

ativity, the alternation of equilibrium and steady-state analyses, which utilize fundamentally different theoretical approaches (since no steady-state analog of a grand partition function exists), is not as didactically useful as it might first appear to be.

Hill repeatedly emphasizes the importance of an explicit introduction of free energies for cooperative interactions into equilibrium constants and rate constants and the superiority of analyses based on the grand partition function over more empirical thermodynamic analyses of cooperative equilibria. The criticism of previous work that is implied by this emphasis is not entirely warranted. The grand partition function is effectively equivalent to the so-called binding polynomial, which has frequently been used to analyze both noncooperative and cooperative binding interactions. Binding polynomials may be directly interpreted as ratios of the total concentration of a species (in all states of ligation) to the concentration of the fully dissociated species. This straightforward chemical interpretation is intuitively appealing and may confer additional insight. Hill demonstrates that the grand partition function provides a direct and elegant route to the analysis of cooperativity and site exclusion in the binding of large ligands to a linear lattice. This derivation is characterized as "much simpler" than the equivalent approach of McGhee and von Hippel, which is based on conditional probabilities and which has been widely utilized for the analysis of ligand-binding to nucleic acids and ligand effects on nucleic acid equilibria. However, each step in the McGhee-von Hippel analysis is intuitively clear, and one gains an understanding of the molecular basis of the contributions to positive and negative cooperativity from an understanding of the derivation.

Hill acknowledges that conventional methods of treating cooperativity in biochemistry have been effective but considers that a more fundamental molecular approach is now warranted. However, many biochemical systems are sufficiently complex that rigorous statistical mechanical treatments, based on detailed molecular models, may not generally be feasible at present. In particular, biochemical systems are characterized by extreme thermodynamic nonideality, as a result of excluded volume effects and preferential (for example, electrostatic) interactions, which cause concentrations to differ significantly from activities and therefore introduce large dependences of apparent equilibrium constants and rate constants (defined on the basis

of total reactant concentrations) on the composition of the solution. Whereas substantial progress is being made with some systems in the analysis of these effects, it remains in general difficult to determine intrinsic equilibrium and kinetic constants for biochemical processes. The use of apparent equilibrium and kinetic constants, and the conventional methods of analysis based on these quantities, will of necessity continue in most cases. The availability of more detailed statistical-molecular approaches such as are presented here should inspire more comprehensive experimental investigations of these systems.

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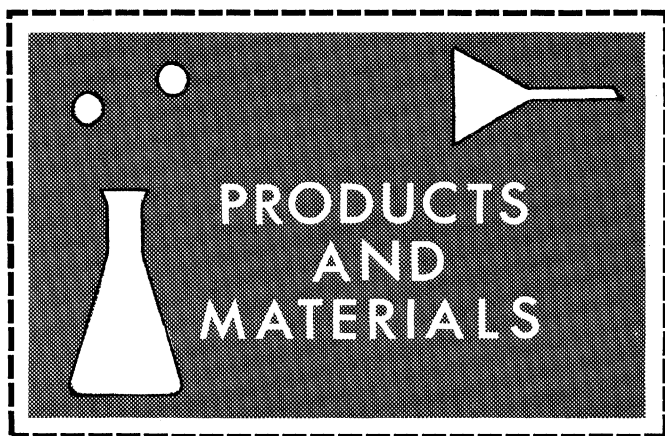
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(Continued on page 1116)



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Literature

Chemiluminescence Generation is a review with 16 references to applications of this methodology. Turner Designs. Circle 607.

IBM PC Enhancement is a handbook for scientists and engineers to enable them to fully realize the potential of their laboratory computers. CyberResearch. Circle 608.

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SCIENCE, VOL. 229

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Survival Skills of the North American Indians. Peter Goodchild. Chicago Review Press, Chicago, 1985. vi, 234 pp., illus. \$16.95; paper, \$9.95.

The Techniques of Modern Structural Geology. Vol. 1, Strain Analysis. John G. Ramsay and Martin I. Huber. Academic Press, Orlando, Fla., 1984. xiv, 307 pp., illus. Paper, \$25.

Ten Applications of Graph Theory. Hansjoachim Walther. Reidel, Boston, 1984. xii, 252 pp., illus. \$39.50. Mathematics and Its Applications (East European Series). Translated from the German edition (1978).

Textbook of Anatomy. W. Henry Hollinshead and Cornelius Rosse. 4th ed. Harper and Row, Philadelphia, 1985. xiv, 1041 pp., illus. \$39.50.

Textbook of Pain. Patrick D. Wall and Ronald Melzack, Eds. Churchill Livingstone (Longman), New York, 1984. xvi, 866 pp., illus. \$105.

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Understanding AIDS. A Comprehensive Guide. Victor Gong, Ed. Rutgers University Press, New Brunswick, N.J., 1985. xxviii, 240 pp. \$20; paper, \$9.95.

Variability in Drug Therapy. Description, Estimation, and Control. Malcolm Rowland, Lewis B. Scheiner, and Jean-Louis Steimer, Eds. Raven, New York, 1985. xxiv, 246 pp., illus. \$49.50. From a workshop, Rome, May 1984.

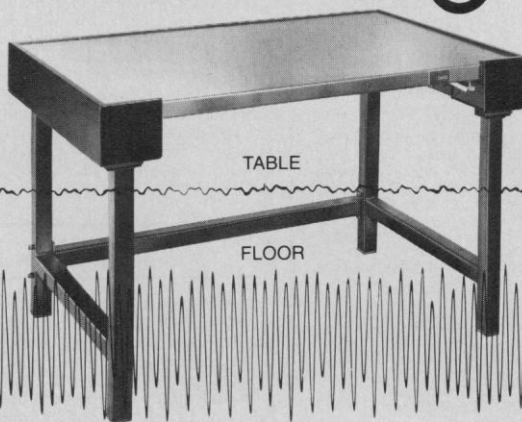
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Vital Lies, Simple Truths. The Psychology of Self-Deception. Daniel Goleman. Simon and Schuster, New York, 1985. 287 pp., illus. \$17.95.

Walking Machines. An Introduction to Legged Robots. D. J. Todd. Chapman and Hall, New York, 1985. 190 pp., illus. \$39.50.

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POSITIONS WANTED

Biochemist. Ph.D. (1986). Clinical chemistry supervisor license. Research experience in protein purification and characterization, tissue culture, interference bioassays. Seeks industry research and development position. Box 193, SCIENCE. 9/13, 20

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Environmental/Soil Chemist. Training in laboratory research on environmental problems associated with livestock wastes, with emphasis on physical chemistry of soil surfaces that control mobility of pollutants in the environment. Pesticide residue analysis of feed, fat, and water. Experienced with GC, GPC, and wet methods. Postdoctoral and supervisory experience. Box 152, SCIENCE. X

Microbiologist. Seeks opportunity to provide results-oriented technical services for research, pharmaceutical, or biological products production. Sixteen years of experience in mass cell culture production, medical research, diagnostic virology, serology, electron microscopy; vaccine development; mammalian, insect, and microcarrier cell culture; laboratory design and safety; public speaking, technical writing, publications; equipment purchase and personnel and resource management. Experience in levels 2 and 3 biocontainment laboratories and has been vaccinated for eastern, western, and Venezuelan equine encephalitis, Rift Valley Fever, and rabies viruses. Bonnie King, 90 South Wadsworth Boulevard, Suite 105443, Lakewood, Colo. 80226. Telephone: 303-236-7950 or 744-9577. 9/13, 20, 27; 10/4

POSITIONS WANTED

Bioorganic Chemist. Ph.D. 1982. Drug metabolism; physical organic, synthetic organic chemistry. Seeks research position in bioorganic/pharmaceutical chemistry. Available December 1985. Box 189, SCIENCE. 9/13, 20, 27

Immunologist. Ph.D. University and industrial research background in cellular and molecular immunology, lymphokines, lymphocyte cell biology, and hybridoma/monoclonal antibody development. Excellent publications and references. Seeking responsible position in university or industry. Box 192, SCIENCE. 9/13, 20, 27

Pharmacologist/Immunologist. Ph.D. 1982. Japanese, 3½ years of postdoctoral work in England and United States. Publications in cellular immunology, microbiology, inflammation, drug screening. Experience in RIA, HPLC, ELISA, tissue culture, microscopy, immunofluorescence, experimental animal systems. Available immediately, Box 157, SCIENCE. X

Science Writer. Ph.D. (education), M.A. (biology). Experienced textbook writer/editor. Seeks temporary or free-lance assignments. Carol Stone, Box 7925, Stanford, Calif. 94305. Telephone: 415-756-0389. X

POSITIONS OPEN

THE PENNSYLVANIA STATE UNIVERSITY. ACADEMIC POSITIONS. Department of Chemical Engineering, level open. A Ph.D. and potential to develop a strong research program leading to national recognition are required. All areas of research will be considered. Duties include teaching undergraduates and graduate courses and direction of M.S. and Ph.D. theses. Application with curriculum vitae, copies of selected publications, a statement of research plans, and names of three references should be sent to: **Professor R. Nagarajan, Chairman of the Search Committee, Box SM-123, 161 Fenske Laboratory, University Park, Pa. 16802.** Applications will be received until 6 January 1986 or until positions are filled. *An Equal Opportunity/Affirmative Action Employer.*

AGRICULTURAL/ENVIRONMENTAL SCIENTIST

Dynamic Corporation is an environmental and engineering research firm with positions available to critically review and analyze published and unpublished pesticide data for their scientific validity and usefulness in meeting regulatory data requirements for pesticide registration. Written reports based on these analyses will be required. M.S. or Ph.D. in pesticide chemistry, plant science, environmental science, chemistry, biochemistry, or soil science is required. Good writing skills are essential. Knowledge of pesticide regulation/registration will be helpful.

To apply, please send résumé in confidence to:

Dynamic Corporation
Personnel Department
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APPLIED VIROLOGY RESEARCH

Virology research position in ongoing virology program. Project leader position open for candidate with a Ph.D. in virology or equivalent (3 to 5 years of experience) to conduct research program in product-oriented, goal-directed effort. Candidates should have experience in developing sound approach to virus growth, purification, and characterization. Must also be well versed in cell culture and virus neutralization methods. We are a major manufacturer located in the Midwest providing excellent salary and benefits programs. Interested persons should submit complete curriculum vitae to:

Box 195, SCIENCE

The Department of Chemistry of the University of Chicago invites applications from outstanding individuals for **ASSISTANT PROFESSOR** (tenure-track) faculty positions in physical and inorganic chemistry. Postdoctoral experience is preferred. Applicants should submit curriculum vitae, a list of publications, a succinct outline of their research plans, and should arrange for three letters of recommendation to be sent to: **Professor Leon M. Stock, Chairman, Department of Chemistry, The University of Chicago, 5735 South Ellis Avenue, Chicago, Illinois 60637.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT DIRECTOR OF ANIMAL CARE, BROWN UNIVERSITY. The Division of Biology and Medicine is seeking applications for the position of assistant director of animal care, available 1 January 1986. The individual will assist the Director of Animal Care in providing clinical care for research animals in affiliated hospitals and campus facilities, reviewing animal research grant proposals, advising investigators and the Animal Research Committee, and supervising animal care personnel. Candidates must hold the D.V.M. or V.M.D. degree from an accredited school of veterinary medicine and have at least 3 to 5 years of experience in laboratory animal medicine. The position offers the opportunity for a concurrent appointment in an academic department, if desired, depending on the qualifications and experience of the applicant. Submit curriculum vitae and have three letters of reference sent by 15 October 1985 to: **Professor Elizabeth H. Leduc, Box G, Brown University, Providence, R.I. 02912.** *Brown University is an Equal Opportunity/Affirmative Action Employer.*

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO (UCSF)—VA MEDICAL CENTER. The Nephrology Section, Department of Medicine, intends to make an appointment at the **ASSISTANT PROFESSOR** level, effective 1 July 1986. Candidate must have M.D., M.D./Ph.D. or equivalent, and at least 3 years of postdoctoral experience. The applicant will be expected to develop an independent research effort in membrane biology at a basic research level (for example, membrane transport, phospholipid metabolism, hormonal response, epithelial cell growth and differentiation, and so forth). To apply, send curriculum vitae, representative publications, and names and addresses of at least three references by 1 December 1985 to: **Dr. David G. Warnock, Chairman, Search Committee, Department of Medicine (111J), San Francisco VA Medical Center, 4150 Clement Street, San Francisco, Calif. 94121.** *UCSF is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

ASSISTANT PROFESSORS

Two faculty positions are available at the Hormel Institute, a basic research unit of the University of Minnesota. The Institute's focus is on the interrelation of the physicochemical behavior, metabolism, and biological functions of lipids and proteins. We seek talented investigators who will establish high quality research programs which will complement those of our current faculty. Preference for one position will be given to a researcher utilizing recombinant DNA techniques. Doctorate and additional research experience required. Please submit curriculum vitae, publication list, a brief description of research interests, and the names of three references to: **Dr. Howard L. Brockman, Chairman, Search Committee, The Hormel Institute, University of Minnesota, 801 16th Avenue, NE, Austin, Minn. 55912.** Telephone: 507-433-8804. Application deadline is 30 October 1985. *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

ANTICIPATED TENURE-TRACK ASSISTANT PROFESSOR OF CHEMISTRY POSITION for fall 1986. The applicant must have a Ph.D. in chemistry or biochemistry, preferably with postdoctoral training, and demonstrated competence in research. The development of a vigorous research program is required. The applicant must be able to participate in the teaching of undergraduate and Ph.D. level courses.

Candidate should submit a résumé, a concise statement of research goals and objectives, and have three letters of reference forwarded to: **Professor David Boykin, Department of Chemistry, Georgia State University, Atlanta, Georgia 30303.** Application deadline: 1 October 1985. *An Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF PHARMACOLOGY faculty position available as early as 1 January 1986 in the Department of Pharmacology, Eastern Virginia Medical School. Applications are invited from individuals who possess the Ph.D. and/or M.D. degree, at least 2 years of postdoctoral experience, and who will develop a vigorous research program in molecular and/or cellular cardiovascular pharmacology. Submit curriculum vitae and names and addresses of three references to: **Search Committee, Department of Pharmacology, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, Va. 23501.**

Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

ASSISTANT PROFESSOR/ASSOCIATE PROFESSOR

Faculty position available 15 October 1985 for cell biochemist interested in epithelial cell regulation in multidisciplinary campus-wide research center with focus on pathobiology. Full-time, research-track position; joint appointments possible in departments reflective of candidate's expertise. Salary, rank dependent on experience. Minimal requirements include Ph.D., M.D./D.D.S. or equivalent; minimum of 2 years of postdoctoral experience. Bacterial genetics and gene technology background helpful. Successful candidate expected to implement vigorous research program and obtain external funding. Send curriculum vitae and three letters of recommendation to: **Chairperson, Faculty Search Committee, Center for Research in Periodontal Diseases and Oral Molecular Biology, University of Illinois at Chicago, 801 South Paulina, Chicago, Ill. 60612.** *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF BIOCHEMISTRY—MOLECULAR BIOLOGY

The Department of Biochemistry and Biophysics at Iowa State University is accepting applications for a tenure-track assistant professorship in **MOLECULAR BIOLOGY**, starting summer or fall 1986. Candidates must have a strong record of research productivity and an interest in teaching graduate and undergraduate students. This position provides an excellent opportunity for development of an independent basic research program in the growing molecular biology and biotechnology research community at Iowa State University. Applications, which should include a résumé, bibliography, and brief description of research plans, must be received by 15 November 1985. Arrange to have three letters of reference sent to:

**Dr. David E. Metzler, Chairman
Faculty Recruitment Committee
Department of Biochemistry & Biophysics
Iowa State University
Ames, Iowa 50011**

YALE UNIVERSITY. The Department of Chemistry invites applications for two tenure-track **ASSISTANT PROFESSOR** positions, effective academic year 1986. We seek outstanding individuals in any field of chemistry. Applications from those whose research interests overlap with the areas of organic or inorganic chemistry and the biological sciences are particularly welcome. Applicants should send curriculum vitae, a statement of research plans, and should arrange for the submission of three letters of recommendation. All materials should be received by 1 December 1985. Send application to: **Professor S. L. Schreiber, Chairman, Search Committee, Department of Chemistry, Yale University, P.O. Box 6666, New Haven, Conn. 06511.** *Yale University is an Equal Opportunity/Affirmative Action Employer.*

YALE UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF HUMAN GENETICS ASSISTANT/ASSOCIATE PROFESSOR MEDICAL GENETICS

Candidates with M.D., U.S. license, and Board-eligibility/certification in clinical genetics sought for tenure-track position to pursue independent research in mammalian genetics and to share the practice and teaching of medical genetics with five other physician-geneticists. Excellent laboratory facilities with majority time available for research pursuits.

Please send curriculum vitae, representative publications, and three letters of recommendation to: **Chairman of the Search Committee, Department of Human Genetics, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510.** *Yale is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT/ASSOCIATE PROFESSOR OF PHYSIOLOGY. Applications are invited for tenure-track appointment in the discipline of renal/cardiovascular physiology. Applicants with Ph.D., postdoctoral experience, and a record of productivity in research should submit curriculum vitae, statement of research goals and support, a statement of teaching experience and abilities in the listed areas, and four letters of reference to: **N. R. Kreisman, Ph.D., Search Committee, Department of Physiology, Tulane University School of Medicine, New Orleans, La. 70112,** by 1 December 1985.

