

logical perspective. The background information presented on topics such as punctuated equilibrium, "molecular clocks," and speciation models will be useful to molecular biologists who are not evolutionists. The next two chapters are a review of cytoplasmic organization and tissue interaction in embryogenesis. This is followed by a chapter on heterochrony. Next, the authors examine the genetic basis of these processes. Perhaps the best chapter in the book, which contains more original information, is "Homoeosis in ontogeny and phylogeny." In it the authors bring the large body of literature on homeotic mutants in insects to bear on the issue of the evolution of arthropods by progressive specialization of an initially segmented archetype. The book is completed with a review of the various molecular models of gene regulation.

The main points of the book appear to be (i) that we should expect morphological evolution to be discontinuous; (ii) that regulatory rather than structural genes are involved in generating major changes in morphological organization (the authors regard regulatory genes as acting like homoeotic mutants, by controlling switches among developmental pathways—see p. 338); and (iii) that morphological evolution is governed by a relatively small number of regulatory genes (p. 343). These are controversial issues having to do with some basic properties of evolutionary processes.

The main drawback of the book is the lack of satisfactory integration among the topics covered. For example, there is no explicit discussion of the relationships between microevolution and macroevolution, a topic of much current interest, which was central to Goldschmidt's ideas and concerning which developmental biology can make some contributions. Neither do we find a discussion of the consequences of the perspective offered for populational models based on natural selection operating on random genetic variation. Another example can be found in the discussion of heterochrony. A key assumption of the heterochronic approach is that developmental programs are conserved through phylogeny and most morphological change is the product of regulation of timing and rates on a resilient ontogeny. This assumption is not stated, nor is its validity addressed.

The authors' major effort appears to have gone into compiling empirical evidence rather than into trying to extract basic properties of regulatory systems and incorporate them into a more comprehensive theoretical framework. But

although the synthesis has not been made, the key components have been identified. Raff and Kaufman should be commended for undertaking the brave task of breaking new ground and for bringing together data from a wide range of disciplines. Different parts of the book will be informative to different audiences, and I believe it will strengthen the budding dialogue between developmental and evolutionary biologists.

PERE ALBERCH

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Books Received

The Arctic Ocean. The Hydrographic Environment and the Fate of Pollutants. Papers from a conference. Louis Rey and Bernard Stonehouse, Eds. Wiley-Interscience, New York, 1982. xii, 434 pp., illus. \$89.95.

Arsenic. Industrial, Biomedical, Environmental Perspectives. Proceedings of a symposium, Gaithersburg, Md., Nov. 1981. William H. Lederer and Robert J. Fensterheim, Eds. Van Nostrand Reinhold, New York, 1983. xvi, 444 pp., illus. \$42.

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- Tropical Savannas.** François Bourliere, Ed. Elsevier, New York, 1983. xii, 730 pp., illus. \$197.75. Ecosystems of the World 13.

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Tenure-track position (11-month; 40 percent teaching, 60 percent research) for Ph.D. in microbiology or an appropriate biological science with specialization in microbiology. Postdoctoral experience desirable. Position available immediately. Responsibilities will include teaching and student advising in food microbiology, and conducting research in which the fundamental and advanced techniques of microbiology are used to increase our knowledge of relationships between microbes and foods, for example, the growth of microbes in foods, food-borne diseases, or the use of microbes in food fermentations. Send résumé, including a summary of research experience and interests, undergraduate and graduate transcripts (if applicant is within 5 years of receiving doctorate), publication list, and the names and addresses of at least three referees to: Professor E. L. Barrett (Chair, Search Committee), Department of Food Science and Technology, University of California, Davis, Calif. 95616, by 1 October 1983. An Affirmative Action/Equal Opportunity Employer.

