, mycology and plant pathology, and hydrobiology are offered.

The Department of Botany is a member of the School of Biology which has five Departments including Biochemistry, Botany, Genetics, Microbiology and Zoology, which run joint courses, including an MSc course work in Biotechnology.

## CHAIR OF ZOOLOGY

The appointee to the **Chair of Zoology** may be required to assume the headship of the Department at some time in the future.

It is the University's concern to make an appointment on the basis of outstanding personal attributes rather than field of interest. An enthusiasm for teaching, a lively interest in research and the ability to cross inter-disciplinary boundaries will be taken into consideration. Leadership in the applicant's field of research will be a requirement for appointment.

Applicants not meeting the requirements for the senior post may be offered appointment at a lower level.

It is the policy of the University not to discriminate on the grounds of sex, race, colour or national origin.

The salary ranges for the above posts per annum:

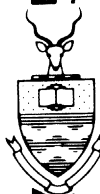
Professor: R34 071 - R39 477

**Benefits:** generous leave ☐ pension ☐ medical aid ☐ housing subsidy (if eligible) ☐ remission of fees ☐ removal, travel and settling-in allowances may be payable ☐ annual bonus.

**For detailed information contact the Deputy Registrar (Academic Staffing),**

**University of the Witwatersrand**

1 Jan Smuts Avenue, Johannesburg 2001, South Africa



## BIOCHEMIST/ ENDOCRINOLOGIST

Battelle, Pacific Northwest Laboratories, located in southeastern Washington state, is seeking applications for a permanent staff position requiring a Ph.D. Biochemist or Endocrinologist with postdoctoral experience. Familiarity with neurochemical techniques and some background in toxicology would be an asset. Demonstrated expertise with instrumental methods including HPLC, spectrophotometry and gas chromatography, as well as a good publication record will be required.

The successful candidate will contribute to an interdisciplinary group studying biological effects of non-ionizing electromagnetic radiation. This position will also require conceptualization and conduct of original research examining electric and magnetic field effects on biological systems.

The Bioelectromagnetics group at Battelle-Northwest is a leader in this field and offers the successful candidate a challenging position with high visibility within the research community. Salary is commensurate with experience. U.S. citizenship is required. Please send resumes to: Loren P. Henderson, Manager - Employment, Battelle - Northwest, P.O. Box 999, Richland, Washington 99352. EEO/M/F.



**Battelle**

Pacific Northwest Laboratories

## Associate Senior Investigator Biomedical Mass Spectrometry

The mass spectrometry facility in the Analytical, Physical and Structural Chemistry Department of Smith Kline & French Laboratories is seeking a Ph.D. in a chemical discipline with experience in the use of mass spectrometers and data interpretation. Principal responsibilities include application of chemical and chromatographic techniques in conjunction with MS for the solution of structural problems, interpretation of data and routine operation and maintenance of mass spectrometers.

Greatest consideration will be given to candidates with experience in capillary GC/MS, HRMS, CI and derivatization chemistry. Familiarity with MS data systems, desorptive ionization techniques (DCI, FAB, FD) and liquid chromatography is also highly desirable.

Our facilities include the latest in high mass range, fast scanning sector and quadrupole instrumentation integrated with a broad range of separation and ionization techniques. In addition, a four sector instrument for MS/MS studies has recently been purchased which will further broaden and extend our analytical capabilities.

Presently located in Philadelphia, the Department will be relocating to a new, state-of-the-art research complex located near Valley Forge. In addition to an excellent compensation, benefits, and relocation package, personal and professional growth are encouraged through interaction with scientists in all fields of chemistry and the biological sciences as well as the publication of research.

Please forward your resume to George P. Kissell, Sr. Employment Consultant, Smith Kline & French Laboratories, 1578 Spring Garden Street, Philadelphia, PA 19101

We are an Equal Opportunity Employer, M/F/H/V

**SK&F**  
A SmithKline Beckman Company

## CHIEF

The Toxicology Research and Testing Program (TRIP) of the National Institute of Environmental Health Sciences, National Toxicology Program, Research Triangle Park, NC is seeking applicants for the Chief, Carcinogenesis and Toxicologic Evaluation Branch. The position has a salary range of \$42,928 to \$65,642.

**The successful candidate will be expected to:**

- Direct and coordinate efforts to initiate testing activities to characterize the biological-toxicological effects from both prechronic and acute, short-term repeated exposure, subchronic and chronic (up to lifetime) exposure to chemicals. Organize and oversee monitoring of these studies which are conducted principally through contracts supplemented by an intramural laboratory capability. There are approximately 200 ongoing tests in this program. The branch includes approximately 35 employees comprised largely of scientific personnel.
- Direct laboratory research with a particular emphasis on methods development and feasibility studies relevant to the development of research protocols for toxicology characterization.
- Play a major role in the formulation of TRIP objectives, plans, policies and criteria.

**Candidates are required to have the following:**

- Ph.D. degree or its equivalent in pharmacology, physiology, toxicology or other allied subjects where training was focused on *in vivo* mammalian toxicology.
- Experience in managing and developing a broad spectrum of toxicology research and testing activities.
- Experience in supervision of a large staff comprised largely of scientific personnel.
- Independent research experience in toxicology, carcinogenesis or pathology.
- A thorough knowledge of animal models used to investigate prechronic and chronic toxic effects of chemicals.
- Excellent written and oral communication skills.
- Relevant publications in scientific journals.

Applicants must be found to be eligible on a Civil Service Register. If interested, please send a curriculum vitae by March 1, 1984, to Ms. Lou Rozier, Personnel Office, (MD 1-01) NIEHS, P.O. Box 12233, Research Triangle Park, NC 27709. Any questions may be directed to Ms. Lou Rozier, area code 919, telephone number 541-7513.

U.S. citizenship required.

