

swers currently available are rather poorly supported by the evidence of the morphology should not derogate from the attempt to seek them. One hopes this volume will stimulate a lot more work on such an interesting group of animals.

T. S. KEMP  
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## Cellular Neurobiology

**Neuromodulation.** The Biochemical Control of Neuronal Excitability. LEONARD K. KACZMAREK and IRWIN B. LEVITAN, Eds. Oxford University Press, New York, 1987. xii, 286 pp., illus. \$29.95.

In recent years it has become evident that neurons are subject to an extraordinary degree of modulation of diverse kinds. Neuronal properties can be modulated not only during long-term learning and development but also over a relatively short term as a function of motivational state and even during basic sensory and motor activities. This book attempts to explain some of the fundamentals of neuromodulation at the cellular level.

In the preface and chapter 1, the editors of this volume define neuromodulation as the capacity of neurons to change their electrical properties as a function of intracellular biochemical events that are evoked by synaptic or hormonal input. This simple and useful definition is broad enough to encompass most of the phenomena that researchers have called neuromodulatory, but narrow enough to avoid including so much that the concept becomes meaningless. The preface explains that the goal of the book is to introduce graduate students and researchers who do not directly work in the area to "the way one thinks about and studies neuromodulatory phenomena at the cellular and molecular level." In addition the book attempts to foster communication between biochemists and physiologists, the two main groups that study neuromodulation.

The first five chapters introduce general principles, with particular emphasis on ion channels and mechanisms of protein phosphorylation. The remaining eight chapters provide more detailed discussions of specific examples of neuromodulation. Benson and Adams discuss the control of rhythmic neuronal firing, with reference to studies of identified neuron R15 of *Aplysia*. Three chapters are devoted to the regulation of potassium currents, using as examples the firing of the bag cell neurons of *Aplysia*

(Strong and Kaczmarek), the serotonin-regulated current of *Aplysia* (Siegelbaum), and the muscarine-regulated current of vertebrate neurons (Jones and Adams). Papers by Ewald and Levitan and by Tsien discuss modulation of calcium channels in vertebrate and invertebrate neurons and in vertebrate heart cells. Zucker provides a general discussion of synaptic plasticity, with emphasis on the role of calcium. Finally, Gribkoff and Dudek review examples of neuromodulation in the mammalian brain, with specific treatments of long-term potentiation and modulation of neuronal burst activity. The chapters are liberally illustrated with line drawings. Literature citations have been purposely kept to a minimum.

On the whole, the book achieves what it aims to accomplish, but it has a few weaknesses, most of which stem from the fact that it is multiauthored. This results in some unevenness in style and unneeded redundancy. For example, calcium-activated potassium channels are discussed in at least six different places, and the relationship of different nomenclatures is not always made explicit. However, this is not a collection of self-serving minireviews. The chapters have been written and edited to teach and explain, and as a focused textbook *Neuromodulation* is generally successful. With few exceptions, the topics are treated in a straightforward manner, with a minimum of jargon. Although both of the editors work with invertebrate preparations, the book does not lay undue emphasis on invertebrate work, considering that the editors wished to restrict the discussions primarily to analytic cellular studies.

This volume should prove useful not only to the novice but to virtually any investigator interested in cellular neurobiology. It certainly should be examined by individuals who teach neuroscience-related courses. The book is generally up to date, but because of the present ferment in the field I recommend that if you are going to read it, you do so quickly.

IRVING KUPFERMANN  
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New York, NY 10032

## Books Received

**Clinical Pharmacology in Psychiatry.** Selectivity in Psychotropic Drug Action—Promises or Problems? S. G. Dahl *et al.*, Eds. Springer-Verlag, New York, 1987. xii, 290 pp., illus. \$53.90. Psychopharmacology Series, 3. Based on a meeting, Bethesda, MD, Sept. 1985.

**Cloning Vectors.** A Laboratory Manual Supplementary Update 1986. Elsevier, New York, 1986. Various pagged. In loose-leaf binder. \$33.25.

**Coding Microbiological Data for Computers.** Morrison Rogosa, Micah I. Krichevsky, and Rita R. Colwell. Springer-Verlag, New York, 1986. xii, 299 pp., illus. \$35. Springer Series in Microbiology. Sponsored by the Committee on Data for Science and Technology of the International Council of Scientific Unions.

**Cognition and Instruction.** Ronna F. Dillon and Robert J. Sternberg, Eds. Academic Press, Orlando, FL, 1986. x, 390 pp., illus. \$29.95.

**Coherence, Cooperation and Fluctuations.** Fritz Haake, Lorenzo M. Narducci, and Daniel Walls, Eds. Cambridge University Press, New York, 1986. x, 456 pp., illus. \$54.50. Cambridge Studies in Modern Optics, 5. From a symposium, Cambridge, MA. Oct. 1985.

**A Guide to Statistical Methods.** And to the Pertinent Literature. Lothar Sachs. Springer-Verlag, New York, 1986. xii, 212 pp. Paper, \$25. Text in English and German.

**Handbook of Behavioral Teratology.** Edward P. Riley and Charles V. Vorhees, Eds. Plenum, New York, 1986. xx, 522 pp., illus. \$65.

**High Resolution NMR Spectroscopy of Synthetic Polymers in Bulk.** Richard A. Komoroski, Ed. VCH, New York, 1986. xii, 379 pp., illus. \$75. Methods in Stereochemical Analysis, vol. 7.

**A History of Mathematics.** Florian Cajori. 4th ed. Chelsea, New York, 1985. viii, 524 pp., illus. \$22.50.

**Intelligence.** The Eye, the Brain, and the Computer. Martin A. Fischler and Oscar Firschein. Addison-Wesley, Reading, MA, 1987. xiv, 331 pp., illus., + plates. \$27.95.

**International Workshop on Applied Differential Equations.** (Beijing, June 1985.) Xiao Shutie and Pu Fuquan, Eds. World Scientific, Philadelphia, 1986. x, 446 pp., illus. \$63.

**Intractable Epilepsy.** Experimental and Clinical Aspects. Dieter Schmidt and Paolo Lucio Morselli, Eds. Raven, New York, 1986. xvi, 269 pp., illus. \$49.50. L.E.R.S. Monograph Series, vol. 5. Based on a workshop, Saint Germain-en-Laye, France, April 1985.

**An Introduction to Fetal Physiology.** Frederick C. Battaglia and Giacomo Meschia. Academic Press, Orlando, FL, 1986. xii, 257 pp., illus. \$45.

**Introduction to Molecular Embryology.** J. Brachet and H. Alexandre. 2nd ed. Springer-Verlag, New York, 1986. xiv, 229 pp., illus. Paper, \$19. Heidelberg Science Library.

**Mechanisms of Ionic Polymerization.** Current Problems. B. L. Eruslimskii. Consultants Bureau (Plenum), New York, 1986. x, 306 pp., illus. \$89.50. Macromolecular Compounds. Translated and edited from the Russian by Trans-Inter-Scientia.

**Melancholia and Depression.** From Hippocratic Times to Modern Times. Stanley W. Jackson. Yale University Press, New Haven, CT, 1986. x, 441 pp. \$35.

**Membrane Skeletons and Cytoskeletal-Membrane Associations.** Vann Bennett *et al.*, Eds. Liss, New York, 1986. xviii, 384 pp., illus. \$96. UCLA Symposia on Molecular and Cellular Biology, New Series, vol. 38. From a symposium, Park City, UT, March 1985.

**Membranes, Metabolism, and Dry Organisms.** A. Carl Leopold, Ed. Comstock (Cornell University Press), Ithaca, NY, 1986. 374 pp., illus. \$45. Based on a conference, Bellagio, Italy, Oct. 1985.

**Prostacyclin and Its Stable Analogue Iloprost.** R. J. Gryglewski, and G. Stock, Eds. Springer-Verlag, New York, 1987. xvi, 314 pp., illus. \$53.90. From a workshop, Bad Kissingen, Germany, Nov. 1985.

**Protein Engineering.** Applications in Science, Medicine, and Industry. Masayori Inouye and Raghupathy Sarma, Eds. Academic Press, Orlando, FL, 1986. xvi, 424 pp., illus. \$49.95. Based on a symposium, Stony Brook, NY, May 1985.

**Protein Structure, Folding, and Design.** Dale L. Oxender, Ed. Liss, New York, 1986. xviii, 332 pp., illus. \$80. UCLA Symposia on Molecular and Cellular Biology, New Series, vol. 39. From a symposium, Keystone, CO, March 1985.

**Quantum Concepts in Space and Time.** R. Penrose and C. J. Isham, Eds. Clarendon (Oxford University Press), New York, 1986. x, 358 pp., illus. \$80. Oxford Science Publications. Based on a conference, Oxford, U.K., March 1984.

**Vision and Information Processing for Automation.** Arthur Browne and Leonard Norton-Wayne. Plenum, New York, 1986. xiv, 484 pp., illus. \$59.50.

**Why Nothing Works.** The Anthropology of Daily Life. Marvin Harris. Touchstone (Simon and Schuster), New York, 1987. xxii, 208 pp. Paper, \$7.95. Revised edition of *American Now*.

**Wintergreen.** Rambles in a Ravaged Land. Robert Michael Pyle. Scribner's, New York, 1987. xiv, 303 pp., illus. \$19.95.

## Products & Materials

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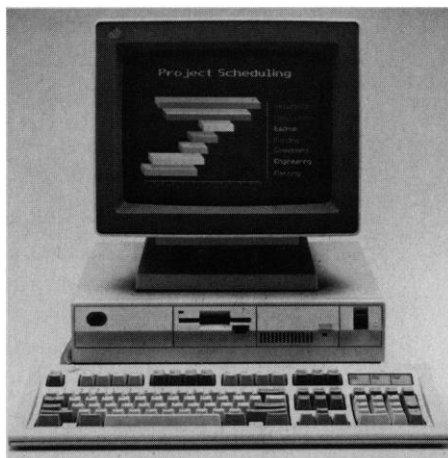
### On-Line Database Access Software

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Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card and placing it in a mailbox. Postage is free.

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Freelance Plus is a graphics software program with the same user interface as 1-2-3 and Symphony. Users can create and edit pie, bar, line, column, and scatter charts. With a mouse or digitizer, freehand drawing is possible. Features include grids, rulers, zoom, rotate, single-point editing, a full-screen cross-hair, gray-scale fill patterns, and a symbol library. Files may be imported from and exported to other programs. An optional companion program, Freelance Maps, is a software library that includes zip code maps, continent maps, and U.S. state capital maps. Freelance Plus operates on IBM PC and compatible computers with a Hercules Graphics Card, IBM Color Card, or IBM Enhanced Graphics Adapter. Lotus Development. Circle 611.

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### Literature

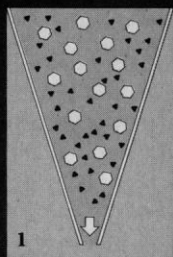
*Cytinert Serum Products 1987* describes photochemically disinfected sera for applications including cell physiology research. Lee BioMolecular Research Laboratories. Circle 618.

*Tecam Biological Stirrers* is an eight-page catalog of stirrers for suspension cell culture and microcarriers. Techne. Circle 623.

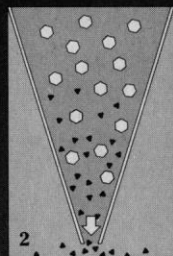
*Infrared Controlled CO<sub>2</sub> Incubator Brochure* describes two microprocessor-controlled incubators that maintain constant concentrations of CO<sub>2</sub>. Jouan. Circle 624.

*Mass Spec Source Newsletter* contains articles on service and maintenance of mass spectrometers and gas chromatographs. Scientific Instrument Services. Circle 625.

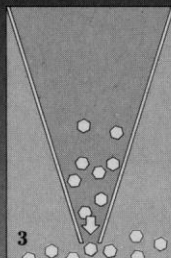
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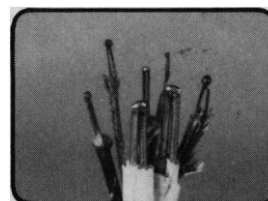
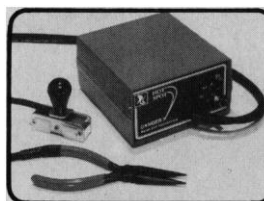
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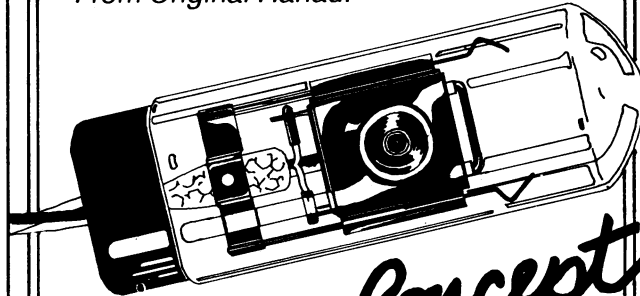
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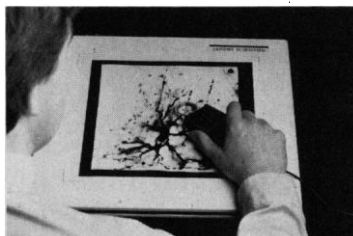


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**Tumor Virologist/Biochemist/Molecular Biologist, Ph.D. 1983.** Postdoctoral research and teaching experience. Broad research background: viral/cellular oncogenes, gene expression, herpesviruses, DNA tumor viruses, tumor biology, DNA replication, transcription, nucleic acid enzymology, RNPs structure and function, protein phosphorylation. Publications. Seeks challenging research/teaching position in pharmaceutical industry/hospital/university. Box 70, SCIENCE. 5/15, 29



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## CHAIRPERSON DEPARTMENT OF ANATOMY

The Medical College of Ohio invites applications and nominations for the position of chairperson of the Department of Anatomy. Candidates holding a Ph.D. or M.D. degree must be highly qualified individuals with nationally recognized credentials in neuroscience research. Applicants should also have an excellent record of research accomplishment in some aspect of neurobiology, academic administrative experience, and a commitment to teaching both medical and graduate students. The individual selected will be expected to provide leadership for an anticipated expansion of the department while maintaining a vigorous research program. The position offers an excellent opportunity to develop a leading academic department in the neurosciences area due to outstanding resources and scientific environment.