Early application is encouraged.
An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

ASSISTANT PROFESSOR. Applications are invited for a position at the level of assistant professor (tenure-track) in the Department of Chemistry at Stanford University with primary research and teaching interests in inorganic chemistry. Applicants must be strongly motivated toward creative research and have a commitment to teaching undergraduates as well as graduates. In applying, send curriculum vitae, list of publications, a brief statement of research interests (three pages or less) and, in addition, have three letters of recommendation sent to: **Professor John Ross, Chairman, Department of Chemistry, Stanford University, Stanford, California 94305.** *Stanford is committed to Equal Opportunity through Affirmative Action in employment, and we are especially eager to identify minority persons and women with appropriate qualifications.* Applications should be received by 1 November 1985.

ASSISTANT OR ASSOCIATE PROFESSOR—HORTICULTURE. Rutgers—The State University of New Jersey is recruiting for a 70 percent research, 30 percent teaching faculty position at its Fruit Research and Development Center in Cream Ridge, New Jersey. This is a 12-month, tenure-track position that is to be filled by 1 January 1986. In addition to the research and teaching responsibilities, the individual will act as staff member in charge of the 250-acre fruit research farm and new laboratory-office-greenhouse complex. Preference will be given to individuals with pomology experience and whose interests are in conducting applied and basic research in tree fruit culture.

Candidates should submit a letter of intent, curriculum vitae, academic transcripts, and three letters of recommendation to:

**Dr. Paul Eck, Chairman
Pomologist Search Committee
Department of Horticulture and Forestry
Rutgers—The State University
New Brunswick, New Jersey 08903**

Application deadline: 31 October 1985.

Rutgers University is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT/ASSOCIATE PROFESSOR—OCCUPATIONAL HEALTH AND SAFETY. Applications are invited for a tenure-track faculty position to begin 1 January 1986. The successful applicant will participate in the research and graduate educational programs of the Department of Environmental Health Sciences in the School of Public Health. Candidates must have an appropriate doctoral degree and a strong interest in applying their discipline to problems in industrial hygiene and/or safety. Submit curriculum vitae, a statement of teaching and research interests, and the names and addresses of three references no later than 30 October 1985 to: **Dr. Charles E. Feigley, Chairman of Search Committee, Department of Environmental Health Sciences, Benson Room 306, University of South Carolina, Columbia, S.C. 29208.** *The University of South Carolina is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR OF ORGANIC CHEMISTRY, tenure-track. Candidates in all areas of organic chemistry, defined in the broadest sense, will be considered; excellence is the main criterion. Applicants should have the background, motivation, and ability to be a dedicated teacher and to develop a vigorous, productive research program. While it is intended that this position will be filled at the assistant professor level, an appointment at a higher level will be seriously considered. Reply to: **Chairman of Search Committee, Department of Chemistry, 152 Davey Laboratory, Box B, The Pennsylvania State University, University Park, Pa. 16802,** and include detailed curriculum vitae, list of publications, and description of research interests. Also have three letters of reference sent to the above. Closing date for receipt of applications is 1 December 1985. *Affirmative Action/Equal Opportunity Employer.*

ATMOSPHERIC CHEMIST

POSTDOCTORAL POSITION available immediately to work on the Western Atlantic Ocean Experiment (WATOX) which is investigating the atmospheric flux of N and S compounds eastward from North America. Position involves aircraft- and ship-based sampling and analysis of gas and aerosol species. Send résumé and three references to: **Dr. James N. Galloway, Department of Environmental Sciences, Clark Hall, University of Virginia, Charlottesville, Va. 22903.**

POSITIONS OPEN

ASSISTANT PROFESSOR—PLANT MOLECULAR GENETICS

The Department of Forestry, University of Kentucky, invites applications for a tenure-track research and graduate teaching position in an established molecular biology program in the College of Agriculture. Research will be directed at improvement of woody plants through determination, at the molecular level, of genetic structure of populations; identification of genes for stress tolerance, disease resistance, and productivity; and development and application of methods to introduce useful genes into crop trees. Candidates must have the Ph.D. degree in genetics, molecular biology, or biochemistry. Postdoctoral research experience is desirable. Applicants should send letter of application, curriculum vitae, transcripts, and three letters of reference by 15 November 1985 to: **Dr. Bart A. Thielges, Chairman, Department of Forestry, University of Kentucky, Lexington, Kentucky 40546-0073.** *The University of Kentucky is an Equal Opportunity/Affirmative Action Employer.*

NATIONAL SCIENCE FOUNDATION (NSF)

NSF, Division of Cellular Biosciences, is seeking qualified applicants for the position of **ASSISTANT PROGRAM DIRECTOR FOR THE DEVELOPMENTAL BIOLOGY PROGRAM.** This position is excepted from the competitive civil service and will be filled on a permanent basis at the GG-13 level, \$37,599 to \$48,876 per annum. The program focuses on the basic mechanisms underlying development through the life span of animals, plants, and microorganisms. Applicants should have a Ph.D., plus 3 to 4 years of independent research experience beyond the Ph.D. and a broad understanding of current research in the program areas of the division. For details on application procedures, telephone: **Stuart Solomon at 202-357-7840.** For technical information about the position, telephone: **Dr. Bruce L. Uminger, Acting Division Director at 202-357-7905.** *NSF is an Equal Opportunity Employer.*

ASSISTANT RESEARCH BIOLOGIST—Cellular immunologist and protein biochemist with Ph.D. and a minimum of 4 years of postdoctoral experience in immunofluorescence, monoclonal antibody, and cell culture techniques, to carry out studies of the molecular mechanisms of cell motility and cytotoxicity. Apply by 30 September 1985 by sending curriculum vitae and names and addresses of three references to: **Dr. S. J. Singer, Department of Biology, B-022, University of California at San Diego (UCSD), La Jolla, Calif. 92093.** Salary related to rank and step of appointment within the established salary schedule of the UCSD research series.

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

BEHAVIORAL BIOLOGY. The Department of Zoology has a tenure-track position in behavior available beginning September 1986. While persons in any behavioral specialty will be considered, the department is particularly interested in the following behavioral areas: development, ecology, genetics, and neurobiology. Applicants for this position should submit a brief summary of their research, along with their curriculum vitae, and have four letters of reference sent to: **Behavior Search Committee, Department of Zoology, Michigan State University, East Lansing, Mich. 48824.** *Michigan State University is an Equal Opportunity Employer.*

NATIONAL SCIENCE FOUNDATION (NSF)

NSF, Division of Polar Programs, is seeking qualified applicants for the position of **PROGRAM MANAGER, POLAR GLACIOLOGY PROGRAM.** This position will be filled on a permanent basis in either the competitive or excepted service at the GS/GH-15 level, \$52,262 to \$67,940 per annum. In addition to glaciology, the Polar Glaciology Program encompasses glacial geology and some aspects of geophysics, geochemistry, geology, climatology, and paleoclimatology. Applicants should have a Ph.D. in one of these disciplines, plus 6 to 8 years of research experience. A broad general knowledge of one or more of these fields, experience or familiarity with current polar research, and administrative experience are also required. The applicants selected for this position must be able to pass the physical examination required for travel to Antarctica. The position will be opened until filled. For details on application procedures, telephone: **Stuart Solomon at 202-357-7840.** For further technical information, contact: **Dr. Francis S. L. Williamson, Chief Scientist, Division of Polar Programs, telephone: 202-357-7894.** *NSF is an Equal Opportunity Employer.*

**HEAD, DEPARTMENT OF
VETERINARY SCIENCES
DIRECTOR, WYOMING STATE
VETERINARY LABORATORY**

The College of Agriculture, University of Wyoming, invites nominations/applications for the combined position of head of the Department of Veterinary Sciences and director of the Wyoming State Veterinary Laboratory. We are seeking an enthusiastic individual to provide progressive administrative leadership for the diagnostic, research, teaching, and extension functions of the department. The individual should be skilled in communication to facilitate administration of an academic department and interaction with veterinary practitioners, livestock producers, and veterinary regulatory agencies. The head will have the opportunity to conduct research in an area of expertise and contribute to the diagnostic and teaching program of the department as appropriate. The department is housed in a new (1985) 21,000 square foot diagnostic/research complex west of the main Laramie campus. Excellent new equipment, including electron microscopes and a DuPont ACA are available for diagnostic and research functions. Laboratory animal and large animal facilities are on site. Relocation of the USDA, ARS, Arbovirus Laboratory, including development of P3 biocontainment facilities, to the complex in late 1985 will foster collaboration in research and diagnosis of viral diseases of animals. Qualifications include a D.V.M. degree and a Ph.D. or equivalent training and experience, with specialty Board-certification desirable. Veterinary diagnostic, research, practice, and/or extension experience is required. Applicants should submit curriculum vitae and names of three references to: **Dr. Elizabeth S. Williams, Wyoming State Veterinary Laboratory, P.O. Box 950, Laramie, Wyoming 82070; telephone: 307-742-6638.** Application deadline is 15 November 1985 or until a suitable candidate is identified. *The University of Wyoming is an Equal Opportunity/Affirmative Action Institution.*



THE AUSTRALIAN NATIONAL UNIVERSITY invites applications from suitably qualified women and men for appointment to the position of **FELLOW/SENIOR FELLOW IN CANCER BIOLOGY** in the Department of Experimental Pathology, John Curtin School of Medical Research. Cancer research was initiated in the Department of Experimental Pathology in 1982 with research activity concerned with analyzing the biological basis of tumor metastasis and malignancy. The department plans to commit a substantial proportion of its resources to this area and seeks to appoint a fellow or senior fellow to lead this research activity. Preference will be given to applicants with strengths in aspects of cancer cell biology relevant to malignancy and pathogenesis. The current research effort is well developed in the areas of cell biology, somatic cell genetics, and protein chemistry and is expected to incorporate an increasing component of molecular biology. The tumor metastasis and malignancy program will thus provide a focus for the further dissemination of molecular biology techniques into other activities within the department. Further particulars are available on request. Inquiries to: **The Head of Department, Professor P. C. Doherty, FAA. Telephone: (062)492524.** Closing date: 27 September 1985. Reference: JC 8.8.1. Salary will be in accordance with qualifications and experience within the range: fellow, \$30,585 to \$40,975 per annum; senior fellow, \$41,029 to \$47,823 per annum; current exchange rate: A\$1 = U.S.\$71. Appointment as fellow or senior fellow is for an initial period of 5 years with the possibility, following review, of reappointment to retiring age 65. Grants towards travel, assistance with housing, superannuation. Maternity leave is available. The university reserves the right not to make an appointment or to make an appointment by invitation at any time. Prospective applicants should write for further particulars quoting the reference number before submitting applications to: **Patricia M. White, Acting Registrar, GPO Box 4, Canberra, ACT, 2601, Australia.**

The University is an Equal Opportunity Employer.



POSITIONS OPEN

BIOLOGICAL NMR SPECTROSCOPY. Several postdoctoral positions available. Research areas include enzymes mechanisms and protein-DNA interactions. Background in NMR spectroscopy, including use of 2-D NMR methods, essential. Background in biochemistry helpful. Instrumentation available includes a 400 MHz wide-bore spectrometer. Send curriculum vitae and three letters of recommendation to: **Professor William Bachovchin, Department of Biochemistry and Pharmacology, Tufts University School of Medicine, 136 Harrison Avenue, Boston, Mass. 02111.**

BIOMEDICAL PHYSIOLOGIST/IMMUNOLOGIST—Either January or August 1986, assistant professor; salary \$25,000 to \$29,000, dependent on experience and qualifications; to teach undergraduate and graduate courses in human physiology; anatomy and physiology; immunology; and general biology; and have active research interests appropriate for undergraduate and master's programs. Ph.D. required. Send letter of application; résumé; statement of teaching and research goals; and names, addresses, and telephone numbers of three references to: **Dr. Leeds M. Carluccio, Chairman, Biological Sciences Department, CENTRAL CONNECTICUT STATE UNIVERSITY (CCSU), New Britain, Conn. 06050,** by 14 October 1985. *CCSU is an Affirmative Action/Equal Opportunity Employer. Women, minorities, handicapped, and veterans are encouraged to apply.*

CHAIR OF MICROBIOLOGY/IMMUNOLOGY

The School of Medicine and the College of Science and Engineering of Wright State University invite applications and nominations for the position of chair of the Department of Microbiology and Immunology. The candidates should have an M.D., or Ph.D., or both; and have demonstrated leadership and productivity in teaching, research, and academic administration. Those in the areas of immunology and of molecular science are especially sought although candidates from all relevant fields will be considered. The department offers courses at the baccalaureate, graduate, and undergraduate medical school levels, and participates in the Biomedical Sciences Ph.D. Program. The department is part of both the School of Medicine and the College of Sciences and Engineering.

Nominations and applications should be sent to: **Robert Weisman, Ph.D., Chair of Search Committee for M/I Chair, Wright State University, 234 Biological Sciences Building, Dayton, Ohio 45435.** Applications should include curriculum vitae and the names of three references. The closing date for applications is 15 November 1985.

Wright State is an Equal Opportunity/Affirmative Action Employer.

**CHAIRPERSON
DEPARTMENT OF MICROBIOLOGY**

Applications are sought from individuals to chair a new Department of Microbiology at the University of Vermont. This department has commitments in the College of Agriculture and Life Sciences and the College of Medicine. Qualifications: (i) Ph.D., M.D., D.V.M., or equivalent degree; (ii) nationally recognized research in molecular biology; (iii) administrative experience and effectiveness in teaching. Send résumé, including curriculum vitae, representative publications, a statement of research interests and/or proposed research, and names of three references by 15 January 1986 to: **Norman R. Alpert, Ph.D., Chairman, Microbiology Search Committee, University of Vermont, 349 Waterman Building, Burlington, Vermont 05405.** *An Equal Opportunity/Affirmative Action Employer; women, minorities, and disabled individuals are encouraged to apply.*

The Department of Epidemiology and Public Health, Division of Biostatistics, is seeking a **DIRECTOR OF A NEW STATISTICAL CONSULTING UNIT** to serve the Yale University School of Medicine. Applicants are required to have a Ph.D. degree, substantial experience in collaborative research in the biomedical sciences, and administrative expertise in the management of statistical and computer consulting personnel. The successful applicant will be expected to interact with biomedical personnel on a wide variety of projects, including development of new research proposals.

Applications and/or nominations should be accompanied by curriculum vitae and the names of at least three references and sent to: **Dr. Burt Singer, Division Head of Biostatistics, Department of Epidemiology and Public Health, P.O. Box 3333, New Haven, Conn. 06510,** before 15 September 1985. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

**CHAIRPERSON
DEPARTMENT OF IMMUNOLOGY
UNIVERSITY OF WASHINGTON**

The school of medicine invites nominations and applications for the chairmanship of a new Department of Immunology. Criteria for selection will include an outstanding record of basic research in immunology, strong commitment to medical and graduate education, and the vision and academic experience to establish and lead a new department. Applications, including complete curriculum vitae and the names of three persons who will serve as references, should be sent no later than 1 November 1985 to: **Dr. William A. Catterall, Chairman, Immunology Search Committee, Department of Pharmacology, SJ-30, University of Washington, Seattle, Wash. 98195.**

An Equal Opportunity/Affirmative Action Employer

DEVELOPMENTAL BIOLOGIST. The Department of Embryology, Carnegie Institution of Washington, seeks a staff (faculty) member beginning sometime in 1986, who will carry out independent research in some aspect of developmental biology. Our department is part of a nonprofit research institution and is situated on the Johns Hopkins University Homewood campus. Applicants should send curriculum vitae, a statement of research interest, and have three letters of recommendation sent to: **Director, Department of Embryology, Carnegie Institution of Washington, 115 West University Parkway, Baltimore, Md. 21210.** *An Equal Opportunity/Affirmative Action Employer.*

ELECTROPHYSIOLOGIST

Postdoctoral position to collaborate in studies of development and activity-dependent plasticity in networks of cultured neurons. New non-invasive techniques, such as voltage sensitive dyes, will be used as well as conventional intracellular and patch recordings [see *Soc. of Neurosci. Abstr.* 171, 1 (1984)]. Reply to: **J. Pine, California Institute of Technology 256-48, Pasadena, Calif. 91125.** Please include curriculum vitae and names of three references.

**EXECUTIVE DIRECTOR
THE ACADEMY OF NATURAL SCIENCES**

Qualifications: earned doctorate in biological sciences; distinguished research career, with substantial publication record; substantial record of professional activity; successful administrative experience at senior level in research institute or museum, involving planning, policy formulation, budgeting, evaluation, and significant operational and programmatic responsibilities; demonstrated leadership ability in working with internal and external constituencies, including university and government relations. Familiarity with collection-based scientific research and its issues, concerns, and new technologies a must. **Responsibilities:** Line management of the Museum Division and the Division of Systematics and Evolutionary Biology; assistance in fund raising; special projects as assigned. Reports directly to president. Applicants should submit curriculum vitae and five references to: **Executive Director Search, Academy of Natural Sciences, 19th and Parkway on Logan Square, Philadelphia, Pennsylvania 19103,** by 30 September 1985. *Equal Opportunity/Affirmative Action Employer.*

**EXECUTIVE OFFICER
The American Association of Immunologists**

We seek an executive officer to manage both the administrative and business affairs of the association and the business aspects of the *JOURNAL OF IMMUNOLOGY* located in Bethesda, Maryland. Will be responsible for: management of operating funds; payment of bills; preparation of annual budget; record keeping; assisting in organization of annual meeting; record of council and committee meetings; liaison with other domestic and international scientific organizations; assisting journal editor in the business and publishing aspects of the Journal. Requires experience in administration, financial management, and contract negotiations. Scientific background is highly desirable but not mandatory.