**THE NIEHS IS AN EQUAL OPPORTUNITY EMPLOYER.**

## NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

The Cardiac Diseases Branch, Division of Heart and Vascular Diseases, National Heart, Lung, and Blood Institute, is inviting applications for a staff (physician scientist) position in the extramural program to participate with clinician and nonclinician scientists in the implementation of national objectives in cardiology research.

The Cardiac Diseases Branch is responsible for planning and administration of cardiac disease-oriented research in both clinical and fundamental areas. Major targeted programs in ischemic heart disease are the Thrombolysis in Myocardial Infarction Study (TIMI), a multicenter clinical trial of thrombolytic therapy in acute myocardial infarction, the Multicenter Investigation of the Limitation of Infarct Size (MILIS), the Coronary Artery Surgery Study (CASS), the NHLBI Percutaneous Transluminal Coronary Angioplasty Registry, the Specialized Centers of Research in Ischemic Heart Disease (multidisciplinary investigations of fundamental principles and clinical applications in ischemic heart disease), and fundamental studies of sudden cardiac death and lethal arrhythmias.

Applicants must have the M.D. degree or equivalent and experience in research. A background in cardiovascular research is desirable.

Appointment will be made in the federal civil service or the U.S. Public Health Service Commissioned Corps. Salary and benefits will be commensurate with qualifications and method of appointment. A qualifying candidate in the civil service would receive a minimum of \$44,242 and may be eligible for a comparability allowance up to \$10,000 per year.

**Those interested in being considered for this position should submit their Personal Qualifications Statement (SF-171) which is available in Federal Personnel Offices and Federal Job Information Centers, along with a Curriculum Vitae and Bibliography by March 1, 1985 to Ms. Donna Brooks, NHLBI Personnel Office, National Institutes of Health, Public Health Service, 9000 Rockville Pike, Building 31, Room 5A34, Bethesda, MD 20205, or call (301) 496-6477.**

**NIH IS AN EQUAL OPPORTUNITY EMPLOYER**

## POSITIONS OPEN

**POSTDOCTORAL POSITIONS.** Research areas: (i) Developmental regulation of integrated exogenous genes in transgenic mice; (ii) Structure and function of mouse centromeric DNA; (iii) Developmental regulation of  $Ca^{2+}$ -binding protein genes and placental  $Ca^{2+}$  transport; and (iv) Mechanism of  $Ca^{2+}$  regulated cell differentiation in embryonic skeletogenesis. Send curriculum vitae and names of references to: **Dr. C. Lo (areas i and ii)/Dr. R. Tuan (areas iii and iv), Biology Department, University of Pennsylvania, Philadelphia, Pa. 19104.**

### POSTDOCTORAL POSITION

Research associate (postdoctoral) with background in physical oceanography and/or atmospheric sciences and interests in climate variability. Term of appointment: 1 year, renewable for a second year subject to the approval of the Council. Send curriculum vitae and a list of four references to: **Director, Joint Institute for the Study of the Atmosphere and Ocean, AK-40, University of Washington, Seattle, Wash. 98195.**

*An Equal Opportunity/Affirmative Action Employer*

**POSTDOCTORAL RESEARCH ASSOCIATE IN RNA BIOCHEMISTRY.** Position available immediately. Investigate translational control of gene expression in mammalian cells. Study involves higher order structure determination of messenger RNA and ribosomal RNA, and determination of the functional organization of associated proteins. Send résumé to: **Dr. Raymond E. Lockard, Department of Biochemistry, Cornell University Medical College, 1300 York Avenue, New York, N.Y. 10021.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL/RESEARCH ASSOCIATE POSITION** available 1 July 1985 to study the biochemical regulation, histochemical localization, and functions of MELATONIN-synthesizing cells of vertebrate retina. The project involves tissue culture, HPLC assays for hormones and neurotransmitters, enzyme purification and analysis, and immunohistochemistry. Experience in one or more of the above techniques is desirable. Send curriculum vitae and names of three references to: **Dr. P. Michael Iuvone and Dr. Joseph C. Besharse, Emory University School of Medicine, Department of Pharmacology, Atlanta, Ga. 30322.**

*An Affirmative Action/Equal Opportunity Employer*

**POSTDOCTORAL RESEARCH ASSOCIATE.** Perform research in organosilicon chemistry, synthesis of monomers and silicon containing polymers, separation and characterization of new materials by GC/MS, HPLC and gel permeation chromatography, multi-nuclear FT-NMR as well as thermal analysis methods for characterization of polymers. Ph.D. in chemistry, \$1420 per month. Send this ad and curriculum vitae to: **Dr. William P. Weber, Department of Chemistry, University of Southern California, Los Angeles, Calif. 90089-1062.**

### RESEARCH POSITIONS IN MOLECULAR GENETICS

Applications are invited for several full-time research positions in the Molecular Genetics Program, Children's Hospital Research Foundation, and the Department of Pediatrics, University of Cincinnati. Successful candidates will join an established, expanding program of research in human molecular genetics. Recombinant DNA technology is extensively utilized to characterize normal and mutant human genes. There is ample opportunity to interact with other molecular biology groups at both the foundation and the University of Cincinnati Medical School.

- 1) RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW.** Applicant must have an M.D. or Ph.D. with training in molecular genetics, biochemistry, or a related field. Initial appointment is for 2 years with the possibility of renewal.
- 2) RESEARCH ASSISTANT PROFESSOR.** Demonstrated expertise in molecular genetics is required. Previous experience in site-directed mutagenesis or gene transfer to eukaryotic cells is an asset. Development of an independent research program supported by extramural funds is a possibility, although the initial appointment will be in a collaborative group. Term of initial appointment is flexible (typically 3 years) with the possibility of renewal. Salary is negotiable.