Send letters of interest, curriculum vitae, and names of at least three references to: **Dr. James H. Freisheim, Professor and Chairman, Department of Biochemistry, Medical College of Ohio, C.S. 10008, Toledo, OH 43699.** *An Equal Opportunity Employer.*

## POSITIONS OPEN

### ASSOCIATE PROVOST FOR RESEARCH UNIVERSITY OF MIAMI CORAL GABLES, FLORIDA

The University of Miami solicits applications for the position of Associate Provost for Research. The Associate Provost for Research has responsibility for all of the research programs at the University, including the School of Medicine, and the Rosenstiel School for Marine and Atmospheric Science. In addition, the Associate Provost for Research should be an individual who can foster interactions of the University with the state and federal government and with private industry in new research areas. Applicants should have a background in science or engineering, and individuals with experience in the interface between university and industry or university and government will receive preference.

Interested individuals should submit a complete curriculum vitae, as well as the names of three individuals who can be contacted for references, no later than 1 September 1987 to: **Dr. Luis Glaser, Executive Vice President and Provost, University of Miami, P.O. Box 248033, Coral Gables, FL 33124.**

*The University of Miami is an Equal Opportunity Employer.*

### CELLULAR AND MOLECULAR ENDOCRINOLOGY POSTDOCTORAL RESEARCH ASSOCIATE

**Available Immediately.** To study control of hormone secretion at the single-cell level by use of reverse hemolytic plaque assays in combination with recombinant DNA technologies and other modern biochemical and microscopic techniques. Ongoing projects include: (i) characterization of an extracellular mediator of prolactin action, (ii) ontogeny and functional interconversion of growth hormone and prolactin secreting cells, (iii) differential regulation of hormone release from cells that simultaneously release both of these hormones, and, (iv) molecular heterogeneity of secreted forms of hormone. Salary is highly competitive and commensurate with experience. Background in cellular or molecular biology and endocrinology is desirable, but not an absolute requirement. Please send curriculum vitae and names of three references to:

**Dr. L. Stephen Frawley  
Department of Anatomy and Cell Biology  
Medical University of South Carolina  
171 Ashley Avenue  
Charleston, SC 29425  
Telephone: 803-792-3526**

### CHAIRPERSON DEPARTMENT OF HUMAN ANATOMY

The School of Medicine, University of California, Davis, invites applications and nominations for the position of Chairperson of the Department of Human Anatomy. The department currently comprises ten tenure-track faculty, is housed in a modern laboratory building, offers graduate training in cell biology, anatomy, and related disciplines, and is responsible for the teaching of gross, neuro-, and microscopic anatomy and aspects of cell biology in the medical curriculum. Candidates must have a distinguished record of scholarship and professional achievement in the area of cell biology, as evidenced by publications and grant awards. They also must have leadership and administrative abilities and an interest in the departmental teaching mission. A commitment is required to building a strong, independent, extramurally funded research program in modern cell biology as well as to augmenting departmental research in this area; an opportunity to appoint a number of new faculty members is available. Applicants should submit a letter of application, curriculum vitae, a summary of research goals, and the names of five references to: **Dr. John W. B. Hershey, Search Committee Chairperson, Department of Biological Chemistry, School of Medicine, University of California, Davis, CA 95616.** Open until filled, but not later than 1 July 1988; applications should be received before 15 July 1987, to assure full consideration.

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

## SCIENTIFIC ADMINISTRATOR

Reporting to the Scientific Director for the Light Source and the Director for the Center of X-Ray Optics, the incumbent bears primary responsibility for preparing proposals, scientific reports, brochures and planning documents for both the Center for X-Ray Optics and for the Light Source. The incumbent will represent the Center and the Project in contact with governmental agencies, University of California and other national laboratories. Will participate in short and long range planning and implementation on issues of significance to the success of programs and activities. Will review scientific and program literature and provide technical assistance to internal and external scientists in the preparation and presentation of scientific material. Must have a proven record of facilitating key scientific activities, including the preparation of scientific materials in a research environment. Requires excellent written and verbal communications skills. Familiarity with University of California, Department of Energy, and other national laboratories as well as LBL helpful. An advanced degree in a Scientific field is desirable. To apply, send two copies of resume to Lawrence Berkeley Laboratory, 1 Cyclotron Road, Employment Office 90-1042, Berkeley, CA 94720. Refer to Job A/4113. An Equal Opportunity Employer M/F/H.



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## HEALTH SCIENTIST ADMINISTRATOR/ MICROBIOLOGIST

GS 13/14

**Bacteriology and Virology Branch, MIDP  
National Institute of Allergy and Infectious Diseases  
National Institutes of Health**

The applicant must have the following qualifications:

- a doctorate in microbiology or equivalent;
- recent experience in the performance of research on bacteria or bacterial diseases at the molecular level;
- an awareness of the state of the science in immunology, cell biology, genetics and biochemistry; and
- demonstrated administrative ability and experience in planning and developing research programs.

Research experience with sexually-transmitted diseases is desired but not required.

The incumbent will administer extramural research support programs on sexually transmitted diseases (except AIDS); hospital-associated infections; group B streptococcal infections; Legionnaires' disease and other bacterial diseases of public health importance. A full position description is available.

Applicants should submit Standard Form 171 (Application for Federal Employment) and their resume to:

**NIAID Personnel  
9000 Rockville Pike  
Building 31, Room 7A33  
Bethesda, MD 20892**

For more information call Mr. Richard Southers, 301/496-4634. All applications must be received by May 22, 1987. Applicants must be U.S. citizens.

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## PHARMACEUTICAL TECHNICAL COORDINATOR

### PHARMACEUTICAL DEVELOPMENT DEPARTMENT

Continued strong growth is generating exciting opportunities at ICI/Stuart Pharmaceuticals, one of the major pharmaceutical companies in the world. The candidate will assist in the management and development of the Pharmaceutical Development Department's computer based project management system and perform other administrative activities. The Pharmaceutical Development Department is involved in a broad range of scientific and administrative activities supporting new drug development and commercial products. The position requires the minimum of a B.S. in Pharmacy, Chemistry, or related field, a working knowledge of pharmaceutical product development and/or analytical development activities, and knowledge of the overall drug development process. Excellent oral and written communication skills are essential. Experience with DEC VAX DCL programming is strongly preferred.

Our modern facilities are located in a pleasant suburban setting. We provide excellent compensation and benefits with growth potential based on merit. Send resume including salary history to: **James K. Ellinghausen.**



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## Biomedical Scientist - JAPAN -

The Merck Sharp & Dohme Research Laboratories is a recognized leader worldwide in therapeutic research. Currently, we have a unique and challenging opportunity for a creative senior biomedical scientist to work in our Tokyo office.

The successful candidate will be responsible for maintaining interactions with Japanese pharmaceutical companies and academic institutions for the purpose of identifying potential product candidates in research or development for licensure. Requirements are a doctoral degree (Ph.D. or M.D.) in a biomedical science, at least 5 years of research experience in industry or academia, broad scientific background with state-of-the-art knowledge, good interpersonal skills. Must read, write, and speak Japanese and English fluently. Must have experience with scientists in Japan. Benefits are excellent and relocation expenses (if required) will be covered.

Our U.S. headquarters will be coordinating all domestic and international responses. Applicants worldwide are invited to be considered for the position. Please send curriculum vitae, salary requirements, and other supporting information to **Susan R. Jenkins, Merck Sharp & Dohme Research Laboratories, P.O. Box 2000, R80M-TL1, Rahway, New Jersey 07065, U.S.A.**

EEO/AA/VH Employer



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## POSITIONS OPEN

### ANTICIPATED CHAIRED PROFESSORSHIP

LOUISIANA STATE UNIVERSITY (LSU) FOUNDATION DISTINGUISHED PROFESSORSHIP IN BIOCHEMISTRY CHAIRED PROFESSORSHIP. The College of Basic Sciences announces the availability of a chaired professorship in Biochemistry sponsored by the LSU Alumni Foundation. QUALIFICATIONS: Candidates are sought in the specialty of peptide chemistry including but not limited to the following: bioactive peptides, synthesis, chemical modification of peptides, hormones, receptors. Applicants should have an ongoing nationally funded, internationally recognized research program. DEADLINE: 29 May 1987.

Applications and nominations should be sent to:

Search Committee, Chaired Professorship  
Louisiana State University  
Department of Biochemistry  
322 Choppin Hall  
Baton Rouge, LA 70803

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### DIRECTOR

#### CHRISTENSEN RESEARCH INSTITUTE MADANG, PAPUA NEW GUINEA

Applications invited for above position. Independently funded institute devoted to research in marine and terrestrial biology. Applicants should have Ph.D. in a relevant subject and experience in working in tropical Third World environments. Salary PNG Kina 17,000 and residential and travel leave benefits. Send curriculum vitae and names of two referees by 5 June 1987 to: Dr. Frank Talbot, Executive Director, The California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118-9961.

### EXPERIMENTAL IMMUNOPATHOLOGIST

The University of Connecticut Health Center and VA Medical Center invite applications for a full-time position with joint appointments in the Departments of Medicine, Pathology, and Surgery. Interested applicants must have an M.D. and preferably a Ph.D. degree with considerable experience in experimental immunopathology. Candidates must be established investigators with evidence of high quality independent research, extensive publications, and the capacity to generate extramural grant support. Essential qualities of the successful applicant are the ability to develop an independent research program involving organ transplantation and tumor biology. Experience in the production and application of monoclonal antibodies and in situ hybridization techniques is essential. These techniques will be used in the analysis of interactions between the coagulation and immune systems in studies of experimental and human allograft rejection and tumor immunobiology. Please submit a letter of application, curriculum vitae, three references, and research interests to:

Frederick R. Rickles, M.D.  
Department of Medicine  
University of Connecticut Health Center  
Farmington, CT 06032

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### FACULTY POSITION UNIVERSITY OF CALIFORNIA, IRVINE

The Department of Physiology and Biophysics is seeking faculty member with research interests in molecular, cellular, and/or structural aspects of biology. The appointment will be at the ASSISTANT PROFESSOR (tenure-track) level commencing fall 1987 or winter 1988. The successful candidate will be expected to conduct a vigorous, independent research program and contribute to the teaching of medical and graduate students. Applicants should have postdoctoral experience and demonstrated ability as a creative scientist. Send curriculum vitae, a brief description of research interests, and the names of three referees to: Professor Stephen H. White, Chairman, Department of Physiology and Biophysics, University of California, Irvine, CA 92717.

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## POSITIONS OPEN

### POSTDOCTORAL OR RESEARCH POSITION AVAILABLE IN CELLULAR IMMUNOLOGY FOR Ph.D. OR M.D.

Studies deal with immunopharmacology of immunosuppressive agents including mechanisms of action at the cellular and molecular level, and use in tolerance induction as part of a major program in transplantation. Salary range from \$24,000 to \$34,000, depending on prior experience.

Send curriculum vitae together with names of three references to: Marvin R. Garovoy, M.D., Director, Immunogenetics and Transplantation Laboratory, HSE-520, University of California, San Francisco, Third and Parnassus Avenues, San Francisco, CA 94143.

*The University of California is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

### FACULTY POSITIONS ANATOMY

The Department of Anatomy of the F. Edward Hébert School of Medicine, Uniformed Services University, invites applications for three faculty positions. Applicants must have either an M.D. or Ph.D. degree in the biological sciences. Teaching assignments involve gross anatomy, microscopic anatomy, and/or neuroanatomy and it is expected that applicants will have research experience and/or postdoctoral training. Preference will be given to candidates with research interests in cell biology, endocrinology, or various aspects of neuroscience. Applications should be received by 15 June 1987. Send curriculum vitae, bibliography, statement of teaching and research experience, and three letters of recommendation to:

Director, Personnel/Manpower  
Uniformed Services University of the Health Sciences  
(USUHS)

4301 Jones Bridge Road  
Bethesda, MD 20814-4799

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Affirmative Action Employer*

FACULTY POSITION(S), Department of Oceanography and Ocean Engineering (O/OE), Florida Institute of Technology. Outstanding individuals with a strong commitment to original research and teaching in all areas of geological oceanography/coastal processes are encouraged to apply. FIT is a private university located on the east central coast of Florida that offers great freedom to creative individuals. Curriculum vitae including a list of publications and a brief description of proposed research should be sent to: Dr. J. G. Windsor, Jr., Department of O/OE, Florida Institute of Technology, Melbourne, FL 32901.

### FACULTY POSITIONS AVAILABLE

The Department of Anatomy at Temple University School of Medicine is seeking applicants for two tenure-track positions at the rank of assistant professor. Candidates for each of these positions will be expected to teach in gross anatomy. Experience and an interest in teaching medical or dental students are essential.

Candidates shall demonstrate research productivity commensurate with the rank sought. Although no specific research area is required, it is preferred that each candidate's research incorporates some aspect of cell or molecular biology. The department has strength in developmental biology, reproductive biology, neurobiology, radiobiology, and cardiovascular and diagnostic imaging research.

A Ph.D. or M.D. degree is essential and postdoctoral research experience is required. These positions are available as of 1 July 1987. The deadline for applications is 26 June 1987. Qualified applicants are encouraged to send their curriculum vitae and references to: J. Robert Troyer, Ph.D., The John Franklin Huber Professor, and Chairman of Anatomy, Department of Anatomy, Temple University, School of Medicine, 3400 North Broad Street, Philadelphia, PA 19140. *Temple University is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### FACULTY POSITIONS

The Lucille P. Markey Cancer Center at the University of Kentucky invites applications for two tenure-track positions at the level of assistant professor. Appointments will be in an appropriate academic department in the College of Medicine. The areas of interest are cell biology, growth regulation, and gene transfer with specific emphasis on the molecular biology and function of oncogenes, gene expression, and development. The Markey Cancer Center has a new research facility and excellent core laboratories funded by the Commonwealth and by an NCI core grant. The research focus is multidisciplinary and productive interactions exist between basic and clinical scientists. Please send curriculum vitae, a statement of research interest, and names of three references to: Dr. Gilbert H. Friedell, Director, L. P. Markey Cancer Center, 800 Rose Street, Lexington, KY 40536-0093.