Send résumé and three letters of recommendation to: **H. Metzger, Secretary-Treasurer, The American Association of Immunologists, 9650 Rockville Pike, Bethesda, Md. 20814.**

The Society encourages applications from women and minority groups.

Postdoctoral Scientist Drug Metabolism

The Drug Metabolism Department of SK&F Laboratories is seeking a scientist interested in investigating the effects of disease models on the metabolism and pharmacokinetics of drugs; investigate *in vitro* and *in vivo* factors controlling the metabolism of drugs with anti-inflammatory and immunomodulatory activity; work in collaboration with the staff of Drug Metabolism and Immunology Departments; and publish and present results in the scientific literature and at scientific meetings.

The successful candidate will have:

- Ph.D. in Biochemistry, Chemistry, Pharmacology or Drug Metabolism with 0-2 years postdoctoral experience.
- Experience in analytical chemistry/drug analysis; previous experience in studying the metabolism of chemicals would be useful.
- Excellent oral and written communication skills.
- Practical or theoretical knowledge of pharmacokinetics is preferred.

Postdoctoral positions are one year temporary assignments renewable for a second year upon mutual agreement.

Presently located near Valley Forge, PA, the Department will be relocating to a new state-of-the-art research complex only minutes away. We offer an excellent salary, benefits, and relocation package. Please forward your c.v. to George P. Kissell, Jr., Manager, Personnel Relations, SK&F Laboratories, 1568 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer. M/F/H/V.

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**Agricultural
Research
Service**

**United States
Department of
Agriculture**

RESEARCH ASSOCIATE (MOLECULAR BIOLOGY) PLUM ISLAND ANIMAL DISEASE CENTER, GREENPORT, NY

Two **RESEARCH ASSOCIATE** positions in Molecular Biology are available.

One position (NER-PA-017) involves the study of morphogenesis of foot-and-mouth disease virus using cell-free systems programmed with viron RNA and analysis with monoclonal and polyclonal antibodies. Studies could also involve mapping of conformation dependent epitopes involved in neutralization and/or development of recombinant vectors expressing the viral structural protein genes. Expertise in molecular virology and biochemistry is required. A background in molecular cloning is desirable.

The second position (NER-PA-018) involves either: 1. cloning and sequencing the genome of bluetongue virus, or 2. studies on the organization and function of the structural proteins of purified bluetongue virus. Expertise in molecular cloning is required for the first project and experience in molecular virology is required for the latter project.

Both positions are for up to two years and are available immediately. The first position is funded at \$26,381 (GS-11). The second position is funded at \$26,381 (GS-11) or \$31,619 (GS-12) depending on qualifications. Successful candidates for the second position must be a U.S. citizen. Individuals interested in either position should send a CV and include names and addresses of three references to **Dr. M. Grubman, USDA, ARS, Plum Island Animal Disease Center, P.O. Box 848, Greenport, NY 11944**. For information call (516)-323-2500. Applications must be received by **October 14, 1985**. Please show the number of the position you are applying for on your CV.

USDA IS AN EQUAL OPPORTUNITY EMPLOYER. WOMEN AND MINORITIES ARE URGED TO APPLY.

CARDIOVASCULAR PHARMACOLOGY

Section Leader

The Research Division of Schering-Plough has an immediate opening in its Pharmacology Department which will report to the Associate Director of Cardiovascular Pharmacology. The successful candidate must have 5 years experience beyond the PhD as a Cardiovascular Pharmacologist/Physiologist. At least two of these years should be in a related pharmaceutical industry setting. Qualified candidate must possess state-of-the-art knowledge of Cardiovascular Pharmacology with expertise in at least one of the following areas: Hypertension, Hemodynamics, Electrophysiology and/or Vascular Smooth Muscle Pharmacology. You must also be an established investigator with a strong record of publications, and possess the strong organizational and communication skills required to direct successfully a group of scientists.

Qualified candidates are invited to submit resume along with salary history and requirements, in confidence, to: Mr. Louis DeMartino, Box DD 85-17, Schering-Plough Corporation, 60 Orange Street, Bloomfield, New Jersey 07003. We are an equal opportunity employer m/f/h.



Schering-Plough

HOFFMANN-LA ROCHE

Director, Immunopharmacology

Hoffmann-LaRoche, a major pharmaceutical company, has a career opportunity for an individual to direct a department of 20 people whose mission is drug discovery in the area of immunomodulatory agents. This individual will have broad interaction in the exploratory research and clinical research divisions, particularly in the areas of inflammation and immune dysfunction.

Qualifications: PhD in Immunology or Cell Biology followed by 8 to 12 years research experience in the area of immunology. Substantial original research experience documented by a significant publication record in refereed journals in the field of immune regulation is required. This immunology background should be supplemented with protein or biochemical training. Experience supervising other PhD scientists is also necessary. Industrial experience in the area of immunomodulatory drug discovery and development is highly desirable.

Roche offers a research environment that encourages scientific growth and creativity and a competitive compensation package. Roche is located in a suburban community 10 miles outside of New York City. Interested individuals should send a C.V. to: Position JF, c/o Mrs. Eleanor Malone, Professional Employment and Staffing Specialist



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from people who care*

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POSITIONS OPEN

COORDINATOR OF SCIENCE OUTREACH

The College of Letters and Science of the University of Wisconsin, Oshkosh, invites applications for the position of Coordinator of Science Outreach beginning 1 February 1986. A Ph.D. in one of the mathematical/science disciplines and teaching experience in biology, chemistry, computer science, or geology are required. Evidence of successful grants activity, science workshops, and organizational ability is essential. A knowledge of, or experience with, teachers' associations or similar organizations would be beneficial.

The Coordinator of Science Outreach will be expected to provide leadership for grant development, workshop activity, and special programs in Science Outreach. The individual will coordinate activities among faculty from the departments of biology and microbiology, mathematics, chemistry, computer science, geology, and physics and astronomy, and area school systems and teachers. The position will involve half-time teaching in biology, chemistry, or geology with reportage to one of these academic units and to the Dean of the College of Letters and Science for Science Outreach activities. The position is an academic year appointment; salary commensurate with experience.

Closing date for application is 31 October 1985. Applicants should submit a résumé, official transcripts, and three letters of recommendation to: **Dr. H. Gene Drecktrah, Associate Dean, College of Letters and Science, University of Wisconsin, Oshkosh, Wis. 54901.** The University of Wisconsin, Oshkosh, is an Affirmative Action/Equal Opportunity Institution.

ECOLOGIST. The Department of Biology, Kenyon College, invites applications for a tenure-track position. The successful candidate will be expected to teach at the introductory and advanced levels for undergraduates and to maintain a program of research that will allow undergraduate participation. A commitment to teaching excellence is required. The department is developing a program in environmental biology and seeks candidates who can contribute significantly to the establishment of a teaching field station. Applicants' primary research interests should include a systems approach and aquatic ecology. Applicants should send statements of teaching and research interest, curriculum vitae, graduate transcripts, and three letters of reference to: **E. R. Heithaus, Ecology Search Committee, Biology Department, Kenyon College, Gambier, Ohio 43022.** Deadline for receipt of applications: 1 November 1985.

Kenyon College is an Equal Opportunity Employer that encourages applications from all qualified individuals, including members of minority groups and women.

EPIDEMIC AID LABORATORY CHIEF

A position of **supervisory microbiologist** GM 13/14 (salary \$37,599 to \$44,340, based on qualifications) to serve as chief of an Epidemic Aid Laboratory, is open in the Division of Bacterial Diseases, Centers for Disease Control. The Laboratory collaborates on investigations of disease outbreaks of meningitis, listeriosis, toxic shock syndrome, and other unusual or unidentified bacterial pathogens. The applicant must be a U.S. citizen, have a strong background in clinical bacteriology and primary isolation, and have the ability to design and conduct research to improve detection, isolation, enrichment, and enumeration of pathogenic bacteria. A Ph.D. is preferred. Some travel is required. Candidates should submit curriculum vitae and names of three references to: **Personnel Management, Attention: Mike Mitchell, Centers for Disease Control, Atlanta, Georgia 30333, telephone: 404-329-3271.** For scientific information, contact: **Don J. Brenner, Ph.D., telephone: 404-329-2841.** The Centers for Disease Control is an Equal Opportunity Employer.

EUKARYOTIC MOLECULAR GENETICIST. The Division of Genetics and Dismorphology at the University of Rochester invites applications for a nontenure-track faculty position of scientist. Ph.D. level training in genetics and microbiology, three or more years of experience in chemical mutagenesis, and demonstrated experience (publications) using recombinant DNA technology are required. The position is split between coordinating and supervising a human recombinant DNA diagnostic laboratory and a research laboratory involving projects investigating specific gene expression during human muscle development. Salary according to past experience and apparent productivity. **Box 191, SCIENCE.** The University of Rochester is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

The Department of Biological Sciences at the University of Wisconsin-Milwaukee (UWM) anticipates a tenure-track position in **EVOLUTIONARY PLANT SYSTEMATICS.** The candidate is expected to establish an active, extramurally funded research program in vascular plant evolution utilizing modern phylogenetic approaches. The department seeks a broad-based individual who will interact productively with its aquatic and terrestrial ecologists; the UWM Cedar-Sauk Field Station and Center for Great Lakes Studies offer excellent research facilities. The candidate will teach plant taxonomy and a graduate-level course in his/her area of expertise. Postdoctoral experience preferred.

Applicants must provide curriculum vitae, a concise statement of research and teaching objectives, recent reprints, and have three letters of recommendations sent to: **Chair, Search Committee for Evolutionary Plant Systematics, University of Wisconsin-Milwaukee, P.O. Box 413, Milwaukee, Wis. 53201.** Closing date: 15 October 1985.

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

FACULTY APPOINTMENTS

The Department of Pharmacology, Yale University, seeks to expand its full-time faculty by hiring up to three tenure-track assistant or associate professors. Applicants should have a Ph.D. or equivalent degree and 2 or more years of postdoctoral research experience. Candidates with an outstanding record of research innovation and productivity in any area of modern biology or chemistry relevant to pharmacology will be considered. A commitment to excellence in teaching and involvement in our educational programs for medical and graduate students is expected. Applications will be accepted until 30 November 1985. Rank and salary commensurate with experience. Applicants should submit letters of application, a summary of research experience and goals, and the names of at least three references to: **Dr. John Perkins, Chairman, Department of Pharmacology, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510.** Yale University is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION—TROUT BIOLOGIST. Assistant professor, tenure-track, 12-month. Beginning January 1986. Ph.D. required; 80 percent extension, 20 percent research. Extension programs will require cooperative work with producers, county agents, agribusinesses, and natural resource agencies. Research program to be developed related to aspects of the trout industry. Position housed at Fletcher, N.C. Open until 15 October 1985 or until filled. Minorities encouraged. Send résumé, career plans, and three letters of reference to: **Dr. Richard L. Noble, Chairman, Search Committee, Department of Zoology, Campus Box 7617, North Carolina State University, Raleigh, N.C. 27695.** North Carolina State University is an Equal Opportunity/Affirmative Action Employer.

IMMUNOLOGY/TISSUE TYPING. The Department of Pathology, Case Western Reserve University School of Medicine, and University Hospitals of Cleveland has a tenure (track) opening in its growing immunology program for director of its service tissue-typing (HLA) laboratory. The director must work closely with clinicians doing solid organ and bone marrow transplantation. Candidates should also (potentially) have an active, high quality, independent research program in some area of contemporary immunology, basic or applied. Applicants should send curriculum vitae, bibliography, representative reprints, brief statement of experience and future research plans, and names of three references to: **Michael E. Lamm, M.D., Director, Institute of Pathology, Case Western Reserve University, 2085 Adelbert Road, Cleveland, Ohio 44106.** An Equal Opportunity/Affirmative Action Employer.

MOLECULAR BIOLOGISTS

Research associate (postdoctoral) and research assistant (technical) positions available immediately to participate in studies on molecular biology of fertilization and early embryogenesis. Applicants must have experience with recombinant DNA techniques including gene cloning, gene transfer, DNA sequencing, RNA isolation, two dimensional gel electrophoresis, and so forth. Research assistant must have at least 3 years of experience in a molecular biology laboratory. Send curriculum vitae and three letters of reference to: **Dr. Gary Hodgen, Scientific Director, Jones Institute for Reproductive Medicine, Department of Obstetrics/Gynecology, Lewis Hall-Room 2011, 700 Olney Road, Norfolk, Va. 23507.** An Equal Opportunity Employer.

POSITIONS OPEN

FACULTY POSITION available tenure-track, in **molecular genetics**, with a special interest in membranes. Applicants should have research background in recombinant DNA technology (preferably also in somatic cell genetics) and working knowledge of membrane proteins. M.D. and/or Ph.D. in appropriate field required. Successful candidate will hold tenure-track appointment (assistant or associate professor, depending upon qualifications) in Department of Physiology and Molecular Biophysics at Baylor College of Medicine. Joint appointments in relevant academic departments also possible. Laboratory space and basic equipment provided and initial laboratory support available. Successful candidate will devote majority of his/her effort to establishing and maintaining an independent research program related to the main interests of the department. The department is building a strong program in membrane biophysics with expertise in electrophysiology, membrane biochemistry, reconstitution, and modelling. Send curriculum vitae, a brief description of past and present research experience, and names of three or more references to: **Dr. A. M. Brown, Incoming Chairman, Physiology and Molecular Biophysics Department, Baylor College of Medicine, One Baylor Plaza, Houston, Texas 77030.** An Equal Opportunity/Affirmative Action Employer.

DUKE UNIVERSITY SCHOOL OF FORESTRY AND ENVIRONMENTAL STUDIES FOREST MANAGEMENT FACULTY

Full-time, tenure-track position; rank commensurate with qualifications. Responsible for graduate-level teaching and advising, development of externally funded research, coordination of joint MF/MBA program. Requires Ph.D. in forest management, including operations research, economics, business; degree or experience in public or private forestry; strong forest management research interests. Submit curriculum vitae, representative publications, transcripts (recent graduates), and names of three references to: **Chairman, Forest Management Search Committee, Department SC, School of Forestry and Environmental Studies, Duke University, Durham, N.C. 27706.** Applications accepted until 1 November 1985 or until position filled.

An Equal Opportunity/Affirmative Action Employer

IMMUNOLOGY/MICROBIOLOGY. Assistant professor, tenure-track position available January 1986. Teaching responsibilities will include undergraduate and graduate courses in microbiology, immunology, biochemistry, and/or immunology related areas. Selected candidate will be expected to develop active research program in specialty for training undergraduate and M.S. degree students. Ph.D. degree required and research/postdoctoral experience preferred. Submit curriculum vitae and names of three references by 28 October to: **Dr. J. P. White, Search Committee Chairman, Biology Department, St. Bonaventure University, St. Bonaventure, N.Y. 14778.** Equal Opportunity/Affirmative Action Employer

UNIVERSITY OF QUEENSLAND

LECTURER (fixed term)—ENTOMOLOGY

Must have a Ph.D. and sound training in entomology. As well as normal duties, job will entail supervision of postgraduate students working for master's and Ph.D. degrees especially in agricultural entomology.

Salary per annum: A\$26,236 to A\$34,467.

Closing date: 10 October 1985. Reference 33685

Additional information and application forms are available from: **The Staff Officer, University of Queensland, St. Lucia, 4067, Queensland, Australia (19411).**

The University of Queensland is an Equal Opportunity Employer.

MICROBIOLOGIST—To prepare and read bacteriology plates daily; prepare and interpret microbiology and parasitology slides; prepare and edit procedures for microbiology, immunology and urine analysis; prepare and interpret different tests in immunology serology; and urine analysis and supervise microbiology section. Salary: \$18,620 per year. Basic 40-hour week (8 a.m. to 5 p.m.). High School graduate. Bachelor's degree in microbiology (4 years). Two years of experience. Send résumés to: **7310 Woodard, Room 415, Detroit, Mich. 48202.** Reference Number 41285. Employer-paid ad.

HOFFMANN-LA ROCHE

Protein Crystallography Senior Scientist

Hoffmann-La Roche, a leader in the pharmaceutical industry, is seeking a crystallographer to lead an established, fully-equipped protein crystallographic laboratory in the Department of Physical Chemistry. The crystallographer, working closely with the molecular modeling and small-molecule crystallography laboratories, will conduct collaborative research with scientists from the Department of Chemistry, Biology, Molecular Genetics, and Pharmaceutical Research.

Qualifications: PhD in a relevant discipline and a strong, broad background in protein crystallography, and an interest in the relationship of protein structure to function. Emphasis will be placed on the practical aspects of protein crystallography, including crystallization, data collection, structure solution and refinement.