Send curriculum vitae, reprints, and names of three references to: **Dr. John Hutton, Children's Hospital Research Foundation, Cincinnati, Ohio 45229.**

## POSITIONS OPEN

**RESEARCH ASSOCIATE;** 40 hours per week, 9 a.m. to 5 p.m.; \$18,400 per year. Requirements: Ph.D. in inorganic chemistry and 1 year of experience as a research associate performing chemical research in the synthesis of polymetallic mixed-valence compounds and use of nuclear magnetic resonance spectroscopy. Duties: Perform research to develop new polymetallic mixed-valence compounds, multi-electron transfer catalysts for organic oxidation, and synthesis of conducting polymers; apply research experience in the synthesis and kinetics of ligand substitution in metal complexes to prepare and test for metal ion catalysis in olefin oxidation, isomerization and exchange, using the specialized techniques of infra-red, ultra-violet, and nuclear magnetic resonance spectra, cyclic voltammetry, and differential plus and controlled potential coulometry.

Send résumé to: **Illinois Job Service, 910 South Michigan Avenue, Room 333, Chicago, Illinois 60605, Attention: M. Jaskowiak, Reference Number 090.227-J.** An employer-paid ad.

### RESEARCH ASSISTANT PLANT GENETIC ENGINEERING

**Agracetus**, a partnership of Cetus Corporation and W. R. Grace & Co., is involved in the application of biotechnology to agriculture. We are developing genetically engineered plants that should increase the vigor and yield of major field crops. To continue to meet our sophisticated new challenges, we seek an innovative and self-motivated individual to join our energetic interdisciplinary research group. Position requires an individual with a M.S. degree in plant science with strong emphasis in molecular biology, cellular biology, and biochemistry. Several years of experience in a dynamic laboratory are essential.

We offer a competitive salary, a comprehensive benefits package, and advancement opportunity. Please send your detailed résumé and salary history to:

**Personnel Department, Agracetus  
8520 University Green, Middleton, Wis. 53562  
We are an Equal Opportunity/Affirmative  
Action Employer**

**VETERINARY MEDICINE.** The University of Pennsylvania is inviting applications and nominations for the Chair of the Department of Clinical Studies (New Bolton Center) in the School of Veterinary Medicine. Duties are the fostering of creative scholarship, teaching and clinical training, and leadership of the faculty not only in traditional university pursuits but also in the operation of a major teaching hospital. New Bolton Center is the large animal facility for the University of Pennsylvania School of Veterinary Medicine. The center serves as one of the nation's major veterinary medical referral centers for large animals. This chair offers an unexcelled opportunity for academic leadership in clinical veterinary medicine. Nominations may be informal. Applications should include curriculum vitae and the names of three referees. Communications should be addressed by 1 May 1985 to: **Dr. Robert J. Eckroade, School of Veterinary Medicine, University of Pennsylvania, 382 West Street Road, Kennett Square, Pennsylvania 19348.**

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

### CENTRAL AMERICAN WILDLIFE POSITION.

Applications are invited for a new position, under a joint program of World Wildlife Fund-U.S. and the U.S. Fish and Wildlife Service, with responsibility for developing and coordinating a wildlife management and training program in Central America and the Dominican Republic. The position will be based in Costa Rica. The person will work closely with wildlife institutions in the seven-country region in developing wildlife short courses and model management projects, and in integrating at the regional level a proposed master's program in wildlife at Costa Rica's Universidad Nacional Agraria. Candidates should have at least a master's degree in wildlife biology or related field, 2 years of work experience in Latin America, including substantial work with natural resource management agencies, be fluent in Spanish and English, and have a demonstrated ability to write effectively and work cooperatively with people. Position commences no later than 1 August 1985, and sooner if possible, and is for 1 year with possibility of renewal. Salary is negotiable. Send curriculum vitae and names of three references by 30 March to: **Dr. Curtis Freese, World Wildlife Fund-U.S., 1601 Connecticut Avenue, NW, Washington, D.C. 20009.**

## POSITIONS OPEN

### PROFESSORIAL POSITION MICROBIOLOGY

The Sophie Davis School of Biomedical Education of The City College of The City University of New York (CUNY) invites applications for an appointment to a 12-month, tenure-track position. The appointment will be at a rank and salary commensurate with qualifications. The successful candidate for this position should have a Ph.D. or M.D. degree and at least 2 years of postdoctoral research experience and a commitment to developing innovative teaching programs in the areas of medical microbiology/infectious diseases. Research in microbial genetics, regulation of gene expression of mechanisms of chemical carcinogenesis would complement existing research programs.

The School is responsible for an innovative 7-year program leading to a combined B.S./M.D. degree. The goals of the School are to train primary care physicians who will practice superior preventive and therapeutic medical care in underserved urban communities and to provide access to a career in medicine for Black and Hispanic students and students of other ethnic backgrounds whose communities have been historically underserved by primary care physicians.

The position is available immediately. Letters of application must include curriculum vitae and three references. Applications must be postmarked no later than 31 March 1985 and should be addressed to:

**Dr. A. J. Garro, Program Director of Microbiology  
The Sophie Davis School of Biomedical Education  
The City College of CUNY  
Convent Avenue at 138th Street  
New York, N.Y. 10031**

*An Equal Opportunity/Affirmative Action Employer*

### SENIOR UNIVERSITY RESEARCH PROFESSORSHIPS

#### NORTH CAROLINA STATE UNIVERSITY RALEIGH

Nominations and applications are invited for three outstanding senior-level university research professorships established to enhance the university's thrust in biotechnology. A university research professorship in each of the following three areas of research expertise is available: Molecular mammalian genetics, molecular plant physiology, and molecular immunology. The positions are to begin during 1985. The new faculty will be affiliated with appropriate departments, and each will be expected to provide a leadership role in his or her area of expertise and to help develop programs of excellence in research and training. Salaries and research support for these special professorships are competitive nationally. Letters of inquiry, as well as nominations, are welcomed. Applications, including three letters of reference, should be submitted by 30 March 1985. Submit applications, nominations, and requests for additional information to: **Dr. Frank B. Armstrong, Chairman, Faculty Recruitment Committee, 1 Patterson Hall, Box 7601, North Carolina State University, Raleigh, North Carolina 27695-7601.**