*The University of Kentucky is an Equal Opportunity Employer.*

FACULTY-NEUROPSYCHOLOGIST: The Department of Psychiatry, University of Connecticut Health Center is accepting applications for a position in clinical neuropsychology. We are seeking applicants with experience in clinical assessment and a strong research interest in substance/alcohol abuse to participate in funded grants in this area. Candidates who have experience in psychophysiology and/or human behavioral analysis will be given preference. Connecticut licensing or eligibility is essential. Send résumés to: Dr. Victor Hesselbrock, Department of Psychiatry, University of Connecticut Health Center, Farmington, CT 06032.

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### FUNGAL BIOTECHNOLOGY

As part of our long-term program of strain improvement, Monterey Mushrooms (an AMFAC Company) has two positions open at the RESEARCH ASSISTANT level. The first position will help develop a genetic transformation system for *Agaricus bisporus*. This research will involve the construction of plasmid vectors for the transformation of *A. bisporus* protoplasts. The second position will assist in a program to clone specific genes which have been shown to affect mushroom quality.

Both of these positions require a B.S. or M.S. degree with "hands on" experience in molecular biology. The Mushroom Research Laboratory is located near Monterey Bay about 20 miles south of Santa Cruz, California. Qualified applicants should contact: Dr. Nigel Dunn-Coleman at Monterey Mushrooms Research Lab, P.O. Box 189, Watsonville, CA 95077; telephone: 408-728-8321. The closing deadline is 30 May 1987.

HEMATOLOGY/ONCOLOGY RESEARCH: M.D. or Ph.D. with expertise in lymphocyte studies in a project concerning chronic lymphocytic leukemia. Experience with B cell biology, cellular immunology, and oncogene studies preferred. Competitive salary and benefits. Send curriculum vitae to: Kanti R. Rai, M.D., Chief, Division of Hematology/Oncology, Long Island Jewish Medical Center, New Hyde Park, NY 11042. *An Equal Opportunity Employer.*

### IMMUNOLOGIST

The Department of Microbiology and Immunology at Temple University School of Medicine is currently recruiting an individual at the assistant/associate professor level to complement an active group of immunologists. A doctoral degree, at least 2 years of postdoctoral experience, and a strong background in fundamental immunology are required. We are particularly seeking an individual with an interest in molecular or cellular aspects of microbial immunology (particularly immunoparasitology), neuroimmunology, T-cell regulation or recognition, or accessory cell function. Successful candidates should be able to establish an independent research program, and will be members of the graduate faculty with responsibility for teaching both graduate and medical students. Send curriculum vitae and names of three references to: Thomas J. Rogers, Ph.D., Chairman, Immunology Search Committee, Department of Microbiology and Immunology, Temple University School of Medicine, 3400 North Broad Street, Philadelphia, PA 19140. *Equal Opportunity/Affirmative Action Employer.*

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## U.S. PATENT AND TRADEMARK OFFICE

### POSITION:

#### Microbiologist/Patent Examiner

Opportunity involves the scientific and legal evaluation of patent applications involving recombinant DNA, molecular and cellular immunology, molecular genetics, cell biology, microorganisms, cell culture, fermentation, enzymology or clinical chemistry.

### QUALIFICATIONS:

A full 4-year or longer professional curriculum in an accredited college or university leading to a Bachelor's Degree or higher with specific study in Molecular Biology, Biochemistry, Immunology, Microbiology or cell Biology.

A Ph.D. or M.S. degree with relevant research experience is preferred. A B.S. degree with significant research experience will be considered.

Research Experience in any of the following areas would be beneficial: DNA cloning, gene expression, sequencing techniques, hybridoma technologies, monoclonal antibody applications, mammalian or plant cell lines, cell culture, immunoassays, hybridization techniques, fermentation, enzymatic reactions, diagnostics and automation of clinical analysis.

### SALARY:

Dependent upon experience and qualifications.

### LOCATION OF POSITION:

Arlington, VA

For further information contact:

**Patent and Trademark Office  
Office of Personnel, C&E  
CPK 1, Suite 700  
Washington, D.C. 20231  
703-557-1244  
1-800-368-3064**

## Research Scientist

### Animal Health Research

Pfizer Inc., a worldwide leader in the animal health, pharmaceutical and healthcare industries, has an immediate opening for a creative research scientist at its modern Animal Health Research facility in Terre Haute, Indiana. As a member of the Discovery Research team, you will develop and conduct both basic and applied research to evaluate potential antiparasitic and anticoccidials for domestic animals.

The successful candidate will have a PhD from an accredited university with emphasis in veterinary parasitology, and experience in coccidiosis research. Publications of important findings will be encouraged.

Pfizer offers an exceptional opportunity for professional recognition and career growth with competitive compensation, comprehensive benefits and relocation assistance. Interested qualified applicants should submit a current resume with the names of three references to: Christina Batjer, Senior Personnel Supervisor, Pfizer Inc., P.O. Box 88, Terre Haute, Indiana 47808.



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## PH.D. PHARMACEUTICAL SCIENTIST

Abbott Laboratories. At the forefront in scientific research and development, with a commitment \$3.8 billion strong. Our Pharmaceutical Products Division is forging ahead in the discovery of new treatments for a variety of medical disorders. In support of this research, we are now seeking a Ph.D. Scientist to conduct studies in our Product R&D area.

Specifically, position is responsible for studies of solid state physical chemical properties of drug candidates as related to formulation development. We require at least 0-5 years experience plus a strong background in physical and analytical chemistry, which should include both experimental and theoretical experience in solid state chemistry and familiarity with DCS, solution calorimetry, hot stage microscopy and surface area analysis. HPLC experience and an understanding of solution chemistry and thermodynamics are desirable. Good communication skills are essential.

Rated one of the nation's five best managed companies for 1986 by Dun's Magazine, Abbott is committed to that same level of excellence in all areas. We provide an exceptional salary and benefits package, which includes profit sharing and stock retirement plan. And we're located in an attractive suburban area just 30 miles north of Chicago. **For confidential consideration, send your resume with salary history to: Patricia Handy/Corporate Placement, Dept. SM/5-15.** Abbott is an Affirmative Action Employer.

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### TENURED POSITION

#### REPRODUCTIVE BIOLOGIST TO DIRECT GAMETE BIOLOGY RESEARCH PROGRAM

Established Ph.D. basic scientist to direct research program in academic environment and run new IVF-ET program. Experience in tissue culture and sterile technique mandatory. Previous IVF-ET experience preferable. Salary negotiable. For more information send C.V. to:

Sandara Ann Carson, M.D.  
Department of Obstetrics and Gynecology  
University of Tennessee, Memphis  
University Physicians Foundation, Inc.  
956 Court Avenue, Room D-324  
Memphis, TN 38163

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### RESEARCH FACULTY POSITION

IN

#### NEUROBIOLOGIC STUDIES IN HEARING AND SPEECH

A new full-time research faculty tenure track position is immediately available for an individual with research interests in either:

- (1) basic physiologic mechanisms of auditory/vestibular systems,
- (2) neurobiology of the larynx, or
- (3) sensory-motor control of orofacial structures.

This individual will be the Director of the Research Program within the Division of Otolaryngology and will contribute to the teaching of graduate and medical students. Address inquiries and letters of interest to **Allan M. Rubin, MD, Ph.D., Chief of Otolaryngology, Medical College of Ohio, CS #10008, Toledo, Ohio 43699.**

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### PROGRAM DIRECTOR

To provide management and leadership in the development and implementation of technical assistance programs related to the use of simulators, artificial intelligence, and expert systems in training and education.

Requires a PhD or equivalent in engineering field related to the use of simulators; good entrepreneurial, interpersonal, and writing skills; and ability to manage technical projects, contracts, and budget development.

Send resume, salary requirements, and references to Employment Office.



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## RESEARCH SCIENTISTS

As the result of our continuing commitment to research, Ayerst Laboratories, subsidiary of Fortune 100 American Home Products Corporation, is seeking three motivated scientists to join our Immunology Dept.

### OSTEOARTHRITIS

A Ph.D. research scientist is sought with a doctorate in Immunology or Biochemistry and two years or more post-doctoral experience with in vivo models of osteoarthritis. Experience in cartilage metabolism, hydrolase assays, and proteoglycanase isolation and characterization is a strong plus. The successful candidate will establish a program in osteoarthritis and lead in the discovery of novel therapies for preventing cartilage destroying pathologies. Collaborative efforts with ongoing research projects on arthritis, immunoregulation, and bone disease will be encour-

aged. RESPOND TO DEPT. PG.

### BONE METABOLISM

An entry level Ph.D. scientist is sought to establish a calcified tissue histology research program to complement our current bone research activities. Experience with calcified tissue specimen preparation and evaluation is required. Experience in cell biology and animal models of bone metabolism is highly desirable. The successful candidate will also collaborate with research investigations in the arthritides, periodontal disease, and bone regulatory proteins. RESPOND TO DEPT. MH.

### FACS OPERATOR

Applications are invited from FACS scientists with a strong interest in immunoregulation. The successful candidate will have extensive experience with flow cytometry and have demon-

strated the capacity to integrate FACS research into an active immunology program. Both B.S. and M.S. candidates will be considered. RESPOND TO DEPT. PW.

Ayerst offers an excellent salary and benefits package together with outstanding opportunities for career advancement. Our modern facilities are conveniently located in a picturesque central New Jersey setting.

Interested candidates should forward their curriculum vitae indicating their salary history and position of interest to:

**Personnel Manager**

**Ayerst**

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**CN8000**

**Princeton, NJ 08543-9990**

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## DIRECTOR, ENVIRONMENTAL EPIDEMIOLOGY AND BIOMETRY DIVISION

The U.S. Environmental Protection Agency (EPA) is seeking candidates for the position of Director, Environmental Epidemiology and Biometry Division (EEBD). The position is located in the Health Effects Research Laboratory (HERL), Research Triangle Park, NC. This is a permanent full-time position. The salary range is \$53,830 to \$69,976 per annum, commensurate with qualifications. Candidates having M.D. degrees may be eligible for a \$10,000 annual supplement.

HERL has a staff of about 325, over 100 of whom hold doctoral level degrees. The Laboratory has a diverse program consisting of six divisions, namely EEBD, Genetic Toxicology, Inhalation Toxicology, Neurotoxicology, Developmental and Cell Toxicology, and Toxicology and Microbiology. The program includes in vitro, animal, human clinical, and epidemiological research designed to address issues related to the health effects of air and water chemical and biological pollutants.

The EEBD has a multidisciplinary program organized into three branches: Epidemiology, Biostatistics, and Data Management. The staff numbers about 23. The major missions are to conduct research in biostatistics and epidemiology, with a focus on outdoor and indoor air pollutants, water pollutants, and toxic chemicals and to provide biostatistical and data management support to HERL research programs. The program is highly interactive with other HERL divisions. A substantial portion of the epidemiology and biostatistical program is extramural, with scientists playing a major role in program development and direction. The primary responsibilities of the Director are to direct and manage the program. This includes developing the program to meet the evolving needs of EPA, presenting the program, developing and managing budgets, supervising the staff, directing the progress of the program, and ensuring the scientific quality and productivity of the program.

Qualifications for the position include:

1. An M.D. or a doctoral degree in epidemiology, statistics, health science or fields closely related to these.
2. At least five (5) years of post-doctoral research experience in epidemiology and/or biostatistics. Some experience in these fields as related to environmental and/or occupational health effects is necessary.
3. Experience in developing and managing budgets.
4. At least three (3) years of experience as a supervisor of a scientific/professional staff.
5. Applicants must have recognized scientific expertise in environmental and/or occupational epidemiology and/or biostatistics which is evidenced by multiple publications in the peer-reviewed literature and invitations to participate in national and international meetings/panels on these topics.
6. Proven ability to provide leadership in directing the development and progress of a creative and effective research program in environmental epidemiology and biostatistics.
7. U.S. citizenship is required.

Forward curriculum vitae and names of three references prior to June 8, 1987 to:

**Dr. F. Gordon Hueter, Director, HERL**  
c/o Marcy C. Kesselman, PMD (MD-29)  
U.S. Environmental Protection Agency  
Research Triangle Park, NC 27711

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## NATIONAL UNIVERSITY OF SINGAPORE DEPARTMENT OF BIOCHEMISTRY

Applications are invited for teaching appointments in the Department of Biochemistry.

For appointments at Lecturer level and above, candidates should have either a PhD degree or an approved basic medical or dental degree with a recognised higher professional qualification. A good research record will be a decided advantage.

Candidates applying for Senior Tutorships must possess either a first class honours degree in Biochemistry or an approved basic medical or dental degree. Under the Senior Tutorship Scheme, the appointee will be given the opportunity to pursue a relevant higher qualification, upon receipt of which, he will be considered for appointment to a Lectureship.

Gross annual emoluments range as follows:

Senior Tutor	\$S23,470-38,660
Lecturer	\$S28,300-58,680
Senior Lecturer	\$S53,160-94,090
(US\$1 = S\$2.14 approximately)	

The commencing salary will depend on the candidate's qualifications, experience and the level of appointment offered. In addition, appointees at Lecturer level and above who possess an approved basic medical or dental degree and relevant higher academic/professional qualifications may opt to retain consultation fees up to 60% of their annual gross salary or to receive a fixed annual clinical allowance as follows:

Lecturer	\$S6,000/9,000
Senior Lecturer	\$S15,000

Leave and medical benefits will be provided. Depending on the type of contract offered to Lecturers and above, other benefits may include: provident fund benefits or an end-of-contract gratuity, a settling-in allowance of S\$1,000 or S\$2,000, subsidised housing at nominal rentals ranging from S\$100 to S\$216 p.m., education allowance for up to three children, subject to a maximum of S\$10,000 per annum per child, passage assistance and baggage allowance for the transportation of personal effects to Singapore. Provident fund benefits will be provided to appointees at Senior Tutor level.