THE UNIVERSITY OF CALIFORNIA, IRVINE

Department of Psychiatry and Human Behavior is seeking applicants for a **BIOCHEMIST** to develop a clinical psychopharmacology laboratory. Applicants should have a Ph.D. in biochemistry and at least 5 years of experience in related work. He/she will be responsible for developing and supervising assays of antidepressants and other drugs, biological fluids for neurotransmitters, metabolites, and hormones. Expertise in norepinephrine metabolite measurement is requisite. Applicant should have expertise with GC, HPLC, and computer technology and must have supervised technicians. A record of publications and independent research interests is also needed. Applicant should have experience in supervising the development of a laboratory. Interested parties should send curriculum vitae and list of three to five references to:

Lawrence D. Sporty, M.D.
Clinical Professor and Vice-Chairman
Clinical Services
Department of Psychiatry and Human Behavior
University of California, Irvine
Medical Center
101 City Drive South
Orange, California 92668

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

BIOLOGIST/BIOCHEMIST PARALEGAL. Medical D.C. law firm seeks person with B.A./B.S. in the biological sciences for research assistant position. Responsibilities include extensive research and analysis in the scientific literature pertinent to drug and patent matters. Requirements include an excellent academic record with strong background in biochemistry and chemistry, good writing skills, and a command of the current literature. Some research experience with publications a plus. Excellent benefits. Competitive salary. Send writing sample and résumé to: Box 176, SCIENCE.

The University of Western Ontario Faculty of Medicine

CHAIRMAN Department of Clinical Neurological Sciences

Applications are invited for the position of chairman of the Department of Clinical Neurological Sciences, The University of Western Ontario, London, Ontario, Canada. The Department, actively involved in education, research, and clinical practice, consists of 19 full-time faculty members and 15 part-time members working in three major affiliated teaching hospitals. The Department consists of two divisions, neurosurgery and neurology, and has a large commitment to clinical and basic investigation.

The position requires an individual with strong leadership and administrative skills, a commitment to academic excellence, and a distinguished record of research and teaching.

Applications should be sent by 1 October 1983 to:

Dr. M. J. Hollenberg
Dean, Faculty of Medicine
The University of Western Ontario
Health Sciences Centre
London, Ontario, Canada N6A 5C1

In accordance with Canadian immigration requirements this advertisement is directed to Canadian citizens and permanent residents.

The University of Western Ontario is an Equal Opportunity Employer.

Research Scientists

Molecular Genetics, Inc., an innovative leader in the application of biotechnology to agriculture, has several research positions available for scientists seeking intellectual challenge in an academically-oriented biotechnology firm.

Research Associates Two positions available immediately in our Molecular Biology Group. Applicants should have either an M.S. degree or a B.S. degree and at least one year of laboratory experience. Training and experience in microbiology, virology, animal cell culture, yeast molecular biology or recombinant DNA technology are essential.

Postdoctoral Fellow A position is available immediately for a Postdoctoral Fellow to work in our Vectors Group designing and developing DNA vectors for the expression of foreign proteins in yeast. Rigorous training in yeast genetics and demonstrated experience in Recombinant DNA technology are essential.

Molecular Genetics, Inc. offers excellent, highly competitive salaries and fringe benefits. The Minneapolis-St. Paul area provides outstanding cultural, educational and recreational opportunities. Please send a detailed resume and a list of three references in confidence to:

William J. DeLorbe, Ph.D.
Molecular Genetics, Inc.
10320 Bren Road East
Minnetonka, MN 55343



Molecular Genetics Inc

Post Doctoral Scientists Tumor Cell Biology

SmithKline Beckman, a leader in pharmaceutical research, is seeking Post Doctoral Scientists to join an interdisciplinary research program directed by Dr. George Poste in an environment designed to foster creative, innovative research and to promote personal and professional growth.

We consider post doctoral studies to be of major importance in an individual's career and encourage publication of findings in leading journals and a full interaction with the scientific community.