*North Carolina State University is an Equal Opportunity/Affirmative Action Employer.*

**STAFF SCIENTIST**—Research and development in isothermal forging of high technology ceramics for intermediate and high temperature structure applications. Design, control, and process the microstructure of ceramic materials, with particular attention to the grain size and the presence of second phases in order to enable the materials to be deformed with large ductilities. The deformation properties of the materials will then be used to design processes which can be used to form ceramic deformation process. Ph.D. in materials science and engineering. At least 2 years of experience, either academic or practical, or a combination of the two, in: research experience in microstructure analysis, processing and large deformations at high temperature in structural ceramics; experience with structural ceramics such as silicon-nitride, alumina, spinels, and zirconia; expertise with structure and microanalytical tools like scanning electron microscopy, transmission electron microscopy, electron microprobe, and x-ray diffraction analysis. Forty hours per week; \$752 per week. Send résumé to: **Edgar R. Seydel, Business and Technical Manager, Jupiter Technologies, 187 Langmuir Laboratory, Cornell Industrial Research Park, Brown Road, Ithaca, N.Y. 14850.**

## POSITIONS OPEN

### POSTDOCTORAL RESEARCH ASSOCIATE

Postdoctoral research associate position is immediately available to investigate translational regulation of the mRNA stored in cytoplasmic mRNA-protein complexes. Heavy emphasis will be placed on determination of the sequences of protein-binding sites on mRNA and studies on the effect of bound proteins on conformational changes of mRNA. Current techniques such as molecular cloning, nucleic acid sequencing, and hybridization will be used. The recent papers on the related subject appeared in *Anal. Biochem.* 126, 231 (1982), *JBC* 258, 3991 (1983), and *Nucl. Acid Res.* 12, 5693 (1984). Send curriculum vitae and letters of recommendation to: Dr. C.-B. Chae, Department of Biochemistry, University of North Carolina, Chapel Hill, N.C. 27514. Equal Opportunity/Affirmative Action Employer.

### RESEARCH IN BIOCHEMISTRY THE UNIVERSITY OF CALGARY

The University Biochemistry Group that comprises members of the Faculties of Medicine and Science offers an interdisciplinary environment for graduate and postdoctoral research in biochemistry, molecular biology, and biotechnology. Highly qualified students with training in biochemistry, chemistry, biology, or related disciplines may be admitted to programs leading to the M.Sc. and Ph.D. degrees. Research/teaching assistantships (\$8,775 to \$12,000 per year) are available from the university. Studentships (\$12,000 per year plus \$2,500 research allowance) and postdoctoral fellowships (\$22,000 per year plus \$5,000 research allowance) are available from the Alberta Heritage Foundation for Medical Research and may be applied for via the University of Calgary. Interested individuals should send curriculum vitae, which includes courses taken and grades obtained, and a statement of research interests to:

Dr. F. F. Snyder, Chairman  
Graduate Studies Committee  
University Biochemistry Group  
The University of Calgary  
2500 University Drive, NW  
Calgary, Alberta, Canada T2N 1N4

## POSITIONS OPEN

**QUANTITATIVE WILDLIFE AND FISHERIES BIOLOGIST**; 9 months, tenure track as assistant/associate professor, \$30,748 to \$42,416 for 9 months, depending on experience. Start 25 August 1985. Requires Ph.D. and some university/college teaching experience. Prefer experience with exploited or managed populations of mammals, birds, and/or fish as well as professional-level experience with vertebrate management agencies or programs. Duties: teaching, research, public service in applied quantitative vertebrate ecology. Send résumé, statement of interests, and three letters of reference to: F. C. Dean, Chairman, Search Committee, 211 Irving Building, University of Alaska, Fairbanks, Alaska 99701. Telephone: 907-474-7672. Application deadline 15 March 1985. *The University of Alaska is an Equal Opportunity/Affirmative Action Employer and Educational Institution.*

### ECOGEN INC.

Ecogen Inc., a growing biotechnology company focusing on development of novel microbial pesticides, has immediate openings for **SENIOR PROFESSIONAL PERSONNEL** in these areas of product development:

- 1) Molecular genetics/gene cloning and sequencing,
- 2) Fermentation technology/bioprocess engineering,
- 3) Protein chemistry/immunology, and
- 4) Insect physiology/biochemistry.

Candidates should have strong academic training in their respective areas and postacademic experience related to microbial pathogens of insects or plants. Individuals having managerial experience in coordinating group efforts will be given preference.

Send complete résumé with names and telephone numbers of three professional references to: Dr. Bruce C. Carlton, Vice President, Research and Development, Ecogen Inc., P.O. Box 6818, Lawrenceville, N.J. 08648.

Closing date for receipt of applications is 15 March 1985.

## POSITIONS OPEN

### RESEARCH ASSISTANT/ASSOCIATE PROFESSOR

We seek a **NEUROSCIENTIST** with a minimum of 2 years of postdoctoral experience. The appointee must possess expertise in receptor studies, enzymology, and behavioral measures of psychoactive drug effects. The position, available immediately, requires strong administrative, managerial, and interpersonal skills, in order to effectively direct postdoctoral research associates and technicians. The incumbent would work in close collaboration with senior scientists in Tokyo, the NIH, and this institution. A résumé documenting background and experience and three letters of reference should reach us by 22 February 1985 for early consideration. Write to: C. Schon, Business Manager, University of Illinois College of Medicine—Rockford, 1601 Parkview Avenue, Rockford, Illinois 61107.