Roche offers an environment which encourages scientific achievement and initiative. Please send a C.V. and the names of three references to: Position JB, c/o Mrs. Eleanor M. Malone, Professional Employment and Staffing Specialist



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VETERINARY DIAGNOSTIC PRODUCTS

MICROBIOLOGICAL ASSOCIATES INC., an established diagnostics and toxicology company, has a challenging opportunity in our expanding Diagnostic Products Division.

PRODUCT MANAGER

The Product Manager will play a vital role in the development and introduction of new diagnostic products for infectious diseases of veterinary and research animals. We are seeking a person with an advanced degree and experience in managing the development and introduction of diagnostic products. Familiarity with regulatory agencies and administrative experience is also desirable.

MICROBIOLOGICAL ASSOCIATES offers a comprehensive, company-paid benefits program. This position is currently located in Santa Clara, California, but will be relocated in one year to a new facility in Maryland. For immediate consideration, please send your resume to:

**Personnel Department
MICROBIOLOGICAL ASSOCIATES INC.
A Subsidiary of Daryl Laboratories Inc.
5221 River Road
Bethesda, Maryland 20816**

OPPORTUNITIES IN BIOLOGICAL SCIENCES, CHEMISTRY, AND COMPUTER SCIENCE

In response to an Army request for proposals, we are seeking expressions of interest in a number of challenging assignments that would become available in 12 to 18 months

IN MARYLAND

INHALATION RESEARCH SCIENTIST — To serve as chief of pulmonary physiology and inhalation technology. Experienced pulmonary physiologist with extensive laboratory experience.

BIO-STATISTICIAN — To perform statistical design and analysis of biomedical experimentation. Requires a PhD and experience in the field, with degree from a school of public health highly desirable.

ANALYTICAL CHEMISTRY MANAGER — To provide technical leadership and program management in the area of analytical chemistry. A PhD in a specific area of analytical chemistry and additional, broad-based experience and awareness of other areas of analytical chemistry required. A minimum of five years experience in the handling, degradation, and disposal of chemicals essential.

STRUCTURAL CHEMISTS — Scientists experienced in the use of Fourier transform infrared spectroscopy, Fourier transform nuclear magnetic resonance spectroscopy and mass spectrometry will also be required for this laboratory. Qualified candidates will have at least either a PhD in Chemistry and two years of additional experience or an MS in Chemistry and six years of additional experience. Background in bioanalytical applications of these techniques is preferred.

PHARMACOLOGIST — To pursue studies in pharmaceutical development, metabolism, pharmacokinetics, bio-availability and drug efficacy. A PhD in pharmacology and substantial experience in classical pharmacology required.

BIO-TECHNOLOGY SPECIALISTS — To provide leadership in conduct of existing programs and planning and implementation of new programs. Desired disciplines include cell biology, protein biochemistry, microbiology, molecular biology, and immunology/immunochemistry.

COMPUTER FACILITY MANAGER — To direct a laboratory computer facility. Must have at least 10 years experience in computer center operations and resource planning.

SYSTEMS PROGRAMMER — To be responsible for technical components of a computer system. Requires three years experience including at least a year of VAX VMS system programming.

APPLICATION SPECIALIST — Responsible for developing and maintaining software and command procedures and for interfaces between packaged software products. Requires a degree in computer science and at least three years experience.

Battelle is a leader in the field of biomedical research, and fosters a scientific and professional environment where individuals may pursue the challenges and rewards of technical excellence.

Expressions of interest in these positions only are welcome, and should be directed to: **Richard Shaw, Dept. E-4, Battelle Columbus Division, 505 King Avenue, Columbus, Ohio 43201-2693.** Please enclose current C.V.



Battelle

Columbus Division

An Equal Opportunity/Affirmative Action Employer M/F/H



has the following vacancies for senior scientists within its Center for Toxicology and Biosciences

PATHOLOGIST

to be involved in the initiation, monitoring and evaluation of toxicological studies. The post may also include certain managerial responsibilities. Ideally, the chosen candidate should be certified by the American Board of Veterinary Pathologists and have considerable experience of rodent toxicology studies.

TOXICOLOGIST

to act as the chief toxicologist or study director for rodent toxicology studies. The post may also include some staff management responsibilities. Ideally, the candidate would be certified by the American Board of Toxicology.

INHALATION TOXICOLOGIST

to join an already strong team of scientists in this area. The candidate should be experienced in inhalation toxicology and/or aerosol physics.

IMMUNOLOGIST

Applicants should have at least 3 years postdoctoral experience in monoclonal antibody technology. Candidates with a background in immunopharmacology, inflammation or delayed and immediate type hypersensitivity reactions are encouraged to apply.

METABOLIC CHEMIST

Candidates should have at least two years postdoctoral experience in metabolic studies with drugs or foreign compounds. A broad knowledge of techniques with radiolabelled compounds including synthetic methods and modern instrumental analysis is required.

For all posts the chosen candidate will work within a multidisciplinary team of scientists and will be expected to participate in the development of new research lines. Experience in contract or industrial research, and knowledge of the French language are desirable but not essential for these positions.

Please address full particulars with curriculum vitae, photograph and salary requirements to the Personnel Manager, Battelle, 7 route de Drize, 1227 Carouge/Geneva, Switzerland.

TWO RESEARCH POSITIONS IN THE NEUROSCIENCES:

Molecular Neurobiologist/Molecular Geneticist

Applications are invited for molecular neurobiologists and/or molecular geneticists, by the Mental Health Research Institute of The University of Michigan. The Institute's scientists have research interests in a variety of areas including membrane phospholipids, PET scanning, neuropeptides, molecular biology, phosphoproteins, biological psychiatry, and neuroendocrinology.

Level of appointment and salary will be commensurate with experience and qualifications. Applicants should have a Ph.D. and/or M.D., at least two years post-doctoral research training, and a strong commitment to a research career in the neurosciences.

Successful applicants will devote the majority of their time to the establishment of original, independent, research programs within the Institute. It is also expected that the applicant will hold a joint appointment in an appropriate academic department of the University. Access to graduate students and post-doctoral fellows is via relevant departments and interdepartmental degree programs. An interdisciplinary training program provides stipends for M.D. and Ph.D. research fellows. Investigators' salaries are supported by the Institute.

The deadline is December 15, 1985. Applications should be accompanied by a curriculum vitae, a statement of research interests, selected papers, and the names of three references to: **Stanley Watson, Ph.D., M.D., Associate Director, Mental Health Research Institute, 205 Washtenaw Pl., The University of Michigan, Ann Arbor, MI 48109**



The University of Michigan

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POSITIONS OPEN

UCLA—INORGANIC CHEMISTRY. The Department of Chemistry and Biochemistry of the University of California, Los Angeles (UCLA), invites applications for a regular faculty appointment in inorganic chemistry. The appointment will probably be at the assistant professor level, but applications for a more senior position may also be considered. Applicants for a junior position should give evidence of outstanding potential both in teaching and research, those for more senior positions must demonstrate an exceptional record of accomplishment in these areas. All areas of inorganic chemistry will be considered, with special emphasis on those which complement the interest of the current faculty. *The University of California is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minority candidates.* A complete application should include curriculum vitae, two- to three-page description of proposed research, and letters of recommendation from at least three professional references. Applications should be completed by 15 November 1985 and should be directed to: **Professor J. S. Valentine, Chairman, Inorganic Search Committee, Department of Chemistry and Biochemistry, University of California, Los Angeles, Calif. 90024.**

YALE UNIVERSITY/INVERTEBRATE PALEONTOLOGIST. The Department of Geology and Geophysics is soliciting applications for a faculty position in invertebrate paleontology to begin in the academic year 1986-1987. The position may be filled at either the tenured or the untenured level. Curriculum vitae, list of publications, and the names of three referees should be sent by 15 November 1985 to: **Karl K. Turekian, Chairman, Department of Geology and Geophysics, Yale University, Box 6666, New Haven, Conn. 06511.**

Yale University is an Equal Opportunity/Affirmative Action Employer and encourages applications from all qualified scientists.

MOLECULAR BIOLOGIST—The Department of Pathology in the College of Medicine at the University of Florida is seeking a molecular biologist (Ph.D. and/or M.D.) to fill a tenure-track position at the assistant or associate professor level. Research experience in human molecular genetics, especially involving the HLA complex is highly desirable. The successful candidate will be expected to develop an independent research program in human molecular genetics, participate in the education and training of graduate students, and provide technical expertise for the development of a Clinical Pathology Laboratory of Molecular Biology. Starting date for position is 1 January 1986.

Applicants should submit their curriculum vitae, plus copies of three publications which best exemplify their work, and the names of three referees to: **Raul C. Braylan, M.D., Professor Box J-275, Department of Pathology, University of Florida College of Medicine, Gainesville, Florida 32610.** Recruiting deadline is 1 November 1985.

Equal Opportunity/Affirmative Action Employer

MYCOLOGIST

The Department of Botany, University of Wisconsin-Madison, invites applications for a tenure-track position in mycology beginning fall 1986. We seek a broadly trained mycology Ph.D. who will pursue a vigorous research program in any modern area of fungal studies. Candidates should be able to teach a general mycology course with a laboratory. Other teaching responsibilities include participation in an introductory botany or biology course. Application should include curriculum vitae, copies of publications, graduate transcripts, a brief statement of research interests, and names and addresses of three references. Applications, due by 15 October are to be sent to: **Dr. Linda E. Graham, Chair, Mycology Search Committee, Department of Botany, University of Wisconsin, Madison, Wis. 53706.** *Equal Opportunity/Affirmative Action Employer.*

NMR PHYSICIST OR ENGINEER with knowledge of NMR electronics and RF technology and interest in probe design/construction. Challenging position with opportunities for instrument development and research collaboration. Academic staff appointment, rank, and salary dependent on qualifications. Application and letters of reference should be sent to:

**Dr. Oleg Jardetzky
Stanford Magnetic Resonance Laboratory
Stanford University
Stanford, Calif. 94305**

Stanford is an Equal Opportunity/Affirmative Action Employer.

RESEARCH BIOLOGIST

The Upjohn Company has an opening in the Pathology/Toxicology Unit for a **Research Biologist** to support efforts in the safety assessment of new drugs.

The individual will assist in the investigation of immunologic factors associated with host-xenobiotic interactions. Applicants must possess a B.S. or M.S. degree in the biological sciences with research experience in immunology and/or cell biology. Expertise in cell culture, column chromatography, electrophoresis, and radioisotopes is especially desirable; familiarity with laboratory animals will be of benefit.

Kalamazoo is a medium sized Southwestern Michigan community with immediate access to a mix of excellent cultural, educational and recreational pursuits including numerous lakes and four-season climate. Upjohn offers an excellent salary, commensurate with experience and an outstanding benefits program.

For confidential consideration, please call inside Michigan collect 616-323-6767 or from outside Michigan toll free 1-800-253-8600 Ext. 3-6767, to request an employment application sent to you immediately. Please refer to Ad Number 17743-A when calling.

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NIGERIAN UNIVERSITIES

SEVERAL ACADEMIC VACANCIES EXIST IN NIGERIAN UNIVERSITIES IN THE FOLLOWING BASIC SCIENCES:

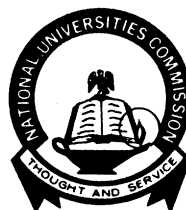
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|------------------------|---------------------------------|
| 1. BIOLOGY | 7. MATHEMATICS (PURE & APPLIED) |
| 2. BOTANY | 8. MICROBIOLOGY |
| 3. BIOCHEMISTRY | 9. MINERAL SCIENCE & TECHNOLOGY |
| 4. CHEMISTRY | 10. PHYSICS |
| 5. GEOLOGY | 11. STATISTICS |
| 6. GEOPHYSICS, APPLIED | 12. ZOOLOGY |

APPOINTMENTS WILL BE MADE AT PROFESSORIAL, ASSOCIATE PROFESSORIAL AND LECTURER LEVELS.

QUALIFICATIONS

ALL APPLICANTS ARE EXPECTED TO HOLD PH.D OR OTHER RESEARCH DEGREES AND TO HAVE CONSIDERABLE NUMBER OF YEARS OF TEACHING AND/OR RESEARCH EXPERIENCE.

*INTERESTED APPLICANTS SHOULD SEND SIX COPIES OF THEIR DETAILED RESUME TO:



THE EDUCATION ATTACHÉ
NIGERIAN UNIVERSITIES OFFICE
2010 MASSACHUSETTS AVENUE, N.W.
4TH FLOOR
WASHINGTON, D.C. 20036

*APPLICATIONS ARE ALSO WELCOME FROM UNIVERSITY PERSONNEL WHO WOULD LIKE TO SPEND THEIR SABBATICAL LEAVE/S IN NIGERIAN UNIVERSITIES.



The Howard Hughes Medical Institute and

The National Institutes of Health

again announce

The Program for Research Opportunities for Medical Students

1986-87

HHMI-NIH Research Scholars can spend 9-12 months in one of the 1,000 research laboratories located at the NATIONAL INSTITUTES OF HEALTH, Bethesda, MD.

Salary, fringe benefits and travel will be provided.

Further information and application forms may be obtained by writing to the Howard Hughes Medical Institute, P.O. Box 330837, Coconut Grove, FL 33133

Your request for the application information should be received by December 2nd, 1985.

Final deadline for return of all application materials is January 15th, 1986.

CNS Pharmacologist

An opportunity to join Pfizer's Neuroscience research section exists for a highly qualified neuroscientist with experience in behavioral pharmacology. You will join a team of scientists who are using advanced receptor autoradiography and local cerebral glucose utilization imaging techniques together with automated behavioral technology to study psychosis and depression.

A PhD in Neuroscience or a related field with one to two years postdoctoral research experience in behavioral pharmacology is required. You must be conversant with current concepts of biochemical neuropharmacology and neurochemistry and possess strong oral and written communication skills. Experience with computer programming and automated behavioral equipment will be an advantage.

Immediate responsibilities will include the operation of a fully automated multipurpose behavioral laboratory and participation in the research efforts of the antidepressant and antipsychotic projects. Interpretation and integration of behavioral data with those from other laboratories will be an important responsibility. Original research leading to the establishment of novel approaches for the discovery of psychotherapeutic agents will be encouraged.

This position offers an excellent opportunity for professional recognition and career growth. We offer an excellent salary, benefit and relocation package plus an attractive southeastern Connecticut shore location. Qualified applicants should submit their resume including the names, addresses and phone numbers of three professional references to: **Dr. J. K. Larson, Manager of Employment, Pfizer Central Research, Eastern Point Road, Groton, CT 06340.**



An equal opportunity employer

POSITIONS OPEN

DEPARTMENT OF MOLECULAR BIOLOGY OF VANDERBILT UNIVERSITY

We invite applications from a tenure-track position, the rank dependent upon qualifications. Scientists with experience and research programs in the areas of structural, molecular, cellular, or developmental biology and are invited to apply. Candidates qualifying for a senior rank should have a record of distinguished contributions. Other candidates should have already demonstrated their research capabilities. Responsibilities will include development of a strong independent program of research and participation in the teaching program. *Women and minority candidates are especially encouraged to apply.* Please submit curriculum vitae, list of publications, summary of research plans, and three letters of reference to: **Dr. Oscar Touster, Chairman, Department of Molecular Biology, Vanderbilt University, Nashville, Tenn. 37235.** Applications are requested by 1 October 1985, but will be accepted as long as necessary to fill the position.

An Affirmative Action/Equal Opportunity Employer

MCGILL UNIVERSITY INSTITUTE OF PARASITOLOGY MOLECULAR PARASITOLOGIST

Applications are invited for a tenure-track position at the assistant or base of associate professor level for appointment in the 1985/1986 academic year. The Institute is involved in the research and teaching of human and animal parasitology in a variety of disciplines. Preference will be given to a candidate with experience in the application of biotechnology or pharmaceutical chemistry to the control and diagnosis of parasites. The successful applicant will be expected to collaborate with parasite biochemists and immunologists. *In accordance with Canadian immigration requirements, preference will be given to Canadian citizens and permanent residents.*

Applications, including the names of three referees, should be received by 30 November 1985 and be addressed to: **Dr. Roger Prichard, Director, Institute of Parasitology, Macdonald College, McGill University, Ste-Anne-de-Bellevue, Quebec, Canada H9X 1C0.**

NEUROBIOLOGIST. A tenure-track faculty position is available at the assistant professor level in the Department of Anatomy and Neurobiology. Applicants should have Ph.D. and/or M.D. degree and a minimum of 2 years of postdoctoral training. Candidates should have a strong record of research productivity and potential to establish an independent research program meritorious of extramural support. Preference will be given to applicants with research interests in the neurosciences. The quality and potential of research program as well as the potential for interaction with present faculty members is more important than specific research area. Teaching duties include lectures in medical histology and/or neuroscience and participation in a multidisciplinary neuroscience program. Send curriculum vitae, description of research interests, and summary of teaching experience with names of three references by 15 October to: **Dr. Rodney L. Parsons, Chairman, Department of Anatomy and Neurobiology, College of Medicine, The University of Vermont, Burlington, Vt. 05405.**

An Equal Opportunity/Affirmative Action Employer

PHYSIOLOGIST

The Colorado College, a private undergraduate liberal arts institution, is seeking a sabbatical leave replacement to teach animal cell and vertebrate physiology, December 1985 to June 1986. Ph.D. preferred. Send letter of application, curriculum vitae, three letters of recommendation, and transcripts to: **Dr. James H. Enderson, Chairman, Department of Biology, The Colorado College, Colorado Springs, Colo. 80903.** Deadline for applications is 27 September 1985. *The Colorado College is an Equal Opportunity Employer.*

PLANT ANATOMIST-MORPHOLOGIST— HAWAII

Assistant professor, nontenure track, but renewable annually. Duties: participate in teaching a survey of the plant kingdom course, and develop graduate courses in electron microscopy and his/her own area of interest. Research open with respect to systematics, development, physiology, or ecology, but must have a tropical/evolutionary focus. Write for details: **Chairman, Department of Botany, 3190 Maile Way, University of Hawaii, Honolulu, Hawaii 96822.**

An Equal Opportunity/Affirmative Action Employer
Closing date: 27 September 1985.