Our post doctoral appointments are of 1 year duration and with mutual agreement, renewable for a 2nd year. The successful candidates will join a multidisciplinary team whose goal is to understand the biological and biochemical mechanisms of cancer metastasis. We are particularly interested in seeking individuals who can make a significant contribution to one of the following current programs:

- the role of DNA methylation in tumorigenicity and in the expression of the metastatic phenotype
- clonal interactions in human neoplasms
- the effect of standard chemotherapeutic regimens on clonal diversity in animal and human tumors
- identification of humoral components including hormones, growth factors and lymphokines that may regulate the clonal instability of animal and human tumors *in vitro* and *in vivo*
- devise innovative approaches for the therapy of heterogeneous animal and human tumors

Candidates are required to have a Ph.D. in Biology and/or Biochemistry with 0-3 years post doctoral experience.

Preference will be given to candidates having a strong background in tumor cell biology/biochemistry and relevant publications in major scientific journals.

We offer excellent compensation and benefits and an attractive relocation policy. For confidential consideration, send your C.V. and names of 3 references to: Mr. Walter B. Flagg, SMITHKLINE BECKMAN CORPORATION, P.O. Box 7929, 1596 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer, M/F/H/V.

SK&F
A SmithKline Beckman Company

ELECTROPHYSIOLOGIST

Norwich Eaton Pharmaceuticals, Inc. a wholly owned subsidiary of the Procter and Gamble Company is seeking qualified candidates interested in a challenging and satisfying career.

Applicants should have a PhD and 3-5 years experience. The work will involve understanding the basic mechanisms underlying development of cardiac arrhythmias, and the mechanism of action of antiarrhythmic drugs. The critical role of calcium and calcium-dependent processes in these events will form the underlying concept. In addition, other types of excitable tissue such as muscle and nerve may be included in these studies to determine the general nature of calcium and excitability. The purpose of the position is to add to the general expertise of the Section, add to our approach to understanding intracellular calcium homeostasis, and to use this knowledge to aid in the development of novel therapeutic entities.

A comprehensive salary and benefits package is provided. Send resume and salary requirements to Susan M. Finch / Personnel Representative.

**NORWICH EATON
PHARMACEUTICALS, INC.**
17 Eaton Avenue
Norwich, NY 13815

An Equal Opportunity Employer M/F

Pharmacologist - Principal Scientist

For

Growing Dallas-Fort Worth-Based Pharmaceutical Company

Alcon Laboratories is presently building its overall capability to generate new technology in the 1980's-90's. The primary thrust of this effort is development of innovative new drugs to treat certain eye and skin diseases.

As a part of this effort, we have an immediate need for an experienced Pharmacologist who can function effectively as an interdisciplinary team member. An additional must is proven ability to generate all pharmacological data required to support a systemic product from the initial screening stages to NDA filing. In other words, good insight into submission process requirements is definitely desired.

Other minimum requirements include:

- ☐ Ph.D in Pharmacology
- ☐ Three to six years of pharmaceutical drug development experience along with some team participation/coordination experience. Pharmacology research project supervision ability is an important attribute.
- ☐ Excellent communication skills, both oral and written, will be a must in order to effectively deal with all levels and disciplines in Research and Development and, when required, with marketing management personnel

If our opportunity is what you have been thinking of -- please give us serious consideration. We are a high technology corporation building for the future. We need and appreciate talented individual contributors who can function effectively as team members.

Naturally, our position includes a highly competitive starting salary, plus comprehensive benefits including profit sharing trust, group medical and dental.