*The University of Illinois, College of Medicine, is an Equal Opportunity/Affirmative Action Employer.*

American Red Cross seeks **TECHNOLOGIST** for its hybridoma laboratory. B.S. degree in biology/chemistry and hands-on experience in the preparation of monoclonal antibodies required. Salary: \$17,000 to \$26,000, commensurate with experience. Please send résumé and salary history to: American Red Cross, Personnel Administration, Position: Technologist II, 18th and E Streets, NW, Washington, D.C. 20006. An Equal Opportunity Employer, M/F/V/H.

**VISITING SCIENTIST** positions are available for new and established Ph.D.'s and/or M.D.'s in the areas of cell and molecular biology. Some experience in either area is desirable but not essential. Appointments will be made for at least 2 years at an annual salary up to \$25,000, depending on qualifications and experience. Employment will also include liberal fringe benefits. Interested applicants should send curriculum vitae and names of three references to: Dr. Gordon H. Sato, c/o Personnel Office, W. ALTON JONES CELL SCIENCE CENTER, 10 Old Barn Road, Lake Placid, New York 12946.

*An Affirmative Action/Equal Opportunity Employer*

## THE FIRST WORD IN ... ADVANCED MEDICAL RESEARCH

Abbott Laboratories' success has been built on a foundation of advanced medical research and sophisticated product development. In addition to enhancing the quality of health care worldwide, this success has increased our commitment to research, creating exceptional opportunities for research oriented scientists.

## MOLECULAR BIOLOGISTS

Our Molecular Biology Department has created a number of professional positions for Molecular Biologists. Qualified candidates will have a Ph.D. or M.S. in Molecular Biology or related discipline, or a B.S. degree with significant research experience. Experience in cDNA synthesis, cloning and expression in *E. coli* yeast and higher eukaryotic and prokaryotic cell systems is required.

Abbott Laboratories is a \$3.1 billion leader in the health care products industry. Headquartered in an attractive suburban setting 30 miles north of Chicago, we provide excellent salaries and a benefits package that includes profit sharing and stock retirement plan. For consideration, send a resume with salary history, in confidence to: Susan Hart-Wadley/Corporate Placement. Abbott is an Affirmative Action Employer.

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## POSITIONS OPEN

### TRANSLATORS/ABSTRACTORS MEDICINE, BIOTECHNOLOGY, PHARMA- CEUTICAL SCIENCES, CHEMISTRY

Qualified individuals required for premium into-English translations from **JAPANESE, GERMAN, RUSSIAN, CHINESE, or FRENCH** on a free-lance basis. Prerequisites include subject expertise, high output, and ability to meet rush deadlines. Reply, in confidence, with curriculum vitae and other particulars. Box 23, SCIENCE.

### UNIVERSITY OF MASSACHUSETTS/BOSTON

Tenure-track appointment in the Environmental Sciences Program in one of the following specialties: (i) **VIROLOGIST** to work in nearshore and estuarine systems/organisms on viruses and pathogenic organisms; or (ii) **TOXICOLOGIST/COMPARATIVE PHYSIOLOGIST** to work on effects, metabolism, fates of toxic materials with emphasis on shellfish. Ph.D. required. Rank and salary open. Candidate should have a well-developed research program, record of scholarship and funding, and ability to teach through the doctoral level. Environmental Sciences is an interdisciplinary Ph.D. program emphasizing research on Boston Harbor and other estuarine/nearshore environments. Send résumé and cover letter with names of references to: **Search Committee, Environmental Sciences Program, University of Massachusetts, Boston, Mass. 02125**. Applications received by 6 April 1985 will receive priority consideration. Position subject to availability of funds. An *Affirmative Action/Equal Opportunity Employer*.

## GRADUATE STUDY

The Physiology Department offers **GRADUATE WORK AND RESEARCH OPPORTUNITIES** leading to the M.S. and Ph.D. degrees. Specialties include anatomy, biophysics, comparative/mammalian physiology, and pharmacology.

Particular strength in reproductive physiology and biochemistry. Qualified students receive tuition waiver and monthly stipend with teaching/research assistantships or pharmacology fellowship. For information, contact:

Dr. Andrzej Bartke  
Physiology Department  
Southern Illinois University  
Carbondale, Ill. 62901

## CONFERENCE

The New York Academy of Sciences  
Conference on  
**AUTOIMMUNITY—EXPERIMENTAL  
AND CLINICAL ASPECTS**  
17 to 19 June 1985  
Barbizon-Plaza Hotel, New York City

Coming 20 years after a similar conference on this topic sponsored by the Academy, the meeting will review the substantial progress made in the field during the past two decades. Invited speakers will cover the major topics of the conference including the interplay between self-recognition and lymphocyte circuits, idiopathic control, genetic regulation, effector mechanisms, immunoregulatory factors, and new animal models of autoimmune disease. A final session will deal with fresh approaches to the treatment of autoimmune diseases.

There will be two contributed poster sessions. The deadline for submission of abstracts is 22 March 1985. The abstracts should include the name of the author(s), institution, and a 200-word summary of the work to be presented. Send two copies of the abstracts to either: **Dr. Noel Rose, Johns Hopkins University, School of Hygiene, 615 North Wolfe Street, Baltimore, Md. 21205** or **Dr. Robert Schwartz, New England Medical Center, 171 Harrison Avenue, Boston, Mass. 02111**.

Chairs: **Robert S. Schwartz, M.D., New England Medical Center, Boston, Massachusetts**, and **Noel R. Rose, Ph.D., Johns Hopkins University School of Hygiene, Baltimore, Maryland**.