POSITIONS OPEN

NEUROBIOLOGY POSTDOCTORAL research positions are available to study the organization, development, and plasticity of motor and sensory systems in brainstem, cerebellum, and spinal cord. Opportunities are available for collaborative work in several laboratories emphasizing the spatial, temporal, and cellular factors which influence neural development, plasticity, and regeneration. Applicants with experience in axonal tracing methods, immunocytochemistry, electron microscopy, image analysis, or receptor localization are preferred. Initial appointments are expected to be under the sponsorship of Drs. Beattie and Bresnahan, or Martin and King, but additional positions may soon be available in the expanding neuroscience program at Ohio State. Send curriculum vitae with names of three references, along with a statement of research interests, to: **Dr. George F. Martin, Department of Anatomy, The Ohio State University College of Medicine, 1645 Neil Avenue, Columbus, Ohio 43210, or telephone 614-422-1667.**

NMR INSTRUMENTATION SPECIALIST—The Pennsylvania State University College of Medicine seeks candidates for the position of NMR instrumentation specialist. Primary responsibilities include day-to-day operation and maintenance of Nicolet 1.9 T and Bruker AM400WB spectrometers as well as electronics design and construction. Excellent opportunities for collaborative research in biophysical and biomedical applications of NMR. Candidates should possess the equivalent of an M.S. or Ph.D. degree with substantial NMR experience. Competitive salary and excellent benefits. Send two copies of résumé, including salary requirement and names of three references, to: **Department of Personnel Services, The Milton S. Hershey Medical Center of The Pennsylvania State University, P.O. Box 850, Hershey, Pa. 17033. Telephone: 717-534-8440. An Equal Opportunity/Affirmative Action Employer.**

Reopened search for **PATHOGENIC MICROBIOLOGIST** with research interests in mechanisms of pathogenesis. Appointment effective spring 1986 semester. Tenure-track assistant professor with competency to teach upper-division and graduate courses in pathogenic microbiology and either medical mycology or animal virology. Normal teaching load is two lecture or one lecture/laboratory course per semester. Development of active research program appropriate to M.S.-granting university is expected. Earned Ph.D. required; postdoctoral experience preferred. Send curriculum vitae, three or four representative reprints, statement of proposed research direction, names and addresses of at least three references, and official transcripts to arrive no later than 6 November 1985 to:

**Dr. L. Raymond Fox, Chairman
Department of Biological Sciences
Wichita State University (WSU)
Wichita, Kans. 67208**

All correspondence should identify position for which you are applying.

WSU is an Equal Opportunity/Affirmative Action Employer.

PLANT MOLECULAR BIOLOGIST

The University of California, Santa Cruz, invites applicants for a tenure-track position in plant molecular biology at the assistant professor level, starting 1 July 1986. Preference will be given to applicants with several years of postdoctoral experience, using molecular biological techniques to study fundamental problems in plants. In addition to developing an active research program, the appointee will be expected to offer one upper-division course in the area of her/his specialty, teach at lower-division and graduate levels, and conduct research in a new research laboratory building now being constructed.

Send curriculum vitae, a brief description of research and teaching goals, reprints of scientific papers, and three references by 1 January 1986 to: **Dr. Lincoln Taiz, Chair, Search Committee, Department of Biology, University of California, Santa Cruz, Calif. 95064.**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL FELLOWSHIP. Applications are invited for a 2-year position to work on the cloning and modification of plant toxin genes in the Department of Medicine at the University of California at San Diego. Applicants should have a Ph.D. in molecular biology with additional experience in protein purification. *An Affirmative Action/Equal Opportunity Employer.* Send résumés and three letters of reference to: **Dr. Ivor Royston, Department of Medicine, V-111E, University of California, San Diego, La Jolla, Calif. 92093.**

RESEARCH SCIENTISTS Immunoassay Development

Murex Corporation is a rapidly growing medical products company specializing in the development and use of monoclonal antibody technology. We are seeking to add to our professional staff, persons with the following skills:

Team Leader

Ph.D. in chemical or biological science with at least 3 years relevant industrial experience. Expertise in immunochemical and biochemical methods of protein purification/characterization and immunoassay method development is required. Should have solid people and organizational skills and experience in managing other technical personnel.

Scientist

BS/MS/Ph.D. in chemical or biological science. Previous experience in immunoassay development desirable but not required.

Murex is located in the greater Atlanta, Georgia area and has modern, fully-equipped R & D facilities. We offer an exceptional opportunity for your continued professional and personal growth. For confidential consideration, please send your resume to:

Contact

Personnel Director, Murex Corporation, P.O. Box 2003, Norcross, Georgia 30091

murexTM

VIROLOGISTS

Southern Research Institute has positions for virologists to participate in the expansion of research efforts in antiviral drug development. Positions require a PhD in Virology, Microbiology, or Biochemistry. Recent graduates and individuals with appropriate post-doctoral training will be considered. Experience with cell culture, animal model systems, and molecular virology desirable.

Research involves evaluation of chemical compounds for in vitro and in vivo antiviral activity against exotic RNA viruses. Work will be conducted in a P3-level containment facility. Responsibilities include serving as task leader on current research contracts, supervising junior staff, and collaborating with other scientists in the conception, development, and execution of other research programs. Opportunity available to publish and present findings at scientific meetings.

Applicants should send curriculum vitae and salary requirements to:

James G. Kerr
Department B68
SOUTHERN RESEARCH INSTITUTE
P.O. Box 55305
Birmingham, AL 35255-5305

An Affirmative Action Employer/U.S. Citizenship Required

GROUP LEADER LOS ALAMOS NATIONAL LABORATORY

The Life Sciences Division of the Laboratory is seeking a manager to assume the scientific leadership and technical management of the Experimental Pathology Group composed of 50 staff personnel including 20 principle investigators. This group performs a broad range of basic research and programmatic efforts in the life sciences and provides advanced flow cytometry concept for biochemical applications. The group also maintains a major role in sustaining and enhancing established national resources in flow cytometry and chromosome specific recombinant DNA libraries.

Responsibilities:

- Report to the Life Sciences Division Leader and provide scientific leadership for major programs in basic cellular and humoral immunology, molecular mechanisms relating to the development of abnormalities in chromosome structure and function, molecular dynamics and regulation of cellular proliferation and differentiation, with application to basic and clinical problems.
- Provide scientific guidance in the development of advanced flow cytometric systems and advanced applications of cytometric analysis to basic and applied problems in immunology, pathology and cell biology.
- Recruit outstanding staff members and postdoctoral fellows in order to even more effectively address the broad scientific mission of the Experimental Pathology Group.
- A major responsibility will be to identify, obtain and maintain funding support commensurate with the scientific goals and objectives of the group.
- Should communicate and interact effectively with sponsoring and collaborative agencies including DOE, DoD, NIH, academia and the private sector as well as with all levels of Laboratory management, staff and support personnel.

Requirements:

- Strong technical background in the above described activities with potential expertise in the applications of flow cytometry to problems in cellular immunology, pathology and cell biology highly desirable.
- Must have significant research accomplishments in the biological sciences related to the group's mission.
- Proven ability to initiate and develop new research programs and work effectively with DOE and Laboratory management personnel.
- Requires a strong combination of scientific leadership and demonstrated interpersonal skills.
- Excellent written and oral communication skills.
- Ph.D. in cellular immunology, cell biology, biophysics or medicine, or an equivalent combination of education and relevant experience.
- U.S. citizenship required

About Los Alamos

The Laboratory, a national resource for multifaceted scientific research, is operated by the University of California for the United States Department of Energy. Our beautiful location in the mountains of northern New Mexico offers a relaxed lifestyle with exceptional outdoor recreational activities.

To apply, please send your resume with salary history in confidence to:

Sandra Harding
DIV 50855-EI
Personnel Administration Division
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

University of California

LOS ALAMOS
Affirmative Action/Equal Opportunity Employer

POSITIONS OPEN

PLANT MOLECULAR BIOLOGIST

The Department of Biology at the Virginia Polytechnic Institute and State University announces a tenure-track faculty position at the assistant or associate professor rank. The position could start anytime between January and September 1986. Candidates must have a demonstrated competence in the general areas of plant molecular biology and recombinant DNA technology. Postdoctoral training is highly desirable. The successful candidate will be expected to establish an active research program and participate in the graduate and undergraduate teaching programs of the department. Applicants should submit curriculum vitae, a two- or three-page statement of research interests, and the names of three references to: **Dr. A. Esen, Department of Biology, Virginia Polytechnic Institute and State University, Blacksburg, Va. 24061.** Application deadline is 15 October or until the position is filled. *An Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

POSTDOCTORAL—CELLULAR SECRETION

Available immediately to study neurohormone secretory mechanisms in the adrenal chromaffin system. Experience in any of the following areas desirable: cell calcium regulation, P. Inositol metabolism, protein phosphorylation, cell culture, biomembranes. Will be moving to Albany Medical College, Albany, N.Y., in fall 1985. Send curriculum vitae, bibliography, and the names of three references to: **Dr. Allan Schneider, Sloan Kettering Institute, Cornell University Graduate School of Medical Sciences, 1275 York Avenue, New York, N.Y. 10021.**

POSTDOCTORAL—INSTRUCTOR, immediately to study postnatal development and growth in avian skeletal muscle using immunocytochemical techniques. Background in muscle histochemistry, electron microscopy, and human gross anatomy essential. Send curriculum vitae and names of three references to: **Dr. Charles R. Shear, Anatomy Department, University of Maryland School of Medicine, Baltimore Md. 21201.** *An Equal Opportunity/Affirmative Action Employer.*

THE BLAUSTEIN INTERNATIONAL CENTER FOR DESERT STUDIES

BEN-GURION UNIVERSITY OF THE NEGEV POSTDOCTORAL POSITIONS—1986-1987

One-year postdoctoral fellowships are available in fields of arid zone research. Programs include meteorology, architecture, solar energy, ecology, agriculture, sociology, plant and animal physiology, hydrology, and so forth. For further information and application forms, contact: **Michael Adam, Executive Coordinator, Blaustein International Center for Desert Studies, Ben-Gurion University, Sede Boqer Campus, 84990 Israel.**

POSTDOCTORAL POSITION IN BIOCHEMICAL TOXICOLOGY

Position available 1 October 1985 for study of pulmonary toxicology of oxidants in aged animals. Requires expertise in chemistry, biochemistry, and mammalian toxicology. Starting salary: \$17,500. Reply with curriculum vitae and three references to:

**Dr. Mark R. Montgomery, Research Service (151) VA Hospital
13000 North 30 Street
Tampa, Fla. 33612**

The VA is an Equal Opportunity Employer.

POSTDOCTORAL POSITIONS IN DRUG TARGETING FOR CELL BIOLOGISTS AND BIOCHEMISTS available immediately and in December 1985 to study liposomes targeting and to study the mechanism of action of biologic response modifiers. Experiences in protein chemistry, cell culture, and cell fractionation. Salary competitive. Send résumé and three letters of recommendation to: **Dr. Karl J. Hwang, School of Pharmacy, University of Southern California, 1985 Zonal Avenue, Los Angeles, Calif. 90033.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION IN MOLECULAR GENETICS immediately available at the Jackson Laboratory to investigate the problems in the control of gene expression in the developing mouse. An integrated approach utilizing classical genetics, molecular biology and transgenic mice will be utilized in these investigations. Please send curriculum vitae and references to: **Dr. L. P. Kozak, The Jackson Laboratory, Bar Harbor, Maine 04609.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately for the study of mechanisms of chemically induced lung injury. Recent Ph.D. with training in one of the following areas: Prostanoid pharmacology, oxygen radical biology, platelet or phagocytic cell function, or microvascular injury. Send résumé and names of three references to:

**Dr. Robert A. Roth
Department of Pharmacology and Toxicology
Michigan State University (MSU)
East Lansing, Mich. 48824**

MSU is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION IN BIOLOGICAL OCEANOGRAPHY available 1 January 1986 to study role of zooplankton in production of macroscopic particles (marine snow). Experience with particulate matter and in maintaining zooplankton alive desirable. Please send curriculum vitae, statement of research interests, plus names and telephone numbers of three references to: **Dr. Alice Aldredge, Marine Science Institute, University of California, Santa Barbara, Calif. 93106,** by 15 October. *Equal Opportunity Employer.*

POSTDOCTORAL POSITION available for fall 1985 to study trichothecene mycotoxin metabolism [see *J. Amer. Chem. Soc.* 107, 3354 (1985)]. Ph.D. in biochemistry, chemistry, or related discipline with some experience in enzyme kinetics and/or analytical techniques for structure proof preferred. Send curriculum vitae and have three letters of recommendation sent to: **Michael A. Marletta, Department of Applied Biological Sciences, Room 56-229, Massachusetts Institute of Technology (MIT), Cambridge, Mass. 02139.** *MIT is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION—Immediate opening for recent Ph.D. in biochemistry or molecular biology to study the biosynthesis and regulation of vitamin K-dependent bone proteins. Projects include transcriptional regulation by the steroidal hormone 1,25-dihydroxyvitamin D₃, the vitamin K-dependent biosynthesis of γ -carboxyglutamic acid-containing proteins, and differentiation within the osteoblastic cell lineage. Send curriculum vitae and names of at least two references to: **Dr. Paul A. Price, Department of Biology, B-022, University of California, San Diego, La Jolla, Calif. 92093.**

POSTDOCTORAL POSITION—SYNTHETIC ORGANIC CHEMIST

Position available to begin in fall 1985 in the Positron Emission Tomography Program at University of California, Los Angeles (UCLA), School of Medicine. We invite applications from outstanding individuals to develop organic synthetic procedures for a variety of positron-emitting labeled substrate analogs and pharmacological agents. Applicants should have a strong background in organic synthesis, chromatographic techniques and spectroscopy. Send curriculum vitae, list of publications, and two letters of recommendation to: **Dr. J. R. Barrio, UCLA School of Medicine, Division of Nuclear Medicine and Biophysics, Los Angeles, Calif. 90024.** Salary range is \$20,300 to \$25,300, depending on qualifications, plus fringe benefits. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available in protein chemistry and affinity labeling of active and regulatory sites in enzymes. Recent Ph.D. in biochemistry. Salary competitive. Send résumé and three references to: **Dr. Roberta F. Colman, Chemistry Department, University of Delaware, Newark, Del. 19716.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION. Postdoctoral position available immediately to study LPS and other outer membrane components of periodontopathic bacteria. Background in anaerobic microbiology, cell fractionation, and biochemistry preferred. Must be able to work with macrophages and cell culture. Submit curriculum vitae and three letters of reference to: **Dr. S. C. Holt, Department of Periodontics, University of Texas Health Science Center, San Antonio, Tex. 78284.**

POSTDOCTORAL POSITIONS (TWO) available immediately to study alterations in genetic structure and expression during cellular aging. Apply with curriculum vitae and names and addresses of three references to: **Dr. Sam Goldstein and Dr. Robert J. Shmookler Reis, Departments of Medicine and Biochemistry, Slot 604, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Ark. 72205.**

POSITIONS OPEN

POSTDOCTORAL POSITION IN PHARMACOKINETICS AND DRUG METABOLISM. Study the effects of chronic and acute nutritional factors on the hepatic clearance of drugs in rat, dog, and man. Ideal candidate: Ph.D. in pharmacology, biochemistry, nutritional sciences, or pharmacetics with some previous postdoctoral experience and knowledge of HPLC, GLC, protein purification, and hepatic microsomal enzyme methods. Support available for 1 to 3 years. Approximate starting date: 1 December 1985. Submit curriculum vitae and names of three references to: **Dr. David Lalka, Department of Pharmacetics, State University of New York at Buffalo, Amherst, N.Y. 14260.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately to study developmentally regulated synthesis of penicillin-binding proteins in *Bacillus subtilis*. Experience in cloning techniques essential. Send curriculum vitae and names of three references to: **Dr. Christine Buchanan, Department of Biology, Southern Methodist University, Dallas, Texas 75275.**

POSTDOCTORAL POSITION

Applications are invited for a Ph.D. graduate with experience in endocrinology, pharmacology, molecular biology, biochemistry, and related sciences, to study the hormonal control of the benign and malignant prostatic disease. The position is available immediately for a 12-month (renewable) duration, with salary based on experience. The successful applicant will join a productive group with solid clinical and scientific resources. Creativity and research development will be encouraged. Send curriculum vitae and names of three references to: **Dr. John Trachtenberg, Division of Urology, Toronto General Hospital, 101 College Street, 14 EN-209, Toronto, Ontario, Canada M5G 9Z9.**

POSTDOCTORAL POSITION available 15 October 1985. Study pesticide resistance mechanisms and arbovirology in mosquitoes. Experience in toxicology and epidemiology would be helpful. Send curriculum vitae, transcripts, reprints, and names of three references to: **Dr. Bev. Norment, Department of Entomology, Mississippi State University, Mississippi State, Miss. 39762.** Telephone: 601-325-2085.