To indicate your interest in exploring this key position on a confidential basis, please send your detailed C.V. to:

Ken G. Stevens, Corp. Mgr. - Placement & Development

Alcon

Alcon Laboratories, Inc.
P.O. Box 1959
Fort Worth, TX 76101

Equal Opportunity Employer, m/f/h/v
Principals Only, Please

POSITIONS OPEN

BIOCHEMIST/CELL BIOLOGIST. Faculty position beginning fall 1983. Ph.D. required. Send curriculum vitae, course listings, and names of three references by 1 August 1983 to: **David Taylor, University of South Carolina at Spartanburg, Spartanburg, S.C. 29303.** *Affirmative Action/Equal Opportunity Employer.*

The Division of Orthopaedic Research, Department of Orthopaedic Surgery, Brown University and Rhode Island Hospital, is seeking a **CHIEF** for the Laboratory of Connective Tissue Morphology. A major area of investigation includes the structural changes in muscle and nerve tissue in musculoskeletal deformities. Other areas of investigation in the laboratory involve cartilage and bone morphogenesis. Candidates should have a Ph.D. in anatomy, cell biology, or a related discipline and two or more years of postdoctoral experience in the structural aspects of connective tissue. Expertise in the light and electron microscopic evaluation of connective tissue is required and experience in immunofluorescent techniques would be desirable.

The candidate eventually selected must qualify for a full-time research faculty position at Brown University at the rank of assistant, associate, or full professor in the Department of Orthopaedics.

Interested individuals should send curriculum vitae by 15 September 1983 to:

John E. Handelsman, M.D.
Chairman, Search Committee
Brown University Program in Medicine
Department of Orthopaedic Surgery
Rhode Island Hospital
Providence, Rhode Island 02902

Rhode Island Hospital is an Equal Opportunity/Affirmative Action Employer.

CHROMATOGRAPHY SPECIALIST

Research assistant position available for multiuser chromatography laboratory. Seek individual with background, experience, and interest in preparative and analytical chromatography. Knowledge of the principles and practice of analytical biochemistry and quantitative analytical chemistry are essential. Candidate must have training and/or experience in biological, chemical, as well as familiarity with laboratory, analytical equipment, and procedures with a minimum of a B.S. degree in chemistry or biology. The candidate will be required to perform routine analysis of both low and high molecular weight compounds using either GC or HPLC techniques. Interested persons should send curriculum vitae and three letters of reference to: **Dean Franklin, Dalton Research Center, University of Missouri, Columbia, Missouri 65211.**

DEAN OF COOK COLLEGE, AND DIRECTOR, NEW JERSEY AGRICULTURAL EXPERIMENT STATION: Rutgers, The State University of New Jersey, invites nominations and applications for the position of **dean, Cook College, and director, New Jersey Agricultural Experiment Station.** Cook College has major offerings in environmental studies, life sciences, and agricultural sciences. Qualifications: earned doctorate, teaching and administrative experience, research accomplishment, and ability to integrate and provide leadership for teaching, research, and extension. Experience with the Land Grant system preferred. Send nominations and résumés by 30 September 1983 to: **Dr. A. Robert Koch, Chair, Search Committee, c/o Office of Vice President for University Personnel, RUTGERS, The State University, New Brunswick, N.J. 08903.** *An Equal Opportunity/Affirmative Action Employer.*

ENTOMOLOGY EXTENSION SPECIALIST-IN-CHARGE. Tenure-track, associate or full professor, 100 percent extension (approximately 60 percent administration, 40 percent individual program). Serve as program coordinator for department extension staff of 15 specialists; assist department head in directing statewide entomology extension program; facilitate interaction of entomology personnel with commodity groups, county extension staff, and other departments and agencies; and develop individual program in area of competence to complement existing department extension program. Requires Ph.D. in entomology or related, prefer agriculture and extension experience. Apply before 1 September 1983 by sending résumé, transcripts, statement of career goals, and names of three references to: **R. J. Kuhr, Head, Department of Entomology, North Carolina State University, Raleigh, N.C. 27650.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

Stanford University Medical School is seeking a **DIRECTOR** of its Division of Laboratory Animal Medicine. As assistant dean, the director will be responsible for all administrative and operational matters pertaining to the housing and care of laboratory animals. The director will serve on the Administrative Panel for Laboratory Animal Medicine and will represent the Division to the public and scientific community regarding the care and use of animals in research.