Inquiries should be addressed to: **Ellen Marks, Conference Department, The New York Academy of Sciences, 2 East 63 Street, New York, N.Y. 10021**.

## SYMPOSIUM

### INTERNATIONAL SYMPOSIUM APPLIED LAKE AND WATERSHED MANAGEMENT

A conference on lakes and reservoirs  
13 to 16 November 1985, Lake Geneva, Wisconsin  
Proceedings to be published. Abstracts due 1 March 1985. For further information, contact:

North American Lake Management Society  
P.O. Box 217, Merrifield, Virginia 22116  
Telephone: 202-833-3382

## ANNUAL MEETING

The **AMERICAN MALACOLOGICAL UNION** will hold its **ANNUAL MEETING** on the campus of the University of Rhode Island on 29 July to 3 August 1985. Planned are symposia on molluscan egg capsule and radulae, and ecology of freshwater molluscs; also, contributed paper sessions, a poster session, field trips, exhibits, workshops, and special events by the Boston Malacological Club. For information, contact: **Dr. M. R. Carriker, College of Marine Studies, University of Delaware, Lewes, Del. 19958; telephone: 302-645-4274**.

## ASSISTANTSHIPS

**GRADUATE ASSISTANTSHIPS in MOLECULAR BIOLOGY and BIOCHEMISTRY** at Oregon Graduate Center, Research programs in: microbial and plant metabolism, enzymology, and transport; plant and fungal genetics and molecular genetics; structure and function of metalloproteins. Research assistantships of \$8600 with remission of tuition available to qualified Ph.D. students. Write: **Chairman, Department of Chemical, Biological, and Environmental Sciences, Oregon Graduate Center, 19600 Northwest Walker Road, Beaverton, Ore. 97006**. *Affirmative Action/Equal Opportunity Employer*.

**GRADUATE RESEARCH ASSISTANTSHIPS** in ecology available to Ph.D. candidates for 3 years beginning spring 1984 to study trophic interactions among microbes, protozoans, nematodes, and microarthropods in soil. One position will entail an emphasis on simulation modeling. Annual stipend is \$7400 plus tuition. Send statement of research interests, résumé, and the names of three references to: **Dr. H. W. Hunt, Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, Colo. 80523**.

*Colorado State University is an Equal Opportunity/Affirmative Action Employer. Equal Opportunity Office: 314 Student Services Building, Colorado State University, Fort Collins, Colo. 80523.*

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIP** in soil ecology is available for 3 years beginning spring 1984 to study trophic interactions among microbes, protozoans, nematodes, and microarthropods. The objective of the research is to understand factors controlling the stability and dynamics of detrital food webs. Research experience with soil fauna required. Send statement of research interests, résumé, and the names of three references to: **Dr. H. W. Hunt, Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, Colo. 80523**.

*Colorado State University is an Equal Opportunity/Affirmative Action Employer. Equal Opportunity Office: 314 Student Services Building, Colorado State University, Fort Collins, Colo. 80523.*

### PREDOCTORAL FELLOWSHIPS IN BIOMEDICAL AND PHYSICAL SCIENCES

Physics	Physiology	Molecular Cell Biology
Anatomy	Biochemistry	Computer Sciences
Biology	Oral Biology	Biophysical Sciences
Genetics	Pharmacology	Biomathematics
Chemistry	Biostatistics	Physiological Optics
Pathology	Neurosciences	Biomedical Engineering
Virology	Immunology	Medical Psychology

Well-funded faculty with diverse interests. Good postgraduation placement record. Above average stipends include payment of tuition. Contact: **The Graduate School (A), University of Alabama at Birmingham, Birmingham, Ala. 35294; telephone 205-934-8227**. *Equal Opportunity/Affirmative Action Institution.*

## FELLOWSHIPS

**PATHOBIOLOGY**—Pre- and postdoctoral fellowships in experimental pathology. Wide range of research programs include cell and molecular biology, carcinogenesis, toxicology, infectious disease, immunopathology, and virology. Please forward inquiries to: **Kenneth B. Adler, Ph.D., Department of Pathology, University of Vermont College of Medicine, Burlington, Vermont 05405**.

**POSTDOCTORAL FELLOWSHIP—BIOCHEMISTRY**. A postdoctoral position in the laboratory of Dr. Kenneth Thomas, Biochemistry Department, Merck Institute for Therapeutic Research, is available after 1 January 1985. A Ph.D. recipient in biochemistry is sought either to study the structure and cell biology of a purified protein vascular endothelial cell growth factor or to pursue the purification and characterization of collagenase IV. Experience in either the cell biology of growth factors or protein purification would be useful but candidates with a strong record of productivity in related fields will be seriously considered. Please send résumés to: **Susan R. Jenkins, Personnel Manager, Merck & Co., Inc., P.O. Box 2000, Rahway, New Jersey 07065**. *Equal Opportunity Employer*.

**FOOD SCIENCE AND TECHNOLOGY FELLOWSHIPS AT CORNELL UNIVERSITY**. Fellowships funded by the U.S. Department of Agriculture for doctoral programs in food chemistry, food microbiology, and food processing/engineering with an annual stipend of \$15,000 are available. Persons with an outstanding academic record and a degree in food science, nutrition, chemistry, biochemistry, biology, microbiology, or engineering are encouraged to apply. Write: **Dr. Dennis D. Miller, Department of Food Science, Stocking Hall, Cornell University, Ithaca, N.Y. 14853**. *An Equal Opportunity/Affirmative Action Educator/Employer*.