POSTDOCTORAL POSITION available immediately for research on inflammatory bowel diseases. Work involves immunochemistry, immunohistochemistry, microbiology and possibly recombinant DNA technology under the direction of a physician/immunologist, physician/infectious disease specialist, and Ph.D. immunologist/cell biologist. Support for a minimum of 2 years at \$19,000 to \$23,000 per year, depending upon qualifications. Send curriculum vitae and three references to: **W. R. Brown, M.D., VA Medical Center 111E, 1055 Clermont Street, Denver, Colo. 80220.** *Equal Opportunity Employer.*

JISAO

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 (JISAO), AK-40, University of Washington, Seattle, Wash. 98195.**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION

Position open 1 October 1985. To isolate the gene for human cholinesterase. Techniques include DNA sequencing, preparation of a cDNA library, screening a gene library. Salary range: \$17,000 to \$19,000, depending on experience. Send curriculum vitae and names and telephone numbers of references to: **Dr. Oksana Lockridge, Pharmacology Department, Medical Science I, M6322, University of Michigan, Ann Arbor, Mich. 48109-0010.**

A nondiscriminatory, Affirmative Action Employer

POSTDOCTORAL POSITION available immediately to study the regulation and enzymology of sphingolipid synthesis. Required is a Ph.D. in biochemistry plus 3 years of postdoctoral or 2 years of research associate research experience in glycosphingolipid analysis. Salary: \$20,998. Apply to: **Dr. M. Lev, Department of Microbiology, Southern Illinois University, Carbondale, Ill. 62901.** *An Equal Opportunity/Affirmative Action Employer.*

MOLECULAR/CELLULAR BIOLOGIST

The Lovelace Inhalation Toxicology Research Institute in Albuquerque, New Mexico seeks a Molecular/Cellular Biologist to join its internationally recognized program which addresses significant problems concerning the affects of airborne toxic materials on man and his environment. The Institute approaches its mission with a strong, multidisciplinary team of researchers trained in the biomedical, biophysical and physical sciences. The scope of the research includes molecular, genetic, cellular and tissue responses to energy-related effluents.

The individual we seek will participate in the conduct of research on molecular biology, cell transformation and carcinogenesis, using both *in vitro* and *in vivo* techniques. A doctoral degree in molecular and cellular biology and a strong publication record are necessary, as are good communication skills and a desire to work independently and collaboratively as part of a multidisciplinary team. U.S. Citizenship also required. Preference will be given to applicants with 2 or more years of postdoctoral research experience in DNA damage and repair, cell transformation, transcriptional and translational regulation and molecular hybridization techniques.

We offer an outstanding benefit program and a competitive salary. Starting date is negotiable. Qualified applicants are invited to submit a curriculum vitae and summary of research interests to: **Personnel Unit, Lovelace Inhalation Toxicology Research Institute, P.O. Box 5890, Albuquerque, NM 87185. (505) 844-9431.**

We are an equal opportunity/affirmative action employer

Postdoctoral Scientist/ Toxicology

The Department of Toxicology at Smith Kline & French Laboratories, located in suburban Philadelphia, Pennsylvania, is seeking a bright scientist to fill a challenging postdoctoral position. Our postdoctoral appointments are of 1 year duration and with mutual agreement renewable for a 2nd year.

The successful candidate will:

- design, conduct, interpret and publish investigative research experiments on the topic of drug-induced myelotoxicities
- critically evaluate the scientific literature.
- interact and collaborate with colleagues in the Investigative Toxicology, Experimental Pathology and other Preclinical Research & Development departments.
- present research findings at local and national meetings.

Candidates are required to have:

- a PhD in Pharmacology, Toxicology, Pathology, Biochemistry or other relevant disciplines.
- experience in tissue and isolated cell culture techniques.
- a growing research and publication record.
- excellent oral and written communication skills.

We offer excellent compensation and benefits and an attractive relocation policy. For confidential consideration, send your resume and names of three references to: Mr. Walter B. Flagg, Senior Employment Consultant, SmithKline Beckman Corporation, 1588 Spring Garden Street, Phila., PA 19101. We are an Equal Opportunity Employer, M/F/H/V.

SK&F
A SmithKline Beckman Company

CARDIOVASCULAR PHARMACOLOGIST BS/MS Level

The Pharmacology Department of **Warner-Lambert/Parke-Davis Pharmaceutical Research Division** has an immediate opening for an Associate Scientist to assume responsibility for the cardiovascular safety evaluation of clinical candidate compounds. The incumbent will also have responsibility for determining mechanisms of action and drug effects upon the autonomic nervous system. With general supervision, this individual must be able to apply scientific principles to answer complex pharmacologic interaction questions.

We are seeking an experienced candidate with diversified hands-on capabilities whose qualifications include:

- MS or equivalent in Pharmacology, Biology or related field and minimum 3 years' relevant experience. Alternatively, BS or equivalent and 5 years' cardiovascular experience.
- Basic laboratory and surgical skills including experience with *in vivo* receptor pharmacology, with chronic implants of cardiovascular instrumentation and with ECG interpretation.
- Demonstrated interpersonal skills including excellent oral and written communications.
- Working knowledge of computerized data analysis.
- Demonstrated ability to conceptualize diverse cardiovascular interactions and to develop *in vivo* models to define mechanisms involved.

We offer excellent salary, benefits and working environment in our state-of-the-art facilities adjacent to the University of Michigan campus. Qualified candidates should forward resume and salary requirements to: **Ms. D. Love, Human Resources Supervisor, Warner-Lambert/Parke-Davis, 2800 Plymouth Road, Ann Arbor, Michigan 48105.** An Equal Opportunity Employer M/F/H.

**WARNER
LAMBERT**

**PURDUE SCHOOL OF SCIENCE—IUPUI
CHAIRPERSON
DEPARTMENT OF BIOLOGY**

The Purdue School of Science at Indianapolis invites nominations and applications for the position of chairperson for the Department of Biology. The School of Science is a major academic unit of Indiana University—Purdue University at Indianapolis (IUPUI) serving more than 1,000 students majoring in science.

IUPUI is a comprehensive urban university with over 23,000 students. Located in the capital city, the university is the third largest in the state, has close ties with local biomedical industry and the IU School of Medicine. Indianapolis is a dynamic metropolitan city with a commitment of growth and development.

The 17-member Biology Department is autonomous in its offering of B.S. and M.S. degrees. The Ph.D. is available in collaboration with Purdue University. The Biology Department is committed to teaching and research excellence in areas ranging from ecology to molecular biology. The person appointed will have an established reputation for outstanding leadership in research and the ability to lead, manage, and coordinate the activities of the Biology Department.

The position is a 12-month appointment with full professor rank. The preferred starting date is 1 July 1986. Nominations and applications, including curriculum vitae, statement of research interests, and names of three references, should be sent no later than 1 November 1985 to:

**Chairman—Search Committee
Purdue School of Science
Biology Department
1125 East 38 Street, P.O. Box 647
Indianapolis, Ind. 46223**

IUPUI is an Equal Opportunity/Affirmative Action Employer

**FACULTY POSITION IN
PROKARYOTIC GENETICS
AND MOLECULAR BIOLOGY**

The Department of Microbiology and Immunology invites applications for a junior- or senior-level, tenure-track position focusing on molecular analysis of significant problems in prokaryotic genetics and molecular biology. Senior candidates should have a strong record of research accomplishment with sustained program growth and development. Junior candidates will be expected to develop a strong, independent research program with long-term growth potential. Teaching responsibilities, which emphasize quality rather than quantity, include medical, dental, and graduate students. The University of Tennessee Center for the Health Sciences is in a major growth phase. The department has just moved into a completely renovated building and will be appointing at least eight new faculty during the next several years. New faculty are also being appointed in the Departments of Pharmacology and Biochemistry. A large Center of Excellence grant has resulted in development of a Molecular Resource Center within the department featuring state-of-the-art facilities for: DNA cloning and sequencing, oligonucleotide synthesis, peptide synthesis, monoclonal antibody production, amino acid analysis, protein sequencing, and flow cytometry. Funds for the initiation of research programs will be available and salaries will be highly competitive. Applications should consist of curriculum vitae, copies of several recent publications, a brief statement of future research goals, and three letters of reference to be sent to: **Dr. Terrance G. Cooper, Department of Microbiology and Immunology, University of Tennessee Center for the Health Sciences, 858 Madison Avenue, Room 801, Memphis, Tennessee 38163.** Applications will be received until 15 October 1985 or until the position is filled thereafter. *The University of Tennessee is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION to study (i) purification and hormone-induced phosphorylation of the growth hormone receptor, and (ii) the relationship between conformational changes in the insulin receptor and transmembrane signalling. Experience in protein purification, receptor technology, and membrane biochemistry desirable. Send curriculum vitae and names of three references to: **Dr. David B. Donner, Sloan-Kettering Institute, 1275 York Avenue, New York, N.Y. 10021.**

POSTDOCTORAL POSITIONS available to study the molecular basis of the genetic deficiency of pyrimidine pathway enzymes and possible associated immunodeficiency or the mechanisms of DNA amplification associated with cellular resistance to chemotherapeutic agents. Both projects require the use of molecular biology techniques. Related experience is advantageous but not required. Starting salary of \$20,000 per year. Submit curriculum vitae, a summary of research experience and future interests, and three letters of reference to: **Dr. D. Parker Suttle, Division of Biochemical and Clinical Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, Tenn. 38101.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately to study the molecular mechanisms involved in the regulation of muscle gene expression by polypeptide growth factors. Background in molecular biology and/or biochemistry is desired. Send curriculum vitae and names of references to: **Dr. Eric N. Olson, Department of Biochemistry and Molecular Biology, M. D. Anderson Hospital and Tumor Institute, 6723 Bertner Avenue, Box 117, Houston, Tex. 77030.** *Affirmative Action/Equal Opportunity Employer, M/F/H.*

POSTDOCTORAL POSITIONS available to study functional properties of murine and human retroviral gene products. Projects involve (i) site-specific mutagenesis of cloned viral genomes—experience in recombinant DNA methodologies required; and (ii) immunological studies of viral proteins—experience in MAb production and protein characterization desired. Send curriculum vitae and names of three references to:

**Dr. A. Pinter, Laboratory of Retroviral Biology
The Public Health Research Institute
455 First Avenue
New York, N.Y. 10016**

POSTDOCTORAL RESEARCH ASSOCIATES

Positions for NCI postdoctoral training program in molecular and cellular mechanisms of carcinogenesis are available at The University of Texas System Cancer Center (UTSCC) Science Park. Research programs focus on the following areas: somatic cell genetics, DNA repair and mutagenesis, carcinogen metabolism and adduct formation, tumor promotion, mechanisms of lymphomagenesis, normal and tumor cell differentiation, biochemical genetics, and growth factors. Current approaches in whole animal and in vitro culture systems include: flow cytometry (BD FACS 440), HPLC, monoclonal antibody production, Southern blot analysis and DNA sequencing, isoenzyme analyses, and electron microscopy. Applicants must be U.S. citizens or permanent residents and have a Ph.D., M.D., or D.V.M. degree. For application forms, contact: **Dr. Thomas J. Slaga, Director, UTSCC, Science Park-Research Division, P.O. Box 389, Smithville, Tex. 78957.** Telephone: 512-237-2403. *An Equal Opportunity/Affirmative Action Employer.*

**PROFESSOR OR ASSOCIATE PROFESSOR
OF TOXICOLOGY/PHARMACOLOGY**

The Department of Pharmacology, University of Tennessee Center for the Health Sciences, is inviting applications for a tenure-track position available immediately. The applicant should possess the Ph.D. or M.D. degree and should be an established scientist with demonstrated experience in the application of biochemical, molecular and/or immunological knowledge in the study of basic toxicological problems. The applicant would be expected to maintain an active, independent research program and participate in undergraduate and graduate teaching. Please submit complete curriculum vitae, and three letters of reference before 30 November 1985 to: **Dr. K. U. Malik, Chairman Search Committee, Department of Pharmacology, University of Tennessee Center for the Health Sciences, Memphis, Tennessee 38163.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately to study interaction of soil-borne rhizobia with root rhizosphere of clover species. Background in plant/microbe interactions with experience in epifluorescence and autoradiographic techniques preferred. Salary: \$16,000 to \$17,000 per annum. Send curriculum vitae and three letters of reference before 1 October 1985 to: **Dr. Peter J. Bottomley, Department of Microbiology, Oregon State University, Corvallis, Ore. 97331-3804.** *Oregon State University is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE in the Department of Forest Products, Oregon State University, to study the degradation of fumigant chemicals applied for decay control in Douglas-fir heartwood. Fixed-term, 12-month renewable appointment. Ph.D. in wood science and technology or chemistry required, with background in deterioration of wood. Send résumé, university transcripts, and three letters of recommendation by 27 September 1985 to:

**Dr. Helmuth Resch, Head
Department of Forest Products
Oregon State University
Corvallis, Oregon 97331**

Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with section 504 of the Rehabilitation Act of 1973.

**POSTDOCTORAL RESEARCH ASSOCIATE—
MATERIALS ENGINEERING**

Responsibilities: carry out a variety of tasks involved with the science and engineering development of a shuttle-borne experiment to determine the effects of micro-gravity on dendritic crystal growth, including aspects of convective and diffusive transport processes and their interfacial interactions. Support involving detail engineering design with laboratory experiments to determine the feasibility of various concepts to achieve the required scientific goals, including laboratory testing of the prototype instruments to determine their capability of meeting the scientific requirements and also to establish a set of baseline, one-gravity, data.

The applicant should be prepared to be involved with scientific pre-mission, mission, and post-mission support to the principal investigator, including significant post-mission data reduction and analysis. Space station follow-on experimentation is possible also.

Qualifications: Ph.D. in materials science, engineering, applied physics, or related fields. Desire to get involved in the practical aspects of space-borne research essential.

Candidates should send résumé and names of three references to: **Dr. M. E. Glickman, Materials Engineering Department, Rensselaer Polytechnic Institute (RPI), Troy, New York 12180.** *RPI is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH FELLOW POSITIONS. Isolation, characterization, and expression of genes involved in human cancer in genetically well-defined population groups. Also, association of such sequences with cell cycle, development, and use for diagnosis, prognosis, and therapy. Available fall and winter. Send résumé and other information to: **Leonard H. Augenlicht, Ph.D., Chief, Laboratory of Molecular Oncology, Department of Oncology, Montefiore Medical Center, 111 East 210 Street, Bronx, New York 10467.** *An Equal Opportunity Employer, M/F.*

**INTERDISCIPLINARY CANCER RESEARCH
POSTDOCTORAL RESEARCH FELLOWSHIPS**

An interdisciplinary research group associated with the Faculty of Medicine, University of Toronto, and studying fundamental aspects of etiology and prevention of colorectal and breast cancer has or anticipates openings in the near future in the following areas: (i) Clinical epidemiology of breast cancer and its precursors; (ii) Molecular aspects of antibody-antigen (associated with colorectal cancer) interaction; (iii) Molecular aspects of endocrine regulation of development of colonic and breast cancer; (iv) Organic chemistry of carbohydrate antigens (synthesis and stereochemistry of oligosaccharides) and of mutagen (alkylating type)-DNA interaction; and (v) Cell biology of colonic and breast epithelial effects related to food components. Please write to: **Dr. N. F. Boyd (i), Dr. J. J. Krepinsky (ii to iv), or Dr. W. R. Bruce (v), Ludwig Institute for Cancer Research, Toronto Branch, 9 Earl Street, Toronto, Ontario, Canada M4Y 1M4,** or inquire by telephone at 416-923-1505.



The **INTERNATIONAL ATOMIC ENERGY AGENCY** has a supervisory position in Radiometry in the Safeguards Analytical Laboratory in Seibersdorf near Vienna. Measurement of Pu, U, Am by Alpha, gamma, and neutron techniques. Required university degree (or equivalent professional experience) and six years experience in radiometric measurement of uranium, plutonium, americium, and other actinides.

Initial contract two years, tax-free emoluments approx. US\$ 29,000 per annum. Additional allowances for dependents. Travel and removal expenses paid. Six weeks annual leave.

Send Curriculum Vitae with an indication of your nationality under Vacancy Notice No. 85/47 to the Division of Personnel, International Atomic Energy Agency, P.O. Box 100, A-1400 Vienna, Austria.