Application forms and further information on terms and conditions of service may be obtained from:

**The Director**  
Personnel Department  
National University of Singapore  
10 Kent Ridge Crescent  
Singapore 0511

**The Director**  
North America Office  
National University of Singapore  
780 Third Avenue, Suite 2403  
New York, N.Y. 10017, U.S.A.  
Tel: (212) 751-0331

## CARBOHYDRATE CHEMISTRY

GENETICS INSTITUTE, INC., located in Cambridge, MA, has expanded its research and development activities in the field of biotechnology to carbohydrate chemistry and biochemistry. The Carbohydrate Chemistry Group will focus on the biochemical, immunological, pharmacological, and structural aspects of protein-linked oligosaccharides in recombinant DNA products.

We have immediate openings at the B.S., M.S. or Ph.D. levels for individuals interested in the chemistry and biochemistry of protein-linked oligosaccharides. Currently, three positions are open:

### CARBOHYDRATE COMPOSITION ANALYSIS

Individual will be responsible for the characterization and quantification of the carbohydrate components of recombinant glycoproteins. Although previous experience with carbohydrate polymers is preferred, talented individuals with experience in gas chromatography and/or mass spectroscopy are encouraged to apply.

### CARBOHYDRATE STRUCTURAL ANALYSIS

Primary responsibility of this position is to investigate the relationship between oligosaccharide structure and the processing, secretion, and biological function of recombinant glycoproteins. Candidates should be familiar with modern chemical and biochemical techniques for the structural determination of protein-linked oligosaccharides, especially permethylation analysis. Candidates also interested in the development and implementation of new methodologies in carbohydrate structural analysis are especially encouraged to apply.

### CARBOHYDRATE BIOCHEMIST

An opening exists for a Ph.D. level scientist preferably with at least two years of postdoctoral experience in the general area of carbohydrate biochemistry. Candidates should be strongly motivated to pursue structure/function relationships of oligosaccharides/proteins and possess the requisite experimental background to address this area. This individual will also be responsible for the implementation and further development of HPLC techniques for the isolation and purification of glycoconjugates.

Genetics Institute offers a stimulating scientific environment in addition to excellent salary, equity participation, and benefits package. Qualified candidates should forward their resumes, in confidence, to Barbara Covell, Personnel Manager.

## Genetics Institute

87 CambridgePark Drive, Cambridge, MA 02140  
An Equal Opportunity Employer

## POSITIONS OPEN

### IMMUNODIAGNOSTIC CHEMIST— COLORADO

Perform independent research and assay development in solid-phase diagnostics. Must have experience in clinical testing, ligand development, protein purification, covalent coupling, and end product evaluations. Requires M.S. or Ph.D. in biochemistry/immunology with ten plus years of experience in diagnostic product development. 510k Medical Device experience preferred. Send résumé, references, and salary requirements to: **John Hanlin, BioStar Medical Products, 5766 Central Avenue, Boulder, CO 80301.**

### IMMUNOLOGY LABORATORY DIRECTOR

**Ph.D. IMMUNOLOGIST** wanted to be the supervising scientist for the research laboratories of a well-funded biotech startup in the Boston area. Must have experience with in vitro immunization and activation of lymphocytes, as well as laboratory management. This position will report directly to the Scientific Director of the company, and will be a unique mixture of basic and clinically oriented research, requiring both scientific and administrative skills. Opportunity available for academic collaborations and scientific publications. Please send curriculum vitae with salary requirement and date of availability to: **P.O. Box 1347, Brookline, MA 02146.**

**INSECT PHYSIOLOGIST** to participate in a research program investigating the mechanisms regulating peripheral chemosensory input and the mediation of host-seeking and other behaviors in hematophagous arthropods. Applicants should have Ph.D. with experience in insect physiology, endocrinology, or related areas. Some knowledge of neurophysiology helpful but not required. Duties will include preparation of grant proposals, designing and conducting experiments, analyzing data, and publication of the results. Initially, the successful candidate will work on existing projects but will be expected to develop own research interests. Salary: \$23,000 to \$31,000. Start: 1 July 1987. Interested candidates please send curriculum vitae and the names of three references to: **Edward Davis, Vector Biology Program, SRI International, Menlo Park, CA 94025. Telephone: 415-859-4022.**

*An Equal Opportunity Employer.*

**INSTRUCTOR IN MOLECULAR VIROLOGY**, Research Track, Department of Neurology, University of Utah. Seeking person with interests in the molecular basis of viral infections. Ph.D. and postdoctoral experience required. Send curriculum vitae, description of research interests and plans, and three letters of recommendation to: **William G. Stroop, Neurovirology Laboratory [151B], VA Medical Center, 500 Foothill Drive, Salt Lake City, UT 84148.** Application deadline: 1 June 1987. Applications will be accepted after the deadline if qualified person has not been identified. *The University of Utah is an Equal Opportunity Employer.*

University of Pennsylvania: Department of Pathology and Laboratory Medicine is seeking a **JUNIOR FACULTY MEMBER** with M.D., M.D./Ph.D., or Ph.D. degrees with a major interest in molecular biology and a service interest in directing an already established molecular diagnosis laboratory. Candidates should be Board-eligible or certified and have a commitment to a research-oriented career in laboratory medicine. Excellent opportunities exist in basic and applied areas of research. Applications with curriculum vitae and names of three references should be sent to: **Dr. D. S. Young, Department of Pathology and Laboratory Medicine, Hospital of the University of Pennsylvania, 3400 Spruce Street/4283, Philadelphia, PA 19104.** *The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer.*

**JUNIOR FACULTY POSITION IN MOLECULAR BIOLOGY.** Two to three years of postgraduate published experience in cDNA library preparation, gene cloning using lambda-gt11, gt10, and expression vector work with Cos cells is required. Three years solid funding available to study gene expression in x-irradiated mammalian cells in vitro. Send résumé to: **Joel S. Greenberger, Professor and Chairman, Department of Radiation Oncology, UMass Medical Center (UMMC), Worcester, MA 01605.** *UMMC is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### UNIVERSITY OF HONG KONG LECTURER IN PHYSIOLOGY

Applications are invited for a lectureship in physiology. The appointee will be required to participate in the teaching of physiology to dental and medical students. Preference will be given to applicants with higher degrees in physiology or medical or dental degrees. Some teaching experience is desirable, together with a special research interest in one of the following areas: (i) cardiovascular physiology, (ii) neurophysiology, (iii) biophysics, (iv) biomedical engineering, (v) gastroenterology.

Annual salary (superannuable) is on an 11-point scale: HK\$176,880 to \$295,680 (US\$1 = HK\$7.80 approximate at 5 April 1987). Starting salary will depend on qualifications and experience. A medically qualified appointee who has just completed his preregistration year will be appointed as a Lecturer at the minimum point of the scale. At current rates, salaries tax will not exceed 16½ percent of gross income. Housing benefits at a rental of 7½ percent of salary, children's education allowances, leave, and medical benefits are provided.

Further particulars and application forms may be obtained from the: **Secretary General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF, or from the Appointments Unit, Registry, University of Hong Kong, Hong Kong. Closes: 3 July 1987.**

**MANAGING EDITOR:** Science Editor/Writer for major museum of natural history, anthropology, and art. Manage production of a quarterly magazine, newsletter, brochures, scientific publications. Applicants must have proven experience in editing, popular and technical writing, design and layout; background in natural history or anthropology; M.S. or Ph.D. and professional experience in museums or higher education preferred. Salary negotiable, 12-month position now open. Fringe benefits, *Equal Opportunity Employment/Affirmative Action Employer.* Send résumé, names of three references, and supporting materials by 15 June 1987 to: **Edward A. Munyer, Assistant Director, Illinois State Museum, Springfield, IL 62706.**

### MARINE RESEARCH

**ASSISTANT DIRECTOR FOR MARINE RESEARCH PROGRAM.** Write institutional proposals and reports; review research project proposals; prepare budgets; coordinate with funding agencies and support groups; manage office staff. Required: M.S. or M.A.; experience in management and teaching or research. Preferred: Ph.D.; marine-related experience, computer experience. Salary in high \$20's to mid \$30's, depending on qualifications. Excellent benefit program. University of Southern California (USC) main campus; some travel; start September. Send letter, résumé, and names of four references by 29 May 1987 to: **Sea Grant Search Committee, care of Dr. Robert Friedheim, University Park, NBA, Los Angeles, CA 90089-0341.** *USC is an Affirmative Action/Equal Opportunity Employer.*

Growing Pacific Northwest biotech company seeks **MOLECULAR BIOLOGIST** to lead effort in DNA probe diagnostics. Successful candidate will have a Ph.D. and postdoctoral experience in molecular biology, including gene cloning, DNA sequencing, and hybridization analysis. Special consideration given to those who have demonstrated innovative approaches to DNA probe diagnostics. Responsibilities include development of commercial DNA probes and supervision of DNA research group. Excellent compensation program and benefits. Send résumé by 15 June 1987 to **SCIENCE Box 68.** *An Equal Opportunity Employer.*

**MOLECULAR NEUROBIOLOGIST** position available, tenure-track, at the Seattle Veterans Administration Medical Center. Individual will join active research group interested in neurobiology and aging in the Geriatric Research, Education and Clinical Center and the Department of Medicine of the University of Washington with joint appointment in a basic science department. Research applying recombinant DNA techniques to study nervous system function is of particular interest. Send curriculum vitae, and description of current research interests to: **D. M. Dorsa, Ph.D., Veterans Administration Medical Center, GRECC (182B), 1660 South Columbian Way, Seattle, WA 98104.**

*The University of Washington is an Equal Opportunity Employer.*

## POSITIONS OPEN

### MOLECULAR BIOLOGY HORMONES AND GROWTH FACTORS

Individuals with a strong background in molecular biology and a Ph.D. degree are invited to apply for **POSTDOCTORAL FELLOW AND/OR RESEARCH ASSOCIATE** position in an established molecular endocrinology laboratory. Projects include the study of the structure, function, and regulation of newly discovered members of the prolactin family of hormones, and pituitary growth factors. Applicants should send curriculum vitae, a brief description of their research interest, and three letters of reference to: **Dr. Henry G. Friesen, Department of Physiology, University of Manitoba, 770 Bannatyne Avenue, Winnipeg, Manitoba, Canada R3E 0W3.** Both men and women are encouraged to apply. *In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.*

**Ph.D. POLYMER CHEMIST:** This position involves the research and commercial development of plastic products for use in automobile windshields and development and modification of processes to produce them. The candidate would be required not only to discover and demonstrate new products and processes, but to work with manufacturing personnel to implement them in existing or new plant facilities. This position requires a Ph.D. in polymer chemistry as well as a B.S. in chemical engineering. The job requires a high degree of skill in the scientific areas of process engineering; use of computers to analyze data; state-of-the-art nuclear magnetic resonance spectroscopy, gel permeation chromatography, infrared and ultraviolet spectroscopy, and physical synthesis. Annual salary range: \$40,200 to \$45,000. Send résumé to: **Parkersburg Job Service, West Virginia Department of Employment Security, 36th and Murdoch Avenue, P.O. Box 658, Parkersburg, WV 26101; telephone 304-485-5566.** Job Order No. WV0116041.

### PLANT PATHOLOGIST TWYFORD U.S.A., CALIFORNIA

Twyford Plant Laboratories, Inc., a biotechnology and plant production company, announces an immediate opening for Plant Pathologist. The successful candidate will oversee a program for meristem culture and disease indexing, as well as monitor general laboratory and greenhouse disease control. Qualifications include: Ph.D. and training in horticulture pathology complemented with a working knowledge of plant tissue culture, physiology, and greenhouse management. Candidates with industrial experience are encouraged to apply. Please send curriculum vitae to:



**Dr. Irwin Chu, President**  
Twyford Plant Laboratories, Inc.  
15245 Telegraph Road  
Santa Paula, CA 93060

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**POSTDOCTORAL FELLOW.** Ph.D. A 2-year postdoctoral fellowship is available at the University of Pennsylvania to explore the expression and function of the PDGF receptor in normal and malignant cells using a molecular genetic approach. Send curriculum vitae to: **Dr. Charles D. Scher, The Children's Hospital of Philadelphia, 34th and Civic Center Boulevard, Philadelphia, PA 19104.**

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**POSTDOCTORAL FELLOWS:** Two positions available immediately in multidisciplinary lab engaged in aging research. First project investigates immune function in dietary restricted mice (Ph.D. in immunology required) and second involves enzymology and DNA repair studies (Ph.D. in biochemistry required). Salaries funded by NIH training grant. Submit curriculum vitae and names of three references to: **Dr. Roy Walford, Department of Pathology, University of California, Los Angeles, Medical School, Los Angeles, CA 90024.**

**POSTDOCTORAL POSITION** available summer, 1987. Project area: Mechanism of DNA photorepair as catalyzed by yeast DNA photolyase. Please send curriculum vitae and names of three references to: **Dr. Marilyn Jorns, Department of Biochemistry, Hahnemann University, Broad and Vine, Philadelphia, PA 19102.**

## Research Biologist

The Agricultural Research Division of American Cyanamid Company has a position available for a Research Biologist whose duties will include conducting microbial mutagenesis evaluations, under minimal supervision, in support of discovery, development and product registrations work done in compliance with Federal GLP regulations. Responsible for operation, maintenance and record keeping of laboratory equipment and ordering supplies. Conducts preliminary data evaluations (judgment required) and uses a computer assisted data entry system to register data and prepare reports.