**POSTDOCTORAL FELLOWSHIPS IN CHEMISTRY OF POLYPEPTIDE HORMONES** (2 or 3 years), beginning July 1985. Opportunities available for Ph.D.'s or M.D.'s in an interdisciplinary group, studying polypeptides of human and animal pituitary glands, using HPLC, gas phase microsequencing, peptide synthesis and GC/LC/mass spectrometry, to isolate, identify structurally, and synthesize hitherto unknown pituitary peptides. Individuals experienced in any of the above are invited to apply. Stipend: \$28,000 per annum plus relocation expenses. Send curriculum vitae and names of three references to:

Dr. A. F. Parlow  
Harbor-UCLA Medical Center  
1000 West Carson Street  
Torrance, Calif. 90509

**POSTDOCTORAL RESEARCH TRAINING FELLOWSHIPS** in developmental psychobiology available for qualified M.D.'s or Ph.D.'s. NIMH-sponsored program includes core curriculum and research opportunities in areas including developmental biochemistry and pharmacology, electrophysiology, cognitive and emotional development, learning disorders, neuromagnetism, behavior and physiology in nonhuman primates, behavioral immunology, and clinical research in infants and children. One-year program with a possible 1-year renewal beginning summer 1985. Apply by 1 March. For information: **Martin Reite, M.D., Department of Psychiatry, Box C268, University of Colorado School of Medicine, Denver, Colorado 80262**. *An Affirmative Action/Equal Opportunity Employer*.

## TRAINING PROGRAMS

The Basic Science Departments (Anatomy, Biochemistry, Microbiology, Pathology, Pharmacology, Physiology), Medical School, University of Minnesota, periodically have openings for **POSTDOCTORAL TRAINING**.

For information about possible openings in these programs, write, specifying department of interest, to:

University of Minnesota Medical School  
Box 293 Mayo Building  
420 Delaware Street, SE  
Minneapolis, Minnesota 55455  
Attention: James C. Nelson

*The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*



## 1985 DISTINGUISHED VISITING SCIENTISTS PROGRAM

### *for research in the laboratories of the U.S. Environmental Protection Agency*

EPA's Office of Research and Development is pleased to announce the opportunity for up to 10 of the world's most distinguished environmental research scientists and engineers to participate in the Agency's research program.

The Distinguished Visiting Scientists Program provides support to internationally eminent scientists and engineers to pursue research in environmentally related fields at EPA laboratories for flexible terms of up to three years on a full or part-time basis. The nature, location, and term of the appointment, as well as salary, travel expenses, and equipment allowance, are negotiable and will be tailored to facilitate the specific research objectives of each successful candidate. Each visiting scientist will be expected to contribute, in a manner best suited to his or her skills, to the advancement of the scientific understanding of public health and environmental problems of concern to the nation.

Please submit by March 1, 1985, a letter of interest, a curriculum vitae, and a brief description of specific research interest to:

**Roger S. Cortesi, Director  
Office of Exploratory Research (RD-675)  
U.S. Environmental Protection Agency  
401 M Street, Southwest  
Washington, DC 20460**

For further information concerning this program, contact Dr. Roger Cortesi, phone 202/382-5750.

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### **KING SAUD UNIVERSITY (formerly University of Riyadh) Riyadh, Saudi Arabia**

The College of Pharmacy, King Saud University, has vacant faculty positions (Professor, Associate Professor, Assistant Professor) for Ph.D. holders and/or holders of academic titles earned at accredited universities who would be employed on contract basis as of commencement of the academic year 1985-1986 which begins on July 27, 1985

The language of instruction at the college is ENGLISH.

The college has the following departments:

Pharmaceutical Chemistry, Pharmacology, Pharmaceutics, Pharmacognosy and Clinical Pharmacy.

Noteworthy benefits:

- Free return air tickets annually for faculty member and family.
- Furnished accommodation or housing and furnishing allowances.
- Monthly transport allowance.
- Relocation allowance.
- End-of-service gratuity.
- Free medical and dental care covering family.
- Contribution by University to tuition fees of non-Arabic-speaking children.

Interested academicians are kindly requested to send non-returnable photocopies of their academic diplomas and specialized experience certificates together with their resumes (including lists of their publications and references) and written applications indicating the position applied for and the subjects the applicant is qualified to teach to the

**Dean of College  
P. O. Box 2457  
Riyadh 11451 Saudi Arabia**

**and**

**Ms. Aida Ganim  
King Saud University Office  
2425 West Loop South, Suite 450  
Houston, TX 77027 USA**

**Please send address and telephone number (if available) so that you may be contacted for interview if selected.**

# PROPOSALS FOR RESEARCH IN DRUG DEVELOPMENT FOR THERAPEUTIC TREATMENT OF NEUROTOXIN POISONING

There is a need to identify therapeutic and prophylactic compounds for treatment of impaired neurological function caused by neurotoxic proteins and other neuroactive biomolecules. An *a priori* requirement for the identification of such compounds is the development of *in vitro* assay systems that are reproducible, amenable to processing large numbers of samples and suitable for use in the screening of potential therapeutic agents.

Program emphasis is on identification of compounds which will ameliorate the effects of neurotoxins that act on central and peripheral receptors for neurotransmitters and neuromodulators, as well as toxins or biological agents that act on neuronal ion channels. Specific areas of interest include:

## ASSAY DEVELOPMENT

*In vitro* assays for the screening of compounds active against postsynaptic neurotoxins.

*In vitro* assays for the screening of compounds active against presynaptic neurotoxins.

*In vitro* assays for the screening of compounds active against neuronal ion channel inhibitors.

## THERAPY

Development and testing of existing assays or models to identify potential therapeutic compounds.

## STRUCTURE/FUNCTION STUDIES

Identification and characterization of the active moieties of neurotoxins, with emphasis on protein neurotoxins. Identification and characterization of host neurotoxin receptors for furthering development of therapeutic measures.

Proposals may be submitted for one or more of the above topics or a specific portion of one topic. A proposer may submit separate proposals on different topics or different proposals on the same topic. The Government does not guarantee an award in each topic area.