MOLECULAR GENETICS, INC., a leading biotechnology firm, is seeking two talented individuals to join us:

POSTDOCTORAL POSITION/ ANIMAL SCIENCES

Available immediately, to investigate molecular biology and biochemical features of viral glycoproteins and define their roles in virus infection, host immune response and pathogenesis. Ph.D. with experience in protein chemistry, membrane biology, virology, and/or molecular biology preferred. Genetic engineering, recombinant DNA, protein structural studies, and immunologic analyses will be involved. Send curriculum vitae, three letters of recommendation, and a short statement regarding research interests to: *Dr. Marc S. Collett, Director of Molecular Biology*

RESEARCH SCIENTIST/PLANT SCIENCES

To join our expanding Plant Sciences Group. The selected individual will develop research strategies for identifying plant genes of commercial importance and will clone, transfer, and characterize expression of such genes in crops of interest. Applicants must hold a Ph.D., plus 2 years postdoctoral or professional experience in plant molecular biology or related field, and have demonstrated collaborative and supervisory skills. Preference will be given to candidates with additional experience in plant biochemistry and/or plant genetics. Send curriculum vitae and three letters of reference to: *Mary S. Barton, Manager, Human Resources*

Molecular Genetics offers competitive salaries, excellent benefits and a stimulating multidisciplinary research environment.

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10320 Bren Road East
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TUMOR BIOLOGIST Ph.D. Level

An immediate opportunity exists at the **Warner-Lambert/Parke-Davis Pharmaceutical Research Division** in the Experimental Oncology group of the Chemotherapy Department, to participate in a program of development of novel anticancer drugs and radiosensitizers.

The successful candidate should have:

- Ph.D. or equivalent in pharmacology or other relevant biological science
- One to three years of postdoctoral training and a documented record of research excellence
- Experience in experimental cancer chemotherapy and/or radiobiology, using **in vivo** murine tumor models
- Training in additional areas such as experimental toxicology, flow cytometry or tumor xenograft studies is desirable
- Strong verbal and written communication skills, and the ability to participate in a team approach to drug discovery and development

The Warner-Lambert/Parke-Davis Research Division is located in Ann Arbor, Michigan adjacent to the University of Michigan campus. Our dynamic scientific staff enjoy excellent compensation, benefits, a modern work setting and an exceptional living environment.

Qualified applicants should send resume and salary requirements to: **Ms. R. Chapman, Human Resources Supervisor, WARNER-LAMBERT/PARKE-DAVIS, 2800 Plymouth Road, Ann Arbor, Michigan 48105.** An Equal Opportunity Employer M/F/H.

**WARNER
LAMBERT**

ANTICANCER PHARMACOLOGIST Ph.D. LEVEL

An immediate opportunity exists at the **Warner-Lambert/Parke-Davis Pharmaceutical Research Division** in the Biochemical Pharmacology group of the Chemotherapy Department for one or two highly qualified individuals to participate in a program of development of novel anticancer drugs and radiosensitizers.

The successful candidate should have:

- Ph.D. or equivalent in biochemistry, pharmacology or other relevant biological science
- One to three years of postdoctoral training and a documented record of research excellence
- Experience in biochemical pharmacology studies with anticancer drugs, particularly DNA intercalating agents or antimetabolites
- Training in tissue culture, radiobiology, or analytical biochemistry is desirable
- Strong oral and written communication skills, and the ability to participate in a team approach to drug discovery and development

The Warner-Lambert/Parke-Davis Research Division is located in Ann Arbor, Michigan adjacent to the University of Michigan campus. Our dynamic scientific staff enjoy excellent compensation, benefits, a modern work setting and an exceptional living environment.

Qualified applicants should send resume and salary requirements to: **Ms. R. Chapman, Human Resources Supervisor, WARNER-LAMBERT/PARKE-DAVIS, 2800 Plymouth Road, Ann Arbor, Michigan 48105.** An Equal Opportunity Employer M/F/H.

**WARNER
LAMBERT**

POSITIONS OPEN

POSTDOCTORAL/RESEARCH ASSOCIATE position available to study RNA processing in animal cells and viruses. Background either in biochemistry, microbiology, or molecular biology needed. Experience in recombinant DNA technology desirable. Salary negotiable. Send résumé with two names for references to: **Dr. Mary Edmonds, Department of Biological Sciences, University of Pittsburgh, Pittsburgh, Pa. 15260. Equal Opportunity/Affirmative Action Employer.**

PROFESSOR AND HEAD, Department of Aquaculture, Fisheries and Wildlife. Twelve-month, tenure-track position to administrate teaching, research, and extension programs in aquaculture, fisheries, and wildlife at a land-grant university. Send letter of interest, résumé, and three letters of reference to: **Dr. John R. Sweeney, Chair, Search Committee, Department of Aquaculture, Fisheries and Wildlife, Clemson University, Clemson, S.C. 29634-0362; telephone: 803-656-3117. Deadline: 1 November 1985.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately to isolate and study the plasma membrane of trypanosomes, specifically its interaction with cytotoxic serum proteins and drugs and its properties during differentiation. Background in cell fractionation, membrane biochemistry, and/or lipid methodology is desirable. Please send curriculum vitae and names of three references to: **Dr. M. R. Rifkin, The Rockefeller University, 1230 York Avenue, New York, N.Y. 10021.**

POSTDOCTORAL RESEARCH POSITIONS (3-year) to study the role of p53 in multistage carcinogenesis. (i) In SV40 and Adenovirus transformation. Reagents available include p53 deletion mutants that bind SV40T or Elb55k but defective for cellular immortalization, p53 antisense retroviral vectors, and so forth. (ii) Study of p53 mutants with enhanced cellular immortalization activity. University lecturer scale. Applications to: **Dr. J. Jenkins, Marie Curie Research Institute, The Chart, Oxted, Surrey, U.K. Telephone: 088-388-2306.**

POSITIONS OPEN

PROFESSOR AND CHAIRMAN DEPARTMENT OF INTERNAL MEDICINE ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE

The St. Louis University School of Medicine announces the availability of the chair of the Department of Internal Medicine. The department currently consists of 126 full-time faculty members with 16 divisions and has had a long history of excellence in clinical medicine, education, and research. Plans for a new hospital facility which will replace the existing beds of the primary teaching hospital and considerably expand the research space of the Department of Medicine provide new opportunities for the incoming chairman. The School of Medicine seeks applicants who are experienced educators, scholars, and clinicians with established research credentials. Administrative and management competence are important. All applicants are requested to send curriculum vitae, letter of application, and list of at least three references to:

**Dr. Thomas C. Westfall, Chairman
Internal Medicine Search Committee
Department of Pharmacology
St. Louis University School of Medicine
1402 South Grand Boulevard
St. Louis, Missouri 63104**

St. Louis University is an Equal Opportunity Employer.

REPRODUCTIVE CELL BIOLOGIST

The Department of Obstetrics and Gynecology, University of Louisville, invites applications for a faculty position at a research assistant professor (nontenure-track) level from candidates who have advanced postdoctoral training in cell and molecular biology. Preference will be given to candidates who are productive and experienced in using morphological approaches to investigate gonadotropin, prostaglandin, and epidermal growth factor action in reproductive tissues. The position is now open and the plan is for it to be filled by July 1986. Interested candidates please send curriculum vitae and three references to: **C. V. Rao, Ph.D., Professor, Department of Obstetrics and Gynecology, University of Louisville School of Medicine, Louisville, Kentucky 40292.**

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

RESEARCH ASSISTANT II position available to characterize dopaminergic, adrenergic, serotonergic and cholinergic receptors, perform analytical and computer modeling of experimental phenomenon associated with receptor-ligand binding, investigate acetylcholine biosynthetic mechanisms, establish biochemical and behavioral correlates of dopamine and other neurotransmitter receptor activation and analyze structure activity relationship of pharmacologic agents. Requires Ph.D. in biochemistry, 2 years of postdoctoral research in pharmacology; 2 years of research experience associated with each of the following areas: receptor-ligand binding techniques, isolation and use of synaptosomes and plasma membranes from brain tissue for the study of neurotransmitter metabolism, enzyme purification, radioimmunoassay techniques for surgical and physiological procedures in the rat brain, microdissection of brain tissue, and small animal surgery. Forty hours per week; \$19,680 per year. Send curriculum vitae and names of three references to: **Iowa Department of Job Service, 1810 Lower Muscatine Road, Iowa City, Iowa 52244. Job Order Number 1581300.** This is an employer-paid ad. *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSISTANT—Thomas Jefferson University has a full-time position available for a research assistant having a B.S. or M.S. in science. Experience with animal surgery and physiological monitoring necessary. Familiarity with cerebrovascular and neurological function assessment techniques desirable. Ability to implement complex experimental protocols with minimal supervision required. Individual must be available to work days and evenings. Send résumé and cover letter to: **Dr. Anthony J. Triolo, Department of Pharmacology, THOMAS JEFFERSON UNIVERSITY, 1020 Locust Street, Philadelphia, Pa. 19107. An Equal Opportunity Employer.**

RESEARCH ASSOCIATE. Excellent opportunity for an individual with at least 1 year of postdoctoral and graduate training in molecular biology to work in a Howard Hughes Medical Institute Laboratory at Duke University. Send curriculum vitae and bibliography and three letters of reference to: **Dr. Ralph Snyderman, Box 3892, Duke University Medical Center, Durham, N.C. 27710.**

CAREER OPPORTUNITY ONCOGENE SCIENCE, INC.

Is seeking to expand its staff at Long Island, NY research facilities for programs in

**Oncogene and growth factor research
in order to develop products for early
detection — monitoring — treatment
of human cancer.**

— Position Available —

DIRECTOR OF DIAGNOSTIC R&D PROGRAMS

Responsibilities include management of basic research and product development programs for human cancer diagnostics including strategic R&D planning and coordination of contract research with corporate sponsors. Successful candidate will have Ph.D. with experience in management of research and development programs in industrial setting particularly in the area of immunodiagnostics; knowledge of oncogene/growth factor research would be an asset.

Send resume to Scientific Director, Oncogene Science Inc.,
222 Station Plaza North, Suite 330, Mineola, NY 11501.

**Competitive salary. Liberal benefits.
Equity participation.**

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MOLECULAR BIOLOGIST

New England Biolabs

Two Postdoctoral Fellowships are available at New England Biolabs in Molecular Parasitology. A Ph.D. in molecular biology or biochemistry with experience in DNA cloning or immunological analysis of host/parasite systems is required.

There is an open policy on publications and interaction with academic institutions is encouraged. Salaries are competitive.

The Parasitology Group at New England Biolabs is studying the major filarial diseases of the world with the goal of characterizing and cloning diagnostic antigens and antibodies, ultimately leading to the development of a vaccine for the prevention of disease in human and animal hosts.

Applicants should submit a curriculum vitae and the names of three references to:

Personnel Director
New England Biolabs, Inc.
32 Tozer Rd.
Beverly, MA 01915
USA



Senior Scientist

Invest Your Skills In A Corporation Committed To Research.

CIBA-GEIGY, the seventh largest pharmaceuticals and specialty chemicals company in the world, has made a commitment to research unparalleled by any other chemical company its size. We currently have an opportunity in our clinical pharmacokinetic department at our corporate headquarters located in Westchester County, New York.

We seek an individual with a Ph.D. in Chemistry, Pharmaceuticals, Biochemistry or equivalent to conduct research on the disposition of drugs in man. The position is responsible for the authenticity, interpretation, documentation and communication of generated data.

Position requires experience analyzing drugs in biological fluids as well as strong communications and interpersonal skills. Experience in pharmacokinetics and computer programming is desirable.

In return for your expertise, you'll receive an excellent salary and benefits package and the opportunity to contribute to a highly professional and innovative environment. For prompt and confidential consideration, forward a resume and three letters of recommendation to: Ms. S. Santora, CIBA-GEIGY Corporation, 444 Saw Mill River Road, Ardsley, New York 10502. An Equal Opportunity Employer m/f/h/v.

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SENIOR VICE PRESIDENT AND PROVOST FOR HEALTH AFFAIRS

The University of Cincinnati requests applications and nominations for this senior administrative position. Together with the senior vice president and provost, this individual reports directly to the President and with him comprise the senior administrative leadership of the entire University.

The Medical Center includes the College of Medicine with approximately 768 medical students and 282 graduate students, the University Hospital with 600 beds and 617 residents, the College of Nursing and Health with 564 undergraduate and 100 graduate students, and the College of Pharmacy with 220 undergraduate and 50 graduate students. The deans of these schools and the executive director of the Hospital will report directly to the senior vice president and provost for health affairs.

Responsibilities include academic program evaluation and goal setting; approval and recommendations for all budgets; medical center planning; affirmative action; and liaison with outside organizations.

The successful candidate should have an earned doctorate and scholarly accomplishments; leadership qualities and significant administrative experience in health care systems; knowledge of budget planning and program evaluation; and ability to establish positive working relationships with faculty and students.

Submit letter of application by October 15, 1985 to:

William K. Schubert, M.D.
Chairman, Search Committee
President and CEO
Children's Hospital Medical Center
Elland & Bethesda Avenues
Cincinnati, Ohio 45229

Affirmative Action/Equal Opportunity Employer



SENIOR RESEARCH BIOCHEMIST

Candidate should have a PhD in Biochemistry, Pharmacology or related areas with 1-3 years of post-doctoral experience. Our laboratory is primarily involved with the study of ornithine decarboxylase and other aspects of polyamine biosynthesis, metabolism and function in parasitic protozoa (eg. trypanosomes). This work is focused on the use of irreversible inhibitors of ornithine decarboxylase as novel antiprotozoal agents. Work on several other metabolic pathways in parasitic protozoa, including nucleoside/nucleotide biosynthesis, is in progress. Experience with enzyme assays, enzyme purification, HPLC, cell culture techniques and small animal handling is desirable. The successful candidate will be involved in identifying potential enzyme targets for the development of new chemotherapeutic agents for the treatment of parasitic diseases.

We offer a competitive salary and fringe benefits package. Please send resume in confidence to:

Personnel Services Manager

Merrell Dow

MERRELL DOW RESEARCH INSTITUTE

2110 East Galbraith Road
Cincinnati, OH 45215

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ONCOGEN

IMMUNOCHEMIST

ONCOGEN, a biotechnology company founded in 1983, conducts research and development for cancer diagnosis and therapy. We are affiliated with Bristol-Myers Company, Genetics Systems, and Syntex Corporations. Our diagnostics program is actively seeking an Immunochemist to assist in the identification and characterization of tumor associated antigens.

Successful candidates will have a Ph.D. in a chemical or biological science, with emphasis in immunochemistry or biochemistry. Experience must include cell culture, monoclonal antibody technology, and work with carbohydrates and glycolipid antigens. Your record should demonstrate accuracy, creativity and dependability, in order to contribute to our fast-paced, stimulating state-of-the-art company.

ONCOGEN offers a competitive salary and benefits package in a very pleasant research environment. Please send resume, including publications, salary history to:

Personnel Manager
ONCOGEN
3005 First Avenue
Seattle, WA 98121

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Research Scientist

Acting as Assistant Director of the Cell Culture Laboratory within the Continuum Electromechanics Group of the Laboratory for Electromagnetic and Electronic Systems at M.I.T. will be responsible for setting up instrumentation of single cell electrical recording and for real-time video microfluorimetry. Acts as an investigator in the performance and direction of experiments related to the use of these techniques in sterile cell culture preparations. Assists in the direction/supervision of research studying electrical fields of living cells. May supervise/assist in the teaching of the undergraduate Quantitative Physiology Laboratory of the Department of Electrical Engineering. Requires Ph.D. (or equivalent degree) in a quantitative physiological/biophysical science with experience in intracellular bioelectrical measurement.

Send 2 copies of resume to M.I.T., refer to job #R85-796, Personnel Office, E19-239, 77 Massachusetts Avenue, Cambridge, MA 02139.

M.I.T. is an equal opportunity/affirmative action employer.

MIT

POSITIONS OPEN

RENAL LABORATORY TECHNOLOGIST

M.S., Ph.D., or Ph.D. candidate, immunoelectrophoretic protein and micro protein experience preferred. Half-time or full-time, in a New York hospital. Telephone: 718-780-1247.