Applicants will have a B.S. degree in mammalian biology or microbiology with 6 months to 1 year laboratory experience, beyond college work, in a biology lab.

American Cyanamid offers a competitive compensation and benefits package. For prompt and confidential consideration, forward your resume to the Employment Office.



**American Cyanamid Company**  
Agricultural Research Division  
P.O. Box 400  
Princeton, NJ 08540  
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## RESEARCH OPPORTUNITIES IN CANCER THERAPEUTICS

The Dow Chemical Company, in Midland, Michigan, is a recognized world leader in the chemical industry. Expanded research efforts in the area of cancer therapeutics and immunotherapy have created an immediate need within the Biotechnology Laboratory in the Central Research Department for qualified researchers in the area of

### HYBRIDOMA TECHNOLOGY

The successful candidate will have a Ph.D. and two or more years post-doctoral experience in hybridoma technology. Familiarity with state-of-the-art construction of monoclonals, immunoassays and immunochemistry is required. Research efforts will be directed toward obtaining novel antibody specificities for our biotechnology-based cancer therapeutic program. The above candidates must also possess strong communication skills and a desire to carry out independent research while functioning as part of an interdisciplinary research team.

The Dow Chemical Company offers a stimulating work environment and a competitive salary and benefits package.

Send resume to:  
**Technical Recruiting  
Department H-1  
P.O. Box 1655  
Midland, MI 48641-1655**



The Dow Chemical Company is an Equal Opportunity Employer

SANDOZ, a leading international pharmaceutical company based in Switzerland, is expanding its Preclinical Research Department in Basle. We require a number of young, well-qualified academic staff to join a newly established group working on

## Disorders of Bone Metabolism

a field in which SANDOZ has considerable clinical experience, to which we now plan to devote more research resources.

The following positions are currently open:

**Cell Biologist**

**Biochemist**

**Histologist/Morphologist (Ph.D.)**

**Pharmacologist/Physiologist  
(Ph.D. or M.D.)**

The successful applicant for each of these posts will work closely together with the head of a newly formed interdisciplinary group within our Endocrinology Unit and will be jointly involved in choosing and pursuing promising lines of research. He or she should be familiar with all the necessary techniques in his or her own speciality for carrying out front-line research on bone metabolism. We want to establish relevant *in vitro* and whole animal models in this field.

In addition to higher academic qualifications (Ph.D. or M.D.), applicants should ideally have postdoctoral and/or industrial experience, a specialised knowledge of bone metabolism and a background knowledge of endocrinology. We hope to attract people who would enjoy working in an interdisciplinary environment where the emphasis is on the discovery and development of new therapeutic agents, in collaboration with medicinal chemists.

SANDOZ offers a scientifically attractive working atmosphere, well-equipped laboratories, and the opportunity both to publish the results of original research and to attend scientific meetings.

Applications, which will be treated in strict confidence, should be accompanied by a *curriculum vitae* and list of publications and addressed to:

**Sandoz Ltd.  
Personnel Department, Ref. 7109  
CH-4002 Basle, Switzerland**



## POSITIONS OPEN

**POSTDOCTORAL POSITION** available in summer 1987 for a candidate with a strong background in protein chemistry. The successful applicant will take part in a project investigating protein-DNA interactions in heat shock gene expression in mammalian cells. Experience in protein purification by chromatographic and electrophoretic techniques is required. Expertise in 2-D gel electrophoresis and an interest in molecular biology is desirable. Send curriculum vitae and names of three references to: **Dr. Stuart Calderwood, Joint Center for Radiation Therapy, New England Deaconess Hospital, 50 Binney Street, Boston, MA 02115.** An Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL POSITION

Available immediately 1 June 1987 to work in the area of biochemistry and molecular biology of human malaria parasites. Previous experience not necessary in parasitology but desirable in gene cloning methodology. Please send curriculum vitae and have three letters of recommendation sent to: **Nirbhay Kumar, Ph.D., Department of Immunology and Infectious Diseases, School of Hygiene and Public Health, The Johns Hopkins University, 615 North Wolfe Street, Baltimore, MD 21205; telephone: 301-955-7177.**

**POSTDOCTORAL POSITION**—A postdoctoral position is available immediately for an individual with an interest and strong background in phospholipid biochemistry. GC-MS experience is desirable. State-of-the-art methodology will be employed to investigate mechanism of leukotriene and PAP biosynthesis and pathogenesis. Please send curriculum vitae to: **Maureen Quigley, Professional Employment Representative, Department C, American Cyanamid Company, Lederle Laboratories, Pearl River, NY 10065.** An Equal Employment Opportunity Employer.

**POSTDOCTORAL POSITION** available immediately to join group to study mechanisms of microvascular regulation, endothelial cell function in vivo and in vitro, with special emphasis on eicosanoids, EDRF, oxygen metabolites, and cyclic GMP. Background in microcirculatory techniques and vascular smooth muscle work preferred. Minimum duration 2 years. Salary competitive. Applicants should send curriculum vitae, reprints, and names of three references to: **Gabor Kaley, Ph.D., Professor and Chairman, Physiology Department, New York Medical College, Valhalla, NY 10595; telephone: 914-993-4089.**

**POSTDOCTORAL POSITION** available to study the biochemical and biophysical aspects of the photosynthetic oxygen-evolving complex. Experience in protein purification is desirable. Initial appointment for 1 year, renewable. Contact: **Professor J. E. Penner-Hahn, Department of Chemistry, or Professor W. D. Frasch, Department of Biology, University of Michigan, Ann Arbor, MI 48109.** A Nondiscriminatory, Affirmative Action Employer.

### POSTDOCTORAL POSITION

A postdoctoral research position is available in the area of cellular and molecular biology of fertilization. Studies include molecular biology, biochemical and immunological analyses of sperm plasma membranes and sperm autoantigens and their role in fertilization. Applicants should have a recent Ph.D. with a strong background in biochemistry, molecular biology, or reproductive biology. Send curriculum vitae and the names of three references to: **Dr. Michael G. O'Rand, Laboratories for Cell Biology, Department of Anatomy, University of North Carolina at Chapel Hill (UNC-CH), Chapel Hill, NC 27514.**

UNC-CH is an Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available immediately in biochemical toxicology to study hepatotoxic effects of chemicals. Must understand enzyme chemistry. Send curriculum vitae and names of three references to: **Dr. R. Craig Schnell, Dean for Graduate Studies and Research, North Dakota State University (NDSU), Fargo, ND 58105.** Position closes 15 June 1987. NDSU is an Equal Opportunity Employer.

## GIBCO/BRL Technical Services

Join Bethesda Research Laboratories' growing Technical Services Group. This group provides technical support for BRL products through the Tech-Line,<sup>™</sup> workshops, seminars, Focus, and the applications laboratory. Innovative scientists with good communication skills and experience in all molecular and cellular biology techniques are sought for the following positions:

### Staff Scientist (Ph.D.)

- Teach workshops
- Develop new applications in the laboratory
- Present techniques seminars
- Handle technical questions

### Technical Specialist (B.S./M.S.)

- Handle technical questions
- Develop new applications in the laboratory
- Assist at workshops

These positions offer competitive salary and benefits. Travel is required. Send your resume in confidence to:

**Mr. Richard L. Hotaling, Jr.  
Personnel Manager  
GIBCO/BRL Division  
Life Technologies, Inc.  
8717 Grovemont Circle  
Gaithersburg, MD 20877**

Attn: Dept. NS5/8

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## CHAIRMAN Biology Department

Biological Oceanographer is sought for Chairman, Biology Department, at the tenured senior scientist level. Department has annual operating budget of over \$5 million, with 70 scientists, technical associates and support personnel, along with 19 students in the MIT/WHOI joint program in biological oceanography. Candidates should have distinguished research/publications records, with demonstrated administrative and fund-raising skills. Teaching and sea-going experience desired. If interested, submit curriculum vitae and 3 references with addresses by July 1, 1987 to Personnel Manager.

Box 54P



**WOODS HOLE  
OCEANOGRAPHIC  
INSTITUTION**

**Woods Hole, MA 02543**

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## BIOMEDICAL SPECTROSCOPY Postdoctoral Position

Battelle's Columbus Division, a world leader in professional research and development services, has a postdoctoral position currently available in the biomedical spectroscopy area. The position provides the opportunity to work in our challenging multidisciplinary environment.

A Ph.D. in Chemical Engineering, Bioengineering, Biological or the Chemical Sciences is required. Will conduct research applying fourier transform infrared spectroscopy to: studies involved in the surface chemistry and the mechanisms of adsorption of biological molecules to various surfaces, applying infrared spectroscopy to problems of molecular structure, development of new infrared techniques for studying biological molecules, development of techniques for studying cells by infrared spectroscopy. The position will be located in the Battelle-operated, NIH-funded National Center for Biomedical Spectroscopy.

The position is a 1-2 year appointment. Individuals interested in this challenging opportunity should send resume and three letters of reference to: **Dick Shaw, Employment Department J-2, Battelle Columbus Division, 505 King Avenue, Columbus, Ohio 43201-2693.** An Equal Opportunity/Affirmative Action Employer M/F/H.

 **Battelle**  
Columbus Division

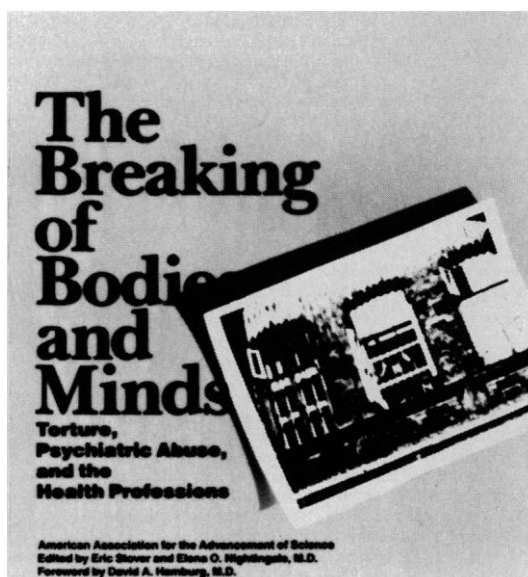


# *The Breaking of Bodies and Minds*

## *Torture, Psychiatric Abuse, and the Health Professions*

A documentation of systematic use and effects of physical and mental torture throughout the world

Edited by Eric Stover  
and Elena O. Nightingale  
With a Foreword by  
David A. Hamburg



This eye-opening book brings together for the first time writings on the role of medical personnel in cases of torture and psychiatric abuse. Through analyses and case histories, psychiatrists and other health care professionals, political scientists, ethicists, and other writers discuss the systematic use and effects of physical and mental torture in the Soviet Union, Latin America, and other parts of the world.

The book also details the complicity of an alarming number of medical personnel in torture and psychiatric abuse and examines the ways in which governments use a medical rationale to seek legitimacy for human destruction. Finally, it describes efforts by medical and other associations both to combat offensive practices and treat victims.

*The Breaking of Bodies and Minds* is important reading for anyone concerned with the preservation of basic human rights.

1985 352 pages

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## POSITIONS OPEN

### CHEMOTAXIS

**POSTDOCTORAL POSITION** available to study the mechanism of chemotaxis in eukaryotic cells. Research is focused on the cAMP chemoattractant receptor of *Dictyostelium*. Current approaches involve: (i) investigation of receptor functional domains by in vitro mutagenesis and expression of recently isolated receptor cDNA; (ii) isolation of receptor kinase(s) and phosphatase(s). Send curriculum vitae and names of three references to:

**Dr. Peter Devreotes**  
Department of Biological Chemistry  
Johns Hopkins University Medical School  
Baltimore, MD 21205

**POSTDOCTORAL POSITION IN MOLECULAR GENETICS** to study the molecular heterogeneity of connective tissue disorders in humans. Applicants should have training in molecular biology. Send curriculum vitae and names of three references to: **Dr. P. Tsipouras, University of Connecticut Health Center, Division of Human Genetics, L5090, 263 Farmington Avenue, Farmington, CT 06032.**

*An Affirmative Action/Equal Opportunity Employer M/W/H.*

**POSTDOCTORAL POSITION**—Available July 1987 for a biochemist or cell biologist to study the molecular mechanics of bacterial adherence in the urinary tract. The project includes the purification and characterization of urinary tract proteins and glycoproteins. Experience with HPLC and immunological techniques preferred. Send curriculum vitae and references to: **Dr. Hugh J. Callahan, Department of Urology, Thomas Jefferson University, Philadelphia, PA 19107. Equal Opportunity Employment.**

### POSTDOCTORAL POSITION

Postdoctoral position available immediately to join a multidisciplinary center (directed by **J. Konisky** and **C. R. Woese**) being assembled at the University of Illinois to study the molecular biology and physiology of archaeobacteria. The group will include microbiologists, molecular biologists, and computer scientists interested in the analysis of genome sequences, genome structure, genetic systems, gene expression, and phylogenetic analysis. Interested candidates should send a description of their research interests, curriculum vitae, and three letters of reference to: **Dr. Jordan Konisky, Department of Microbiology, University of Illinois, 131 Burrill Hall, 407 South Goodwin Avenue, Urbana, IL 61801.**

*An Equal Opportunity/Affirmative Action Employer*

### POSTDOCTORAL POSITION MEMBRANE LIPID BIOSYNTHESIS

Applications are invited for a position now available to carry out research on membrane lipid biosynthesis in bacteria. These studies concern the control of bilayer stability in anaerobes. Experience with lipids and/or enzymes involved in lipid metabolism is desirable. Send curriculum vitae and request that three letters of recommendation be sent to: **Dr. Howard Goldfine, Department of Microbiology, University of Pennsylvania, School of Medicine, Philadelphia, PA 19104-6076.**

*An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION:** We have isolated two forms of heme oxygenase proteins with different molecular, regulatory and immunochemical properties from rat organs. We plan to study gene expression and functional analysis of the proteins. The applicant should have a Ph.D. in biochemistry or related sciences and expertise in basic molecular biology techniques, particularly as applied to eukaryotic cells. The position will be available immediately. Send curriculum vitae and names of three references to: **Dr. M. D. Maines, Department of Biophysics, University of Rochester School of Medicine, Rochester, New York 14642. The University of Rochester is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately to study structure-function correlations in ribosomal RNA using NMR spectroscopy, site-specific mutagenesis and ribosome reconstitution. Recent Ph.D. with experience in NMR, ribosome biochemistry, or recombinant DNA technology preferred. Send résumé and arrange for three letters of reference to be sent to: **Dr. Neodes Leontis, Chemistry Department, Bowling Green State University, Bowling Green, OH 43403. Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available immediately in cellular and transplantation immunology. Areas of research include marrow stem cell purification, monoclonal antibody development, and tolerance induction in murine and nonhuman primate models. Send curriculum vitae and three references to: **Morton J. Cowan, M.D., Pediatric Bone Marrow Transplant Program, University of California San Francisco, San Francisco, CA 94143-0105. The University of California is an Equal Opportunity/Affirmative Action Employer.**

### POSTDOCTORAL POSITIONS DRUG DELIVERY RESEARCH

Laboratory with a strong interdisciplinary program in drug delivery systems research is seeking two outstanding postdoctoral fellows. Current activities emphasize cancer-related research. A background in either (a) pharmaceutical sciences or (b) cellular pharmacology is highly desirable.