Compensation and other prerequisites will be highly competitive. The successful candidates will be Board-certified in laboratory animal medicine and must demonstrate significant past experience in the management of a similar animal research unit. *Stanford is an Equal Opportunity Employer and welcomes nominations of women and minority group members and applications from them.*

Interested candidates should contact: **David Mendelow, Associate Dean for Administration, Stanford Medical Center, Stanford, California 94305.**

EVOKED POTENTIAL TECHNICIAN. M.S. with experience in monitoring evoked potentials in patients, for new neurosurgical intensive care unit (ICU). Excellent salary and benefits. Send résumé to: **Mrs. Adler, New Jersey Medical School, Room H592, Newark, N.J. 07103.**

FACULTY POSITION IN MEDICAL BIOCHEMISTRY

Applications at any level, especially including the associate or full professor level, are solicited for a faculty position to be filled before or by September 1984. Applicants in all areas of biochemistry will be fully considered. Current departmental research interest include DNA sequencing, electron microscopy of nucleic acids, transposons, control of bacterial cell lysis, liposomes and membranes, and cellular export of complex carbohydrates. Senior candidates will be expected to have a funded research grant. The department has recently occupied space in a new medical sciences building. Sunbelt climate in College Station, Texas, located near Houston and Austin, midway between Snook and North Zulch. Send curriculum vitae and names of references to: **Dr. Garret M. Ihler, M.D., Ph.D., Head, Department of Medical Biochemistry, College of Medicine, Texas A & M University, College Station, Texas 77843.** *Equal Opportunity through Affirmative Action.*

MEMBRANE BIOCHEMISTRY

Available immediately. Opportunity for postdoctoral fellow with Ph.D. in chemistry, biochemistry, pharmacology, or related discipline to work on a project involving the application of electron spin resonance and other techniques for examining the effects of nicotine on cellular membranes. Salary dependent on qualifications and experience. Initial appointment for 1 year with possibility of renewal. Send curriculum vitae and three letters of reference to: **Dr. Wayne Hoss, Center for Brain Research, Box 605, University of Rochester, School of Medicine and Dentistry, Rochester, N.Y. 14642.** *Equal Opportunity Employer, M/F.*

MOLECULAR BIOLOGISTS

The Department of Biology, The University of Alabama, invites applications for two tenure-track positions at the **ASSISTANT or ASSOCIATE PROFESSOR** level to begin in August 1984. We seek individuals with research interests in molecular biology. Demonstrated expertise in some aspect of recombinant DNA technology (including gene isolation and cloning, nucleic acid sequencing and/or gene expression and regulation) is essential. Successful candidates will be expected to develop an active, independent research program and participate in departmental teaching programs. The Ph.D. is required and postdoctoral experience is preferred. Rank and salary commensurate with experience. Applicants should submit curriculum vitae, a statement of research interests, and at least three letters of reference by 1 September 1983 to:

Dr. Ronald Lindahl, Chairman
Search Committee
Department of Biology
P.O. Box 1927
The University of Alabama
University, Alabama 35486

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

POSITIONS OPEN

FLOW CYTOMETRY LABORATORY MANAGER

St. Jude Children's Research Hospital is seeking a person who is experienced in flow cytometry and cell sorting to manage a multiuser shared resource in a cancer research center. This laboratory is currently in operation with a Coulter EPICS-V flow cytometer and cell sorter with the MDADS mini-computer and technical support.

Responsibilities will include: supervision of technologists, quality control, development of techniques for investigators, and research and development within the laboratory. Master's or doctoral degree preferred, with experience interacting with multiple investigators in a multiuser facility.

Competitive salary (institutionally funded) with excellent fringe benefit package including 3 weeks of vacation the first year, and free dental, medical, and life insurance.