RESEARCH ASSISTANT position available for recent Ph.D. preferably with bachelor's and doctorate degrees in pharmacy or a related science. Research will involve experimental cancer chemotherapy, molecular pharmacology and biochemistry both in vivo and in vitro. The applicant must be experienced in enzyme purification and kinetics, receptor binding methodology, high-performance liquid chromatography, two dimensional gel electrophoresis, DNA hybridization, and must be familiar with in vivo studies of antineoplastic agents. Salary: \$20,000. Send curriculum vitae and names of three references to: **Dr. J. A. Houghton, Division of Biochemical and Clinical Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, Tennessee 38101. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATE to synthesize polypeptides using amino acid NCA's and other appropriate methods and to characterize them. Requirements: Ph.D. in protein or organic chemistry, hands-on experience in all aspects of protein research. Salary commensurate with experience; support available up to 3 years. Send résumé, three letters of recommendation, graduate transcript, and research experience to: **Dr. Semih Erhan, Director of Research, Department of Dental Medicine, Albert Einstein Medical Center, York and Tabor Roads, Philadelphia, Pa. 19141.**

RESEARCH ASSOCIATE to provide analytical microscopy services in biological, geological, and materials science research. Experience with TEM, SEM, and x-ray microanalysis using EDS and WDS systems. Ability to apply techniques including freeze-fracture, ultramicrotomy, autoradiography, electron diffraction, and stereology is required. Position requires an M.S. and a minimum of 2 years of experience. Starting salary \$1500 per month. Apply at the Texas Employment Commission, Bryan, Texas, or send résumé to: **The Texas Employment Commission, TEC Building, Austin, Texas 78778, Job Order Number 3943456. Ad paid by an Equal Opportunity Employer.**

RESEARCH ASSOCIATE, POSTDOCTORAL, to investigate structure, evolution, and regulation of expression of cytochrome P-450 genes. Experience in cDNA and genomic cloning and DNA sequencing is essential. Experience in DNA transfection of mammalian cells and in vitro mutagenesis to identify cis-acting regulatory elements is highly desirable. Send résumé to:

**Dr. Milton Adesnik, Department of Cell Biology
New York University School of Medicine
550 First Avenue
New York, N.Y. 10016**

RESEARCH ASSOCIATE/DEVELOPMENTAL BIOLOGY. Experienced scientist to research the regulation of cell behavior by extracellular matrix, for example, structure/function of matrix receptors; cell surface proteoglycans; vascular and other tissue interactions. Collaborate in research and assist in training Ph.D. and M.D. postdoctorals. Solid cell biology background with expertise in protein biochemistry, monoclonal antibody, and rDNA techniques. Permanent position, available immediately. Salary depends on experience. Send curriculum vitae, salary requirements, and three reference letters to: **Dr. Merton Bernfield, Department of Pediatrics, Stanford Medical School, Stanford, Calif. 94305.**

VASCULAR RESEARCH Ph.D. SCIENTIST

Major teaching medical center seeks individual to direct research activities of Radiation Oncology Department, including developing and conducting scientific research, presenting at scientific meetings, and supervising in vivo and in vitro laboratories. Qualifications: related Ph.D., experience with biochemistry and vascular research, cell culture, and recombinant techniques. Position offers attractive compensation and academic appointment in affiliated medical school based on publication record and experience. Submit curriculum vitae to: **Employment Manager, Department RO.**

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MEDICAL CENTER
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An Equal Opportunity Employer**

POSITIONS OPEN

RESEARCH BIOCHEMIST/PHARMACOLOGIST.

A highly qualified Ph.D. is sought for collaborative research in the general area of cellular cyclic AMP metabolism. A non tenure-track faculty appointment at the instructor or research associate (postdoctoral) level will be made, depending upon experience. Some didactic and laboratory teaching of graduate students will be expected. Research areas currently under investigation include the mechanisms of hormonal regulation and desensitization of the adenylate cyclase system involving purification and characterization of the various components (stimulatory and inhibitory receptors, coupling proteins, and the catalytic proteins of the cyclase). Another area is the regulation of cyclic AMP destruction in intact cells. Current and future directions will emphasize the combined biochemical-genetic approach utilizing cultured cell lines with defects in the various components of the adenylate cyclase system and cyclic AMP destruction. Experience with enzyme purification, antibody development. Cloning or phospholipid technologies would be desirable. Please send curriculum vitae and the names of references to: **R. W. Butcher, The Graduate School of Biomedical Sciences, University of Texas Health Science Center at Houston, P.O. Box 20334, Houston, Texas 77225. Telephone: 713-792-4750. An Equal Opportunity Employer. Women and minorities are encouraged to apply.**

RESEARCH ENGINEERING SPECIALIST

Gallaudet College is seeking a research engineering specialist to provide technical support by designing, building, maintaining, and repairing audio and computer related equipment and to manage laboratory equipment inventory. Requires an M.E.E. or equivalent in related areas. Minimum of 3 years of experience designing and constructing audio or computer equipment. Must have a strong background in interfacing devices to computers. Must be able to design and construct devices such as A/D converters, D/A converters, and interprocess communications interfaces. Should be familiar with current micro processor technology and have a strong background in analog and digital audio systems. Competitive salary plus liberal benefits package. Apply in person or send résumé to:

**Gallaudet College
Personnel Office
College Hall, Room 7
800 Florida Avenue, NE
Washington, D.C. 20002**

Equal Opportunity Employer, M/F

RESEARCH HYDROLOGIST in the Career Federal Service, U.S. Department of Agriculture (USDA), Agricultural Research Service, Hydrology Laboratory, Beltsville, Maryland, is seeking a researcher to initiate, plan, and conduct investigations in one or more of the following areas: hydrologic modeling, soil water transport, groundwater hydrology, water quality, remote sensing, hydrometeorology, climatology, or snow hydrology. Must have a degree in hydrology or related field or equivalent education and experience, plus 3 years of professional experience in the subject matter specialization. Ph.D. is desirable. Must be U.S. citizen. Salary commensurate with experience (\$26,381 to \$52,262 per annum). Telephone: **Dr. Albert Rango** for position information on 301-344-3490. Send appropriate application and transcript to: **Ms. R. Cunningham** or telephone: 301-344-3954 at USDA, Agricultural Research Service, Personnel Operations Branch, Room 107, Building 003, BARC-WEST, Beltsville, Maryland 20705. Applications in response to this advertisement should be marked: NER-PA-011. Deadline for receipt of application is 30 September 1985. *An Equal Opportunity Employer.*

VISION RESEARCH SCIENTIST

The School of Aerospace Medicine is seeking a senior research psychologist (psychophysicist) to study the effects of lasers on vision and visual performance. The candidate must have 3 years of professional research experience or a Ph.D. in physiological psychology, and a demonstrated history of publication in peer-reviewed journals. Knowledge of physics, optics, and computer modeling of ocular systems is desirable. The position will be filled at the GS-180-12 level, \$31,619 per annum, and is open to all interested U.S. citizens. Applicants must submit SF-171 (personal qualifications statement). Submission of curriculum vitae is desirable. Applications must be received by 30 September 1985 at: 6570 ABG/DPCS, Attention: 85-40, Brooks Air Force Base, Texas 78235. Direct inquiries to Ms. Hudson, telephone: 512-536-3353. *An Equal Opportunity Employer.*

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SENIOR RESEARCH ASSOCIATE to perform experiments using laboratory animals, organic and inorganic chemicals, radioactive compounds, animal and human parasites, and analytical instruments and computers for physiological and biochemical determinations, and write experimental reports and publish in scientific journals. Background in chemistry required; knowledge in gastrointestinal allergies in parasite infections; and mucosal immunity with emphasis in immunohistochemical and cell separation techniques. Ph.D. degree required in microbiology or zoology with 2 years of experience in immunoparasitology. Must have published original work in gastrointestinal allergies in parasite infections. Forty hours per week with \$25,000 annual salary. Contact: Texas Employment Commission, Houston, Texas, or send résumé to: Texas Employment Commission, Placement Unit, Austin, Texas 78778, Job Order Number 4274095. *Ad paid for by an Equal Opportunity Employer.*

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POSTDOCTORAL FELLOWSHIP, NEUROANATOMY

The Department of Anatomy of the F. Edward Hébert School of Medicine, Uniformed Services University, invites applications for a postdoctoral fellowship in neuroanatomy. This fellowship is for 1 year and is renewable. Applicant must have either an M.D. or Ph.D. in biological science. Preference will be given to candidates with research experience in modern neuroanatomical techniques in mammals. Applications should be received by 27 September along with curriculum vitae, bibliography, and letters of recommendation. Send applications to:

Malcolm B. Carpenter, M.D., c/o Civilian Personnel
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POSTDOCTORAL FELLOWSHIPS. Applications are invited from candidates with an M.D., Ph.D., or equivalent degree and experience with recombinant DNA techniques to work on the molecular biology of hormone-responsive genes. Applicants should send curriculum vitae and three letters of recommendation to: Dr. C. Wayne Bardin or Dr. Olli A. Janne, Center for Biomedical Research, The Population Council, 1230 York Avenue, New York, New York 10021.

HERBERT H. JASPER POSTDOCTORAL RESEARCH FELLOWSHIP IN NEUROSCIENCE available. Position provides 1 year's salary and use of the exceptional facilities of the Center for Research in Neurological Sciences. Recipient works closely with investigator of choice, within a large group currently studying a wide range of topics in the vertebrate nervous system. Further information and application forms available from: Fellowship Committee, Centre de recherche en sciences neurologiques, Faculté de médecine, Université de Montréal, C.P. 6128, Succ. A, Montréal, Québec, Canada H3C 3J7. Deadline: 31 December 1985.

POSTDOCTORAL FELLOWSHIP IN ALCOHOLISM CLINICAL RESEARCH. Available October 1985 at New York State Research Institute on Alcoholism. Position combines clinical training and treatment research. Candidate must be M.D. or Ph.D. (clinical psychology) or equivalent eligible for New York licensure. Clinical assignment affiliated institutions combining inpatient and outpatient treatment and following AMSAODD guidelines. Research assignment in clinical area. Salary to \$30,968. Inquiries and curriculum vitae to: Irving A. Cohen, M.D., M.P.H., Research Institute on Alcoholism, 1021 Main Street, Buffalo, New York 14203. Telephone: 716-887-2557. *An Equal Opportunity/Affirmative Action Employer.*

SYMPOSIUM

**INTERNATIONAL SYMPOSIUM ON
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MODULATORS OF NON-SPECIFIC
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30 June to 3 July 1986
Columbia, Maryland

This is a satellite symposium to the 6th International Congress of Immunology. Four invited symposia will address: (i) Immune System Targets of Immunomodulation, (ii) Adjuvant Action of Microbial Products, (iii) Synthetic Adjuvants, and (iv) Modulators of Non-Specific Resistance. Poster presentations are solicited for poster/workshops on adjuvants and immunomodulators. Attendance is limited to 450. For more information, contact: Dr. Sherwood Reichard, Meeting Coordinator, RES Society, Medical College of Georgia, Augusta, Ga. 30912, Telephone: 404-828-2601.

SYMPOSIUM

**SW Foundation for Biomedical Research
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4-6 December 1985, San Antonio, Texas
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GRANTS

HERBAL MEDICINE RESEARCH GRANTS

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CONFERENCE

**The New York Academy of Sciences
CONFERENCE ON BIOREGULATORY
FUNCTIONS OF THROMBIN**
5 to 7 February 1986
Barbizon Plaza Hotel, New York City

The areas to be addressed at the symposium are: (i) Structure and Function Characterization of Thrombin, (ii) Thrombin Reactions During Coagulation, (iii) Thrombin Interactions with Platelets, (iv) Cellular Interactions with Thrombin, (v) Metabolic Responses to Thrombin, (vi) Thrombin Regulation and Inactivation.

There will be contributed poster sessions. The deadline for submission of abstracts is 30 September 1985. A 200-word summary of the work to be presented should be sent to: Dr. Daniel Walz, Department of Physiology, School of Medicine, Wayne State University, Detroit, Mich. 48201, and Dr. John Fenton II, Center for Laboratories and Research, New York State Department of Health, Albany, N.Y. 12201.

Chairs: Dr. John Fenton II, Center for Laboratories and Research, New York State Department of Health, Albany, N.Y. 12201; Dr. Marc Shuman, University of California Medical Center at San Francisco, 1282 Moffitt, 3rd and Parnassus, San Francisco, Calif. 94143; and Dr. Daniel Walz, Department of Physiology, School of Medicine, Wayne State University, Detroit, Mich. 48201.

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

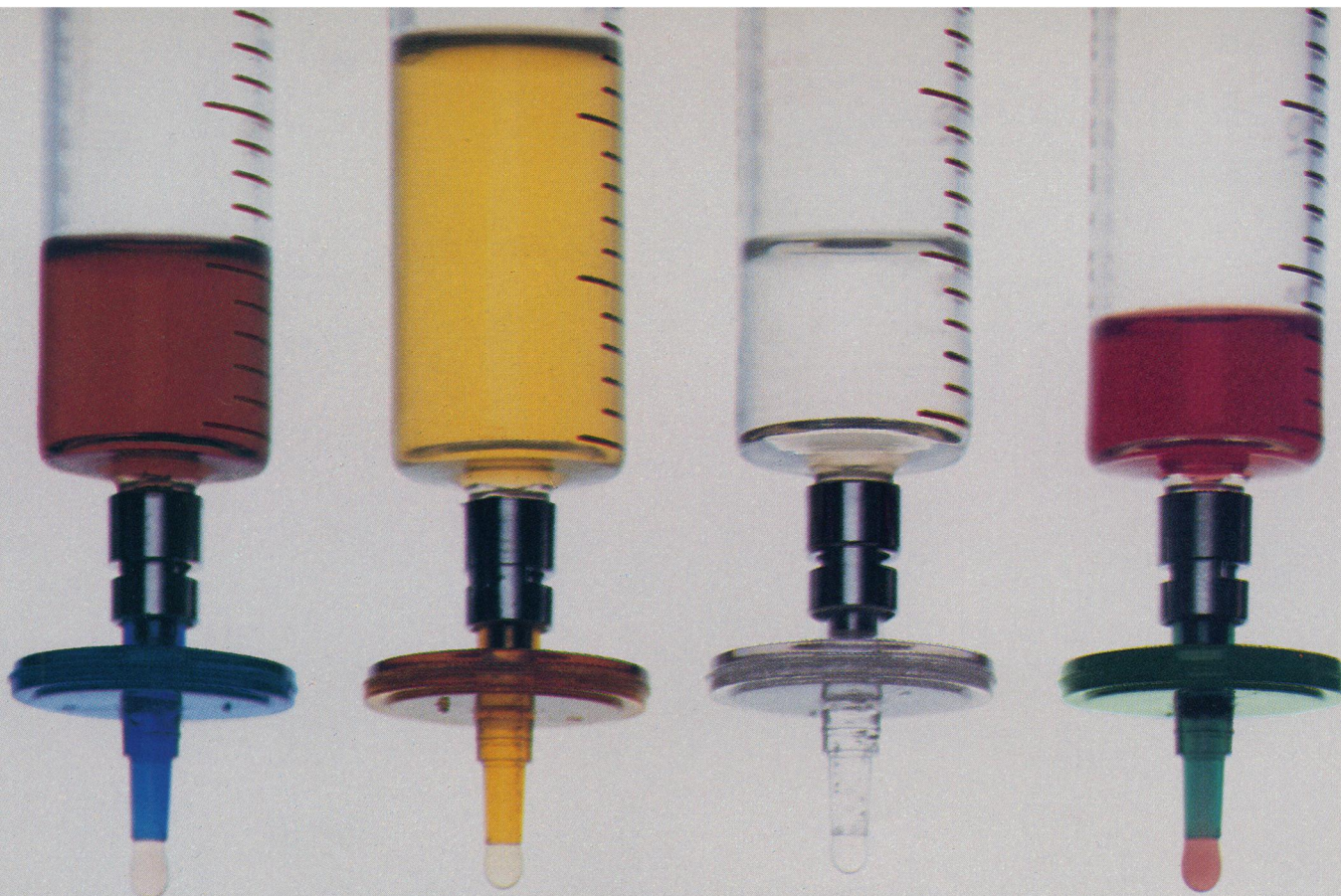
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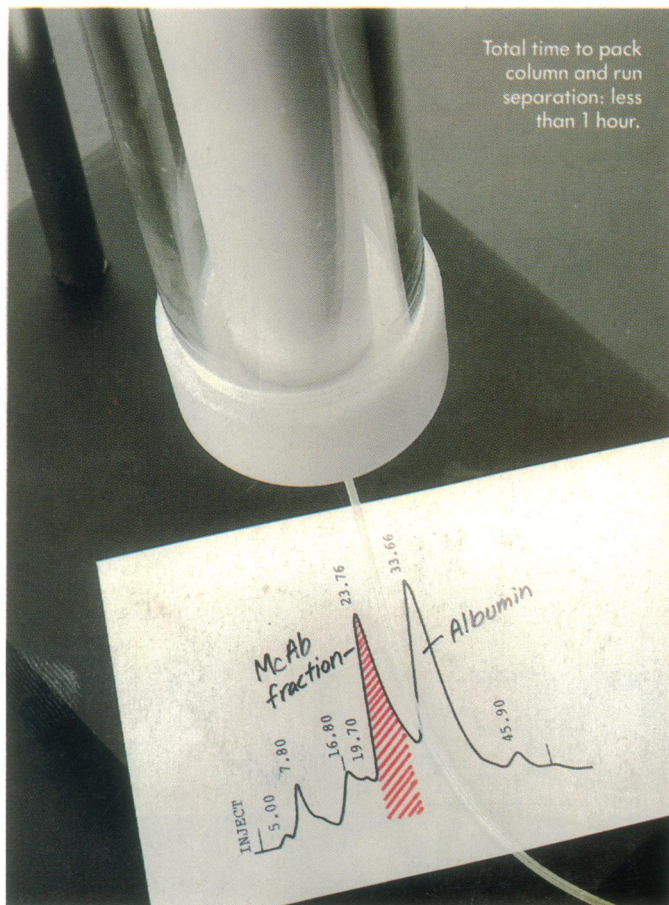
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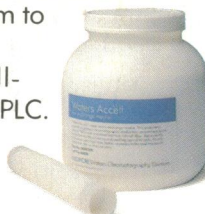
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