Send curriculum vitae and names and addresses of two referees to:

**R. L. Juliano**  
Department of Pharmacology  
University of North Carolina School of Medicine  
Chapel Hill, NC 27514

*Women and minorities are encouraged. UNC-CH is an Equal Opportunity/Affirmative Action Employer.*

### YALE MEDICAL SCHOOL DEPARTMENT OF PHYSIOLOGY

**POSTDOCTORAL POSITIONS** are available immediately to study the molecular mechanism of Na,K-ATPase in red cell, kidney, and cloned enzyme preparations. Approaches include membrane biochemistry, kinetics of intermediates and transport, subunit interactions, involvement of anions and electrical parameters in purified preparations, ghosts, vesicles and reconstituted systems. Background in biochemistry and cellular physiology desirable. Send curriculum vitae and three letters of reference by 15 June 1987 to: **Joseph F. Hoffman, Department of Physiology, Yale Medical School, 333 Cedar Street, New Haven, CT 06510. Yale University is an Equal Opportunity Employer.**

### POSTDOCTORAL POSITIONS

Postdoctoral openings are available in the Department of Molecular Biology and Biochemistry at the University of California, Irvine. These positions are for 1 or 2 years under the sponsorship of the following faculty members: **R. Davis:** biochemical genetics of *Neurospora*. **B. K. Burgess:** biochemistry and genetics of nitrogen fixation. **G. A. Granger:** cell and molecular mechanisms operative in cellular immunity. **B. A. Hamkalo:** eukaryotic chromosome structure and function. **H. Y. Fan:** animal virology nucleic acid studies in murine leukemia viruses. **T. E. Johnson:** genetic and molecular biology of aging using *C. elegans* as model. **J. E. Manning:** gene sequence organization in eukaryote DNA, electron microscopy. **W. M. Stanley, Jr.:** protein biosynthesis in eukaryotic cells. **K. K. Tewari:** nucleic acids of chloroplasts and other organelles. **E. K. Wagner:** nucleic acids and molecular biology of herpesvirus replication. **R. C. Warner:** mechanism of genetic recombination. **C. A. Woolfolk:** general microbiology, enzymology. **M. G. Cumsky:** mitochondrial biogenesis, mitochondrial protein import and gene expression in yeast. **L. P. Villarreal:** molecular biology of small DNA viruses. **R. Miledi:** neurotransmitter receptors and synaptic functions. **C. Glabe:** developmental biology; cell-cell interactions. **S. Tewari:** neuro-molecular biology and CNS acting drugs. For further information contact or write to: **The Department of Molecular Biology and Biochemistry, University of California, Irvine, CA 92717. The University of California is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### POSTDOCTORAL POSITIONS AT MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)

Several positions are available to work in an interdisciplinary manner with **Drs. A. Klivanov, R. Langer, and M. Chow** in the Department of Applied Biological Sciences, MIT, on the immunology and biochemistry of viral antigens. Applicants should have research experience in one or more of the following areas: immunology, virology, protein structure and biochemistry, or biopolymers. Interested applicants should send their curriculum vitae and three letters of recommendation to: **Dr. Marie Chow, Room 56-217, Department of Applied Biological Sciences, The Massachusetts Institute of Technology, Cambridge, MA 02139. Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL POSITIONS—MOLECULAR IMMUNOLOGY.** Genentech, Inc. is a research and development company which utilizes recombinant DNA technology to produce pharmaceutical products for the treatment of a variety of human diseases. In our Molecular Immunology Laboratory, investigations are directed toward an understanding of cellular interactions in chronic inflammation and tissue remodeling. We seek individuals to investigate the regulation of matrix synthesis and destruction by cytokines and to study T lymphocyte-monocyte interactions and the control of cytokine synthesis and secretions. The successful candidates will possess a Ph.D. in cell biology, immunology, or molecular biology and have extensive hands-on experience in tissue culture techniques. Genentech, Inc., offers an excellent salary and benefits package coupled with the opportunity to make a significant contribution to our organization. Please send résumé to: **Human Resources Department #1153, Genentech, Inc., 460 Point San Bruno Boulevard, South San Francisco, CA 94080. An Equal Opportunity Employer.**

**POSTDOCTORAL POSITIONS** immediately available for toxicological studies broadly related to understanding the mechanisms by which free radicals and active carbonyl compounds produce adverse effects. Fellow would be expected to work on projects related to one of the three major areas of interest in our laboratory; the role of ring-opened metabolites of benzene in the production of toxicity; the mechanisms of adverse effects of alpha,beta unsaturated aldehydes; and the biochemical toxicology of the oxidant pollutants ozone and nitrogen dioxide.

Salary is competitive. Letter of application and current curriculum vitae to: **Bernard Goldstein, M.D., Chairman, Department of Environmental and Community Medicine, UMDNJ—Robert Wood Johnson Medical School, 675 Hoes Lane, Piscataway, NJ 08854-5635. An Equal Opportunity/Affirmative Action Employer M/F/H/V.**

**POSTDOCTORAL POSITIONS IN MOLECULAR BIOLOGY AND IMMUNOLOGY** at the Center for Neurologic Diseases of the Brigham and Women's Hospital, Harvard Medical School. Two postdoctoral positions are available in molecular biology to study: T-cell receptor genes in inflammatory central nervous diseases; and poliovirus receptor genes; Postdoctoral position is also available for cellular immunologic studies in autoimmune disease of human and animal models. Candidates should have a Ph.D. or equivalent with experience in molecular biology, immunology, or virology. Send curriculum vitae and names of three references to: **Dr. Howard Weiner, Co-Director, Center for Neurologic Diseases, Brigham and Women's Hospital, Harvard Medical School, Bioscience Research Building 12th Floor, 75 Francis Street, Boston, MA 02115. An Equal Opportunity Employer.**

**POSTDOCTORAL POSITIONS IN MOLECULAR NEUROBIOLOGY** are immediately available to study the regulation, expression, and structure of specific genes in the central nervous system. These genes include the amyloid gene of Alzheimer's disease (**Dr. C. G. Rasool**), genes involved in neuroimmune function like interleukin-1 (**Dr. M. P. Vitek**), and various receptor genes (staff). A background in molecular biology or biochemistry is preferred. Please send curriculum vitae and names of three references to: **Dr. A. J. Blume, Molecular Neurobiology, CNS Biology, c/o Ms. Maureen Quigley, Professional Employment Representative, Lederle Laboratories, Pearl River, NY 10965. Equal Opportunity Employer.**

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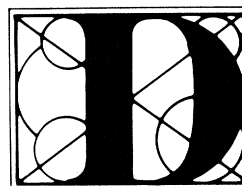
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The Bristol-Myers Pharmaceutical Research and Development Division, at its new research facility in Wallingford, Connecticut, is seeking an exceptional Scientist for its Central Nervous System Electrophysiology Laboratory.

The successful candidate will join a team dedicated to applying the most modern techniques to developing and elucidating the pharmacologic therapies of the future. Will be responsible for carrying out experiments utilizing extracellular single cell recording techniques with in-vivo and/or in-vitro neuronal preparations as well as other related activities. This key position requires:

- M.S. Pharmacology, Physiology or related field, or B.S. with equivalent years of experience.
- 1 or more years experience with electrophysiological techniques.
- Ability to work independently.

Bristol-Myers offers competitive salary compensation and a comprehensive benefits package including relocation assistance.

For confidential consideration forward your resume, including salary history, in confidence, to: Department PD-SC 20 Bristol-Myers Company, Pharmaceutical Research & Development Division, P.O. Box 5100, 5 Research Parkway, Wallingford, Connecticut 06540. An Equal Opportunity Employer.

**Bristol-Myers**

Pharmaceutical Research & Development Division

### Professor of Genetics, University of California, Berkeley Director, Human Genome Center, Lawrence Berkeley Laboratory

The Lawrence Berkeley Laboratory and the University of California at Berkeley are jointly seeking a person to serve as Director of the Human Genome Center and Professor of Genetics. The goals of this new Center are to carry out an extensive program in the physical mapping of the human genome and the application of this information to human genetics.

The successful candidate should be internationally recognized in fields of DNA mapping and/or sequencing and its implications for human genetics. The candidate should be able to demonstrate familiarity with the broad spectrum of activities to be pursued within the Center. In addition to providing the intellectual leadership for the Center, the Director must be a skilled administrator capable of the allocation, development and maintenance of the Center's staff and its financial and physical resources.

*The University of California is an equal opportunity, affirmative action employer.*

*Please reply to Search Committee, c/o Professor G.M. Rubin, 401 Biochemistry Bldg., University of California, Berkeley, CA 94720 before July 1, 1987.*

## POSITIONS OPEN

### POSTDOCTORAL POSITIONS

Available immediately to join a research project involving in vivo and cell culture experiments on pattern formation and growth control in developing mouse limb buds. Ph.D. required, with experience in one or more of the following: cell culture, growth factor biology, extracellular matrix, protein chemistry, molecular biology. Submit curriculum vitae and statement of research interests, and ask three individuals to write letters of recommendation to:

**Dr. Susan Bryant**  
Developmental Biology Center  
University of California, Irvine  
Irvine, CA 92717

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

### POSTDOCTORAL RESEARCH ASSOCIATE

A postdoctoral position to study the immunobiology to chondrocytes is immediately available. Candidates must have experience in cell biology and immunology. Expertise in molecular biology and protein purification is highly desirable. Send curriculum vitae and names of three references to: **Dr. Moti L. Tikva**, Division of Rheumatology, University of Medicine and Dentistry of New Jersey—Robert Wood Johnson Medical School, CN 19, New Brunswick, NJ 08903-0019. *An Equal Opportunity/Affirmative Action Employer M/F/H/V.*

**POSTDOCTORAL/RESEARCH ASSOCIATE:** Exciting opportunity for Ph.D. with experience in cell biology/protein biochemistry/molecular biology to join in the establishment of a vascular molecular biology laboratory at Yale University Medical School. Investigations in basic growth regulatory mechanisms, biochemistry, and radiobiology of blood vessel cells. Academic appointment and competitive salary. Please send curriculum vitae to: **Dr. Eliot M. Rosen**, Department of Therapeutic Radiology, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510.

**POSTDOCTORAL OR RESEARCH ASSOCIATE** position available immediately for a minimum of 2 years to participate in clinical motor control studies on patients with movement disorders. Should have some experience with electromyography and kinematic analysis of movement. Send curriculum vitae and three letters of reference to: **Drs. R. Penn and G. Gottlieb**, Department of Neurosurgery, Rush Medical College, 1753 West Congress Parkway, Chicago, IL 60612.

**POSTDOCTORAL/RESEARCH ASSOCIATE:** Position available immediately to study urokinase receptors in developing and regenerating rodent brain and spinal cord. Background in neurobiology, molecular biology, protein purification, and analyses is essential. U.S. citizen or permanent resident required. Send curriculum vitae and three letters of reference to: **Barry W. Festoff, M.D.**, Professor and Medical Investigator, Neurobiology Research Lab/Department of Neurology, University of Kansas at VA Medical Center, 4801 Linwood Boulevard, Kansas City, MO 64112. *An Equal Employment Opportunity Employer.*

### POSTDOCTORAL RESEARCH ASSOCIATES

To study various aspects of bacterial surfaces, cell walls, autolysis, and secreted macromolecules using molecular, genetic, and monoclonal antibody methodologies. Recent Ph.D. or equivalent in biochemistry or microbiology. Send résumé and the names of three references to: **G. D. Shockman, Ph.D.**, Department of Microbiology and Immunology, Temple University School of Medicine, 3400 North Broad Street, Philadelphia, PA 19140. *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL RESEARCHER POSITION** available immediately for 2 to 3 years to study the regulation of I-A expression by murine peritoneal macrophages. Work will focus on the biochemistry and molecular biology of continuous I-A expression that is controlled by the *Bcg* gene [*J. Immunol.* 138, 1372 (1987)]. Send curriculum vitae and names of three references to: **Dr. Bruce S. Zwillig**, Department of Microbiology, The Ohio State University, 484 West 12th Avenue, Columbus, OH 43210. *The Ohio State University is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### POSTDOCTORAL RESEARCH ASSOCIATE IN CARDIAC ELECTROPHYSIOLOGY

A position is available beginning 1 July 1987 to study mechanisms and treatment of ischemia-related cardiac arrhythmias. Current approaches include cardiac mapping using a computerized multiplexer system, micro-electrode techniques, computer modeling, and single-cell clamping. Experience in single or multicellular voltage clamping techniques is preferable. Send curriculum vitae to: **Dr. Nabil El-Sherif, P.O. Box 1199, SUNY Health Science Center, 450 Clarkson Avenue, Brooklyn, NY 11203.**

### POSTDOCTORAL OR RESEARCH POSITION—AVAILABLE IN MOLECULAR-CELLULAR IMMUNOLOGY FOR Ph.D. OR M.D.

Studies deal with human lymphokine regulation, cell and gene cloning as part of a major program on the induction of Transplant Tolerance. Salary range from \$24,000 to \$34,000, depending on prior experience.