Send letter of application, curriculum vitae, and names and addresses of three references to:

Personnel Department
St. Jude Children's Research Hospital
332 North Lauderdale
Memphis, Tennessee 38101
Affirmative Action Employer

GENETICIST

A 1-year appointment at the rank of assistant professor is available in the Department of Biology, University of Arkansas at Little Rock, effective 17 August 1983. Renewal of appointment for a second year is likely and the possibility of conversion of the position to a tenure-track exists. Primary duties involve teaching undergraduate genetics and participation in the introductory biology course for majors and nonmajors. Emphasis is on quality instruction but research is encouraged and for tenure-track positions is required. The Ph.D. degree is required. Applicants should send curriculum vitae, unofficial transcripts, and three letters of reference to:

Dr. R. L. Watson, Chairman
Department of Biology
University of Arkansas at Little Rock
33rd and University Avenue
Little Rock, Ark. 72204

In order to receive full consideration, applications should be received by 29 July 1983.

An Equal Opportunity/Affirmative Action Employer

WANTED: Person to head laboratory with active ongoing research in basic gastric physiology. Both M.D. and Ph.D. degrees and extensive experience in investigation in this area together with good publication record are highly desirable. Position is to be at assistant professor level at the Harvard Medical School. Should be able to qualify for independent grant support. *We are an Equal Opportunity Employer.* Please respond to:

Dr. William Silen
330 Brookline Avenue
Boston, Mass. 02215

POSTDOCTORAL POSITIONS IN GENETICS.

Postdoctoral positions are open in the fields of mutations and carcinogenesis. Investigations of carcinogen-DNA adducts and mutation studies are currently under way. Techniques that are employed include DNA sequencing, nucleic acid synthesis, and biophysical chemistry. Those interested should apply by sending curriculum vitae and having three letters of recommendation forwarded to: **Dr. Thomas Meehan, Michigan Molecular Institute, 1910 West St. Andrews Road, Midland, Mich. 48640.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION available to study nucleic acid metabolism in parasitic protozoa. Research experience with HPLC techniques, DNA and RNA isolation required. Send curriculum vitae and three references to: **Dr. Linda Nolan, Department of Microbiology, University of Massachusetts, Amherst, Mass. 01003.** Deadline for submission of application: 1 September 1983. *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION available to join ongoing biochemical and genetic studies of cell-cell communication using *Dictyostelium* as a model system. Applicants with a strong background in biochemistry or cell biology preferred. Send curriculum vitae and names of three references to: **Dr. Peter Devreotes, Department of Physiological Chemistry, Johns Hopkins University, School of Medicine, Baltimore, Md. 21205.**



**The
MARINE
BIOLOGICAL
LABORATORY**

ANNOUNCES A NEW
SHORT COURSE

**BASIC IMMUNOHISTOCHEMICAL
TECHNIQUES IN TISSUE
SECTIONS AND WHOLEMOUNTS**

October 31, 1983 - November 4, 1983

Barbara Beltz, Neurobiology Department, Harvard Medical School, Course Director; Gail Burd, Rockefeller University, Associate Instructor. Enrollment Limited to 12 students.

Each student will choose his or her own tissue for work during the course: experiments appropriate to each tissue will be conducted, based on current knowledge of the chemistry and physiology of that preparation.

Immuno Nuclear Corporation, Stillwater, Minnesota has provided scholarship funds.

For additional information contact the Admissions Office, Marine Biological Laboratory, Woods Hole, Ma. 02543. (617) 548-3705.