In accordance with the Federal Acquisition Regulation (FAR) any contracts awarded under this solicitation may be of any type or combination of types which will promote the best interests of the Government. It is anticipated that multiple-year, incrementally-funded, level-of-effort type, cost reimbursement contracts will be awarded. Each increment will be approximately 12 months. Duration of the contract should be commensurate with the proposed scope of work but in no case shall exceed three years.

## PROPOSAL PREPARATION INSTRUCTIONS AND REQUIREMENTS

Research proposals shall include a table of contents and should cover the points cited below, insofar as they are applicable. TECHNICAL AND COST PROPOSALS SHALL BE SEPARATE DOCUMENTS. THE TECHNICAL PROPOSAL SHALL NOT CONTAIN COST DATA.

### TECHNICAL PROPOSAL CONTENT

a. *Name and Address of Organization.* At least one copy must carry the original signatures of an official authorized to legally bind the organization.

b. *Title and Description of Proposed Research.* Submit a detailed description of the research objectives including a specific scope of work.

c. *Research Involving Human Subjects.* No research involving human subjects will be involved.

d. *Research Involving Animals.* Acknowledgement that conduct and report of the studies shall adhere to the "Guide for the Care and Use of Laboratory Animals," (NIH 78-23, 1978) must be included. Submit a detailed listing of types and numbers of animals required.

e. *Personnel.* Qualifications of the principal investigator and other senior professional personnel and the time each will devote to the research. Level of effort data shall be expressed in man-hours. This breakdown is also necessary for any proposed subcontractor or consultant. This information, to the extent that it is information about an individual, is subject to the requirements of the Privacy Act of 1974 (5 USC 552(a)). The principal purpose and routine use of the information are for the evaluation of the qualifications of those persons who will perform the research. Disclosure of the information is voluntary, but failure to provide such will prevent evaluation of the proposal. Related organizational experience in the research area may also be described.

f. *Facilities and Equipment Available.* Also, specify types of equipment to be purchased.

### BUSINESS PROPOSAL CONTENT

g. *Cost Estimate.* An estimate of the total research project cost with a breakdown of funds by category (direct labor cost, indirect cost, property or

equipment cost, travel cost, publication cost, consultant cost, other direct costs, fee or profit) by year must accompany each proposal and must be submitted on SF 1411 with complete supporting information.

Every effort will be made to protect the confidentiality of the proposal and any evaluations. The submitter may mark the proposal with a legend such as that provided in FAR 52.215-12. Proposals containing a more restrictive legend shall not be considered.

Unnecessarily elaborate brochures or presentations beyond that sufficient to present a complete and effective proposal are not desired.

Any proposal received after the exact time specified for submission of proposals will not be considered unless the circumstances described in FAR 52.215-10 apply.

## CONSIDERATIONS

*Reports.* Quarterly, annual and final progress reports shall be required in accordance with the schedule of any resultant contract. Reprints of any publications resulting from sponsored research shall also be provided to the USAMRAA. Testing data is to be reported essentially as it is obtained.

*Contract Provisions.* Contracts awarded shall contain, where appropriate, detailed special provisions concerning patent rights, rights in technical data and computer software, reporting requirements, equal employment opportunity, care of laboratory animals, use of human subjects, Good Laboratory Practices requirements, procedures for safeguarding proprietary information, acquisition and disposition of equipment, and other provisions required by the FAR.

## METHODS OF SELECTION AND EVALUATION CRITERIA

Proposals will be evaluated first on their relevance to military and program requirements. Those found to be relevant will then be evaluated by a collective discussion conducted by a Source Selection Board composed of scientists knowledgeable in the topic area. Scientific acceptability will be determined by using the criteria listed below:

- Research Objective.* Is it clear, valid, logical and significant?
- Scientific Feasibility.* Are the plans, methods and procedures feasible, clear, valid, adequately referenced and state-of-the-art?
- Quality of Available Facilities and Equipment.* Are they appropriate to accomplish the job? Are safety and biocontainment factors properly considered? If shared with other projects, what are the priorities established for use? If additional facilities and equipment are needed, are those proposed appropriate?
- Investigator Competence.* Has the investigator demonstrated the scientific and administrative capability to effectively conduct the proposed research?
- Safety Considerations.* Is the investigator cognizant of the requirements for and capable of working with any hazardous materials involved? Has the organization agreed to allow storage and use of such materials in its facility?
- Animal Use Consideration.* Are the studies in which animal models are to be used to be conducted in accordance with all applicable laws and regulations? Are all necessary assurances of compliance and certificates provided?

After determination of scientific acceptability, the Source Selection Board will determine the competitive range based on priority of program requirements, scientific acceptability, and cost to complete the contract. Although cost will be a factor in selection, program relevance and scientific acceptability will be more significant factors in selection for contract award. Also, the proposed cost must be realistic and reasonable to be selected for contract award.

Negotiations will be conducted with those contractors in the competitive range, as determined by the factors in the paragraphs above. Final decisions for funding will be made by the USAMRAA based upon those criteria and consideration of duplication of other research and program balance.

The Government may elect to fund several or none of the proposed approaches to the same topic. There is no commitment by the Government to make any awards on any topic, to make a specific number of awards, or to be responsible for any monies expended by the proposer before award of a contract. It should be noted that only a duly appointed Contracting Officer has the authority to enter into a contract on behalf of the U.S. Government.

## SUBMISSION OF PROPOSALS

Ten copies of the complete proposal are required for review and evaluation. Proposals must be received at the address by 4:00 p.m. on 18 March 1985 to:

Commander  
U.S. Army Medical Research Acquisition Activity  
ATTN: SGRD-RMA-RC/DAMD17-85-R-0032 (S. Hejler)  
Fort Detrick, Frederick, MD 21701-5014