Send curriculum vitae together with names of three references to: **Marvin R. Garovoy, M.D., Director, Immunogenetics and Transplantation Laboratory, HSE-520, University of California, San Francisco, Third and Parnassus Avenues, San Francisco, CA 94143.**

*The University of California is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

### POSTDOCTORAL TRAINING IN MATRIX BIOLOGY

Two postdoctoral positions are available in extracellular matrix developmental biology. Current research focuses on the mechanisms controlling collagen fibril structure, macromolecular interactions involved in the development of matrix architecture, cell-matrix and cell-cell interactions in matrix morphogenesis. Applicants should have a Ph.D., M.D., or equivalent. Experience with electron microscopy, immunocytochemistry, cell culture, and/or 3-D computer reconstruction techniques desirable. Send curriculum vitae and names of three references to: **Dr. David E. Birk**, University of Medicine and Dentistry of New Jersey—Robert Wood Johnson Medical School, Department of Pathology, 675 Hoes Lane, Piscataway, NJ 08854-5635. *An Equal Opportunity/Affirmative Action Employer M/F/H/V.*

**TWO POSTDOCTORAL POSITIONS** available 1 July 1987 to study (i) neural control of LHRH using CNS push-pull perfusion and in vitro superfusion; (ii) cardiovascular-renal physiology. Salary commensurate with NIH stipends. Send curriculum vitae and three letters of recommendation to: **Dr. Donald Meyer (neuroendocrine)** or **Dr. Joey Granger (renal)**, Department of Physiology, Eastern Virginia Medical School (EVMS), P.O. Box 1980, Norfolk, VA 23501. *EVMS is an Equal Opportunity/Affirmative Action Employer.*

**EXTENSION OF DEADLINE: PROFESSOR AND HEAD, DEPARTMENT OF MICROBIOLOGY, THE UNIVERSITY OF TENNESSEE, KNOXVILLE, TENNESSEE.** **EXTENSION OF SEARCH:** Original closing date has been changed from 1 January 1987 to 1 June 1987. **QUALIFICATIONS:** Doctoral degree in microbiology or closely allied biological science; demonstrated productivity in microbiological research and excellence in teaching; administrative experience or evidence of administrative ability. **RESPONSIBILITIES:** To provide academic and administrative leadership in a department which serves both the College of Liberal Arts and the College of Veterinary Medicine. **STARTING DATE:** Negotiable. **APPLICATIONS:** Applicants should submit a letter of interest accompanied by curriculum vitae, a description of the applicant's research program and career objectives, and the names, addresses, and telephone numbers of five individuals who can evaluate the applicant's qualifications for the position. All materials should be sent to: **Dr. Dewey Bunting, Chairman, Search Committee, Department of Microbiology, University of Tennessee, Knoxville, TN 37996-0845.** For further information call: **Dr. Bunting at the Graduate Program in Ecology 615-974-3065.** **CLOSING DATE:** Nominations should be made as soon as possible. Applications should be completed by 1 June 1987. *The University of Tennessee is an Affirmative Action/Equal Opportunity Institution.*

## POSITIONS OPEN

### POSTDOCTORAL SCIENTIST IMMUNODIAGNOSTICS

Becton, Dickinson and Company Research Center in dynamic Research Triangle Park, North Carolina, has two postdoctoral opportunities beginning in 1987. You will be involved with research in the expanding immunodiagnostics field and will be working with experienced scientists in state-of-the-art laboratories.

Candidate requirements are a Ph.D. in biochemistry or immunochemistry with demonstrable capabilities in creative thought and energetic application. A working knowledge of organic synthesis is preferred. Current interests should include nonisotopic immunoassay, analytical biochemistry or protein chemistry including isolation, purification, conjugation to small and large molecules on solid surfaces.

This is a 1-year appointment with a second-year renewal option available. We offer 4 weeks of paid vacation and a salary commensurate with your experience. Persons wishing to learn more about this opportunity or wishing to make application should direct inquiry or curriculum vitae to: **Dr. Daniel Wagner, P.O. Box 12016, Research Triangle Park, NC 27709. Telephone: 919-549-8641.**

### PROFESSOR AND ASSISTANT PROFESSOR OF CELL BIOLOGY

The Department of Cell Biology, Stanford University School of Medicine, invites applications for the positions of professor and assistant professor. Candidates should have distinguished records of achievement in one of the following areas: x-ray crystallography, electron microscopy and image processing, molecular dynamics, and cell surface receptors in relation to chemotaxis and the cytoskeleton.

Applicants should send a curriculum vitae, description of research interests, and names and addresses of three references to:

**Dr. Roger D. Kornberg**  
Department of Cell Biology  
Stanford University School of Medicine  
Fairchild Science Building  
Stanford, CA 94305

*Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates.*

### PROFESSOR OF NUTRITION

**THE DEPARTMENT OF NUTRITION**, Université de Montréal, has **tenure-track** positions available in the areas of **applied human nutrition, nutritional biochemistry, food chemistry, and education.** Candidates must have a doctorate, preferably with training in nutrition and postdoctoral research experience. They must be able to train graduate students and to teach undergraduate students in French, within 2 years. The candidates are expected to develop an independent research program at one of the Departmental sites (Campus or University affiliated Hospitals). *In accordance with Canadian immigration laws, preference will be given to Canadians and landed immigrants.*

Send curriculum vitae, statement of research plans, and names of three referees to: **E. Rasio, Chairman, Department of Nutrition, Université de Montréal, C.P. 6128, Succursale A, Montréal (Québec), Canada, H3C 3J7.**

**RESEARCH ASSOCIATE POSITION**, Ph.D. in basic biomedical sciences, minimum 3 years of postdoctorate experience in molecular biology/recombinant DNA techniques, to participate in group research effort on the structure/interactions of basement membrane/extracellular matrix macromolecules. Previous experience in this field desired but not required. Salary negotiable. Send curriculum vitae and names of three persons who can provide letters of reference to:

**James McCarthy, Ph.D.**  
Box 609, UMHC, Department of  
Laboratory Medicine and Pathology  
420 Delaware Street SE  
Minneapolis, MN 55455

by 15 June 1987.

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

## BIOCHEMIST

**Dentsply International**, a major international health care manufacturer, has expanded its operations with a new division engaged in progressive product research and development.

An excellent opportunity exists for a biochemist who will work with dental and medically oriented collaborators to devise suitable electromechanical diagnostic and treatment devices to be applied in-vitro and in-vivo studies. Candidate will be responsible for accomplishment of product development tasks on a strict time schedule and work with other Dentsply groups with the supplementary skills and equipment necessary to accomplish these tasks.

The ideal candidate will have:

- A MS or PhD in Biochemistry
- 2-5 years experience in an industrial or university research/development setting
- Understanding of Pharmacology and methodology in formulating and testing chemical pharmaceutical products in-vitro.
- Training in enzyme reactions, substrate specificity (preferably including synthetic substrate applications) desirably including experience in their practical application in diagnosis
- Understanding of monoclonal antibodies and their use in diagnostic procedures including immunofluorescence and enzyme linked assays.

Salary commensurate with experience and excellent fringe benefits package including Employee Stock Ownership Plan.

Direct your resume with salary requirements in confidence to:

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570 West College Avenue  
P.O. Box 872  
York, Pennsylvania 17405

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## VIROLOGIST

The Life Sciences Department of IIT Research Institute is seeking a Staff Virologist to participate in an on-going antiviral screening program. The individual will be responsible for the expansion of the program to include in vitro and in vivo assessment of potential antiviral agents active against HIV or related retroviruses. The position will also require participation in on-going immunology programs and preparation of research proposals seeking external funding.

The successful candidate will have a doctorate in virology and experience in in vitro and in vivo studies with retroviruses. Background in biochemistry or pharmacology is desirable.

IIT Research Institute is located in Chicago and offers competitive compensation as well as a full benefits package. Send resume with salary history and requirements to: **Lucy Amft, Dept. LF50, Senior Employment Representative, IIT Research Institute, 10 W. 35th Street, Chicago, IL 60616.** Equal opportunity/affirmative action employer.



## MARINE BIOGEOCHEMIST

The International Atomic Energy Agency seeks the services of a marine biogeochemist to be responsible for the Marine Organic Chemistry Unit in its International Laboratory of Marine Radioactivity in Monaco. The work of the group includes collaborative studies of the biogeochemistry of organic contaminants in the marine environment, the provision of assistance to regional pollution monitoring efforts of member states and the development and testing of applicable analytical techniques and methodology. A comprehensive knowledge of the behaviour and analysis of trace organic contaminants in the marine environment including the use of techniques such as GC-MS, HPLC, UV and IR spectrometry etc. is essential. Relevant field and direct laboratory experience must be demonstrated by the successful candidate.

Initial contract of three years at a salary of US\$39,300.-p.a. Additional allowances if married. Travel and removal expenses paid. Six weeks annual leave.

**Applicants are invited to send a complete C.V. to the Division of Personnel, I.A.E.A., Box 100, A-1400 Vienna, Austria quoting reference number VN 87/035.**

## POST-DOCTORAL TRAINING IN TUMOR IMMUNOLOGY AND IMMUNOBIOLOGY

Post-doctoral fellowships are available for training in various aspects of cancer research, including host immunity, immunochemistry, monoclonal antibody imaging and therapy, and molecular biology.

A strong background in cellular immunology, immunochemistry, protein chemistry, or molecular biology is desired. Applicants should send curriculum vitae, a short description of research interests, and the names of three references to:

**Dr. David V. Gold, Associate Member**

**CENTER FOR MOLECULAR  
MEDICINE AND IMMUNOLOGY**  
at the University of Medicine  
and Dentistry of New Jersey  
One Bruce Street  
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## IMMUNOLOGISTS

Unigene Laboratories, a multidisciplinary biotechnology research corporation, is seeking distinguished scientists for the following positions:

### GROUP LEADER

A broad background in all aspects of Immunology, with strong emphasis in monoclonal antibody preparation and the formulation of immunoassays employing diverse methodologies, is essential. The successful candidate will have a prestigious publication record and several years of post-doctoral research experience or equivalent industrial experience. As the senior member of the Immunology group, this individual will also have administrative responsibilities and be required to interact with clients and collaborators. Polished verbal and written communication skills are highly desirable.

### SENIOR SCIENTIST

A strong background in Immunology with significant experience in immunoassay technology and tissue culture methodologies is required. The successful candidate will have a Ph.D. degree and a record of accomplishment demonstrating novelty and creativity. Post-doctoral or industrial experience is desirable but not required.

Unigene offers a comprehensive benefits package and the opportunity to work in an environment which fosters continuing professional development. Please send a C.V. and three references in confidence to:

**Personnel Department**  
Unigene Laboratories, Inc.  
110 Little Falls Road  
Fairfield, NJ 07006

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## POSITIONS OPEN

Need **TWO RESEARCH ASSOCIATES** to perform studies on (i) developmental neurochemistry of polyamines and (ii) neurochemical regulation of GABA receptor function. Contact: (i) **Dr. Theodore A. Slotkin** and (ii) **Dr. Rochelle D. Schwartz**, Department of Pharmacology, Box 3813, Duke University Medical Center, Durham, NC 27710. *Duke University is an Equal Opportunity/Affirmative Action Employer.*

**RESEARCH ASSOCIATE**—Major Philadelphia medical/research facility seeks doctoral level individual to engage in an ongoing clinical and basic research program which focuses on monoclonal antibody-directed cell-mediated cytotoxicity directed against malignant cells. Candidates should have experience/interest in immunology research, as well as strong background in biochemical laboratory techniques. For consideration, please send curriculum vitae with salary history and requirements to: **LW, P.O. Box 24779, Philadelphia, PA 19111.** *We are an Equal Opportunity Employer.*

**RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW:** Applications are invited from qualified M.D. or Ph.D. candidates for studying regulation of cultured smooth muscle cells by atriopeptides and cyclic nucleotides at the biochemical and molecular level. Expertise in biochemical, immunological, and molecular techniques is desirable. Competitive salary commensurate with background and experience. Send curriculum vitae to: **Dr. Thomas Lincoln, Department of Pharmacology, College of Medicine, University of South Alabama, Mobile, AL 36688.**

### RESEARCH ASSOCIATE/STATISTICIAN

Applications sought for a Research Associate/Statistician (nontenure track) in the College of Pharmacy and Pharmaceutical Sciences at Florida A&M University beginning in June 1987. Applicants must have a Ph.D. in statistics with experience in experimental design, research methodology, and statistical evaluation. The successful applicant will be expected to establish his/her research program through competitive grants; to provide instruction in statistics for professional and graduate students, and to assist in strengthening grant proposals.

Please submit curriculum vitae and three letters of recommendation by 31 May 1987 to: **Dr. J. L. Early, Assistant Dean for Research, College of Pharmacy, Florida A&M University (FAMU), P.O. Box 3367, Tallahassee, FL 32303.**

*FAMU is an Equal Opportunity/Equal Access Institution.*

**SENIOR RESEARCH POSITION:** The Dana Farber Cancer Institute is seeking to fill a senior research position to study the regulation of oncogene expression in development. Strong background in molecular biology and gene regulation plus at least 2 years of postdoctoral experience in nucleic acid biochemistry and protein-nucleic acid interaction are required. Joint appointment will be held in an appropriate department of Harvard Medical School. Salary competitive. Send curriculum vitae and names of three references to: **J. Edelman, Laboratory of Molecular Carcinogenesis, Dana Farber Cancer Institute, 44 Binney Street, Boston, MA 02115.** *An Equal Opportunity Employer.*

**SCIENCE CURATOR.** Requirements are advanced degree in science; demonstrated writing and project management skills; experience in communicating science to nontechnical audience; develop exhibit proposals for funding; responsible for developing exhibit content in contemporary physics, chemistry, biology, and related fields. Send résumés to: **Dr. David Ucko, Deputy Director, California Museum of Science and Industry, 700 State Drive, Los Angeles, CA 90037.** *An Equal Opportunity Employer.*

**SOIL-PLANT RELATIONSHIPS/NUTRIENT CYCLING. ASSISTANT/ASSOCIATE PROFESSOR.** 12-month, 50 percent teaching/50 percent research, tenure-accruing position available 1 September 1987. Expertise required in soil-plant relationships and nutrient cycling on rangeland systems. Ph.D. in range science, plant ecology, or closely related area required. Submit letter of application, curriculum vitae, and three letters of reference to: **Dr. J. L. Schuster, Department of Range Science, Texas A&M University, College Station, TX 77843-2126.** Telephone: 409-845-5579. Application deadline is 15 June 1987. *Texas A&M is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### RESEARCH PHYSIOLOGIST

The Physiology Department of the Armed Forces Radiobiology Research Institute (AFRRI), Defense Nuclear Agency, is seeking candidates for a research physiologist position to study endothelial and white cell membrane physiology. Background in endothelial cell physiology or membrane biophysics preferred. Requirements are a Ph.D. in physiology or equivalent experience. This position, available immediately, is a 1-year appointment renewable up to 4 years. Salary ranges \$27,172 to \$35,326. To apply for this Civil Service position, send curriculum vitae or SF-171 to: **Armed Forces Radiobiology Research Institute, Civilian Personnel Office, Bethesda, MD 20814-5145.** Direct inquiries to: **Dr. Elaine Gallin, telephone: 202-295-0378, or Deborah Bush, Personnel Management Specialist, 202-295-1426.** U.S. citizenship is required. *AFRRI is an Equal Opportunity Employer.*

The Department of Genetics at Washington University School of Medicine invites applications for **TENURE-TRACK FACULTY POSITIONS** beginning fall 1988. Applications are especially encouraged from persons interested in the molecular genetics of higher eukaryotes. The Department of Genetics emphasizes basic research in an intellectual atmosphere conducive to creative research and collaboration. Research facilities are exceptional and include an extensive animal care facility within the department for use in mouse breeding, and well-equipped laboratories for cell culture. Applicants should send a résumé, brief statement of research plans, and the names of three people who could be contacted for recommendations. *An Equal Opportunity Employer M/F/H/V.* Send applications to: **Daniel L. Hartl, Head, Department of Genetics, Washington University School of Medicine, St. Louis, MO 63110-1095.**

**Stanford University/Sedimentary Geology.** The Department of Geology at Stanford University invites applications for a **TENURE-TRACK FACULTY POSITION** in clastic sedimentology or in the broad interdisciplinary area of paleoceanography-paleoclimatology. Applicants should have a clearly demonstrated interest in applying their specialty to larger questions surrounding the physical, chemical, and biological evolution of the oceans, or the development of continental margins and sedimentary basins, and innovative interpretation of the stratigraphic record. The growing program in sedimentary geology at Stanford includes faculty in organic geochemistry, sedimentology, marine micropaleontology, sedimentary tectonics, and marine stratigraphy and basin analysis. We are particularly interested in an individual who will take advantage of this especially lively mix of disciplines regardless of his/her research specialty. We also seek an individual with a relish for graduate and undergraduate teaching and with the drive and capacity to develop a unique research program emphasizing the power of the stratigraphic record to address geological or paleoceanographic questions which reach beyond their specialty.

Applicants should send a résumé, names and addresses of three individuals from whom letters of recommendation can be obtained, and a brief statement of research interests to: **Stephan A. Graham or James C. Ingle, Department of Geology, Stanford University, Stanford, CA 94305.** Although we are most interested in identifying mid-career and junior-level scientists with these interests, we will be pleased to receive applications from scientists at all levels. A Ph.D. is required. Applications must be received by 31 May 1987. *Stanford University is an Equal Opportunity/Affirmative Action Employer.*

## SYMPOSIUM

### INTERNATIONAL SYMPOSIUM

On the "Experimental and Theoretical Analysis of Metabolic Processes," Flathead Lake Lodge, Bigfork, Montana, 9 to 13 September 1987. For information contact: **ASM Meetings Department, 1913 I Street, NW, Washington, DC 20006.**

## ASSISTANTSHIPS

### BIOLOGY GRADUATE ASSISTANTSHIPS

Assistantships in Ph.D. program still available for qualified students. All students supported with 12-month stipends of approximately \$8300, plus tuition and dependency allowances. Active research programs in behavior, cell biology, development, genetics, neurophysiology, physiology, and evolution. Call collect: **David Bodznick, Graduate Admissions, Department of Biology, Wesleyan University, Middletown, CT 06457; 203-347-9411, extension 2719.**

## AWARDS

The International Life Sciences Institute (ILSI) announces that the annual **KENNETH MORGAREIDGE AWARD**, of \$5000 will be made in January 1988. Nominees should have made outstanding research contributions to the science of toxicology. Candidates must be from academic, government, or industrial institutions. The closing date for applications is 1 September 1987. For additional information contact: **Gretchen Bretsch, International Life Sciences Institute, 1126 Sixteenth Street, NW, Washington, DC 20036.** Telephone: 202-659-0074.

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIP, DEMENTIA RESEARCH.** Two-year clinical research training in the dementias of aging. Focus on epidemiology, neuropsychiatry, genetics, and neuropsychology. Participate in research in NIH-funded Alzheimer's Disease Research Center, Huntington's Disease Center, Down's Syndrome Clinic, teaching nursing home, laboratories of neuropharmacology, neuropathology, cognitive psychology, genetics. Applicants should have M.D. and completed residency, or Ph.D. and at least 1 year of postdoctoral experience. NIH stipend to begin 1 September 1987. *Minority and female candidates are especially encouraged to apply.* Send curriculum vitae and statement of research interests to: **Marshall Folstein, M.D. or Jason Brandt, Ph.D., Johns Hopkins Hospital, Osler 320, 600 North Wolfe Street, Baltimore, MD 21205.**

**MOLECULAR AND CELLULAR ENDOCRINOLOGY, POSTDOCTORAL FELLOWSHIP.** We are seeking a candidate with strong biochemistry/cell biology background to apply molecular biology techniques to study cellular/molecular regulation and genetic defects of G proteins and their effects. We offer competitive salaries and excellent fringe benefits. Send curriculum vitae, bibliography, and three letters of support to: **Dr. C. Van Dop, Howard Hughes Medical Institute, c/o Business Office, 398 Brookline Avenue, Boston, MA 02215.**

**POSTDOCTORAL POSITION.** Fellowship available to study the genetic and hormonal regulation of gene expression. Project will involve analysis of interactions between nuclear proteins and regulatory loci (or their allelic variants) of genes expressed during differentiation in males. Experience in recombinant DNA or protein purification techniques required. Send curriculum vitae and the names of three references to: **Dr. James F. Catterall, The Population Council, Box 273, Rockefeller University, 1230 New York, NY 10021.**

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Applications are invited for the following vacancies:

*Postdoctoral position in biochemistry*, to investigate the role of ascorbic acid as a cofactor in cultured cells and subcellular organelles using *in situ* enzyme kinetics, or to investigate ascorbic acid biosynthesis and its regulation. Applicants should have experience in biochemistry, enzymology, or recombinant DNA techniques. M. Levine, Building 8, Room 414, (Telephone 301-496-3304).

*Postdoctoral position in biochemistry/molecular biology*, to study defects in synthesis and secretion of lipase by cultured cells of mice born with Combined Lipase Deficiency (cf J. Biol. Chem. 260:2552, 1985). Experience in cell culture and protein biochemistry desirable. Robert O. Scow, Building 6, Room 113.

*Postdoctoral position in molecular biology and recombinant DNA*, to join a project to analyze trans-acting gene regulation mediated by HIV-III tat gene and its interaction with other viral and cellular genes. Candidate should preferably have experience in molecular biology and recombinant DNA research. Barrie J. Carter, Building 8, Room 304 (telephone 301-496-0604).

*Postdoctoral position in molecular endocrinology*, to investigate the mechanism of action of glucocorticoid, and antigluco-corticoid, steroids at the levels of receptor-steroid interactions and activation of gene transcription. Experience in the areas of biochemistry, molecular biology or endocrinology is desirable. S. Stoney Simons, Jr., Building 8, Room B2A-07 (telephone 301-496-6796).

*Postdoctoral position in mammalian developmental biology*, to study the mechanisms that control gene expression during oogenesis and early development in the mouse. The research involves a wide range of molecular experimental approaches. Ideally, candidates will be trained in current DNA/RNA methodologies and have a working knowledge of mouse embryology. There are no citizenship restrictions on this position. Jurrien Dean, Bldg. 6, Room B108 (telephone 301-496-6125).

*Postdoctoral position in immunochemistry*, to investigate cell receptors for antibodies responsible for cytopenias induced by allo- and auto-immunization and drug sensitization. Applicants should have experience in protein and peptide chemistry, immune assays generally and general biochemistry. N. Raphael Shulman, Bldg. 10, Room 8C101.

*Postdoctoral position and technician*, to join a team measuring changes in energy and structural rearrangements during voltage- and ligand-gating of ionic channels with patch clamp and phospholipid bilayers (cf Nature, 323:36-39 (1986)), and to relate these changes to directly measured forces between macromolecules. Applicants should have a background in electrophysiology, electrochemistry or macromolecular physical chemistry. Adrian Parsegian, Donald C. Rau, and Joshua Zimmerberg, Bldg. 10, Room 9N307 (telephone 301-496-1241).

*Postdoctoral position in molecular biology*, to study the DNA structure and regulation of the genes involved in polyamine biosynthesis in *Escherichia coli* and yeast. Celia White Tabor and Herbert Tabor, Building 8, Room 223, (telephone 301-496-2562).

*Postdoctoral position in molecular biology*, to study the mechanism of duplex DNA replication using bacteriophage T4 as a model system, or the transcriptional regulation of the T4 genome, especially T4 genes needed for DNA replication. Applicants should have a background in nucleic acid and protein biochemistry. Nancy G. Nossal, Bldg. 8, Room 2A-19 and Deborah M. Hinton, Bldg. 8, Room 2A-13 (telephone 301-496-2724).

*Postdoctoral position in molecular biology*, to apply recombinant DNA technology to define the molecular mechanisms of disease in patients with genetic forms of extreme insulin resistance, especially patients with mutations in the gene encoding the insulin receptor, S.I. Taylor, Building 10, Room 8N-250, (Telephone: 301-496-2596).

*Postdoctoral position in molecular biology*, to study the roles of genes, second messengers and DNA binding proteins in development in *Dictyostelium*. Applicants should have experience in molecular biology and biochemistry. Alan Kimmel, Building 6, Room B1-12.

*Postdoctoral position in molecular genetics*, to study the mechanism of nonheritable resistance to various antibiotics induced by salicylates in *Escherichia coli*. (See PNAS 82: 8771, 1985). Experience in the areas of molecular genetics, transport or antibiotic resistance is desirable. Judah L. Rosner, Building 2, Room 210.

Qualified applicants should send a curriculum vitae, bibliography, short statement of research interests, and the names of three references to the appropriate person at the NIDDK, NIH, 9000 Rockville Pike, Bethesda, MD 20892. Appointments can be offered to both U.S. citizens and other qualified applicants.

The NIH is located in Maryland close to Washington, D.C. It has nearly 3000 scientists carrying out research in 12 Institutes. The intramural program of the NIDDK has over 500 doctoral level scientists working on a broad range of basic and applied biomedical problems in 21 different groups.

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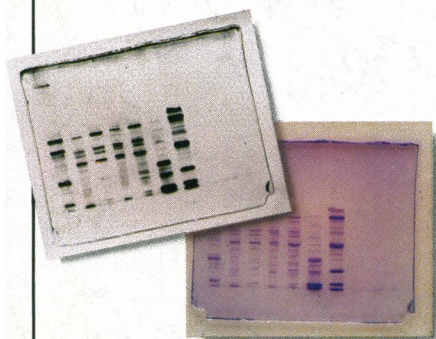
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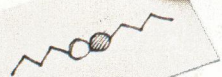
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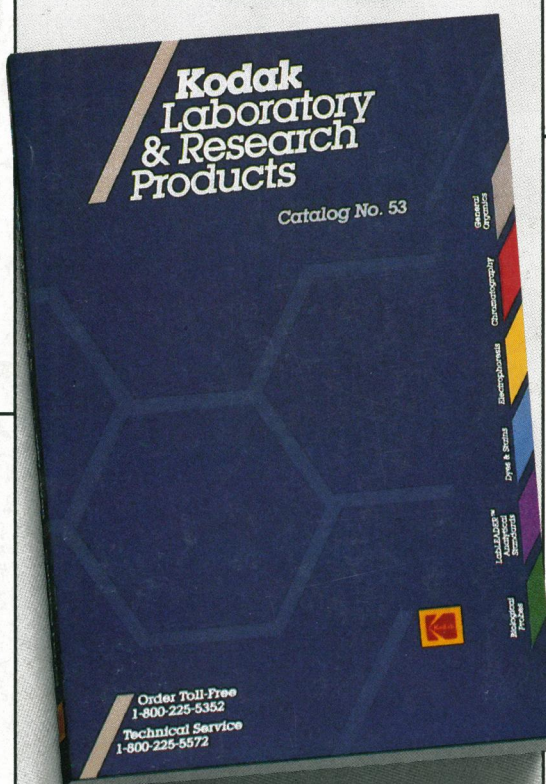
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