IMMUNO NUCLEAR CORPORATION
STILLWATER, MINNESOTA 55082
800-328-1482

**THE ROLE AND SIGNIFICANCE OF INTERNATIONAL
COOPERATION IN THE BIOMEDICAL SCIENCES**

21 to 23 September 1983

Sponsored by: Fogarty International Center, National Institutes of Health

Organized by: Professors Gaetano Salvatore and Howard Schachman, Fogarty Scholars-in-Residence

Location: National Institutes of Health, Bethesda, Maryland

The principal goal of the symposium is to review through the knowledge and experience of outstanding scientists how the flow of ideas and resulting progress in the fields of biology and medicine have been influenced by the direct interactions among scientists from different nations. This conference will bring together leading scientists, directors of biomedical research organizations, and representatives of national and international scientific organizations concerned with science policy.

TOPICS AND SPEAKERS INCLUDE:

- **Evolution of the Biomedical Sciences**
(J. Edsall, E. Katchalski-Katzir)
- **The Central Role of Major Research Institutes**
(C. Anfinsen, F. Gros, D. Stetten)
- **Role of International Collaboration in the Development of Biochemistry, Biophysics, Genetics, and Molecular Biology**
(G. Cohen, D. Phillips, J. Steitz, D. Brown, P. Starlinger)
- **International Cooperation in Immunology and Molecular Endocrinology**
Chaired by Elvin Kabat and Joseph Rall
(R. Porter, G. Nossal, B. Benacerraf, J. Tata, E. Jensen, J. Roth)
- **Current Policies and Research Organizations Relating to International Scientific Collaboration**
Chaired by David Evered and Ruth Kirschstein
(D. Fredrickson, H. Danielsson, J. Tooze, O. Hayaishi, C. Kidd)
- **Panel and general discussion by the representatives of scientific and research organizations**
- **Role of International Cooperation in Clinical Investigation**
Chaired by Donald Seldin
(G. Geibisch, J. Stanbury, R. Unger, R. Luft, A. Renold)

INFORMATION AND REGISTRATION:

International Studies Branch
Fogarty International Center
Building 16A, Room 202
National Institutes of Health
Bethesda, Maryland 20205

DIRECTOR/ National Center for Advanced Materials

Salary Open

A search committee has been formed to identify and recommend a DIRECTOR for the National Center for Advanced Materials (NCAM).

Duties: Reporting to the Laboratory Director and also serving as an Associate Director of Lawrence Berkeley Laboratory, the NCAM Director will provide overall scientific and technical leadership and direction in the design, planning and establishment of the new center and its research programs. The NCAM Director's major responsibility will be the formulation and implementation of scientific programs in close collaboration with advisory groups comprised of representatives from industry and universities. Other responsibilities will include decision-making and problem-solving on staffing, funding, facilities planning and utilization, organizational structure and management liaison with the University of California and the U.S. Department of Energy.

Requirements: Must have a distinguished record of scientific achievement and management of major scientific programs. Proven leadership background is also necessary. The successful candidate should also have a proven record of interaction with a combination of academic institutions, scientific laboratories, private industry and the federal government. Must have a Ph.D. in Physical Sciences or Engineering with a strong research background related to Materials Science. Requires strong management skills in planning, decision-making, problem-solving, verbal and written communications, staffing, funding, facilities planning and utilization, and in the establishment and monitoring of performance expectations that result in achievement. "Position is subject to the financial disclosure requirements of the California Political Reform Act of 1974."

Please submit two copies of resume including salary history and the names and addresses of references to: Search Committee, Lawrence Berkeley Laboratory, Employment Office, One Cyclotron Road, Building 65, Berkeley, CA. 94720. Refer to Job #A/2102. Resumes must be received in the Employment Office by 8/1/83, 5:00PM. An equal opportunity employer, m/f/h.



**LAWRENCE
BERKELEY
LABORATORY**

POSITIONS OPEN

IMMUNOLOGIST—Department of Cell Biology, University of New Mexico School of Medicine. Prefer research interests in cellular immunology, cell surface biochemistry, and receptor-ligand interactions. Applicants must have 3 years of postdoctoral training and be capable of establishing an independent program. Rank and salary depend on qualifications. Send curriculum vitae, in-press manuscripts, statement of research goals, and names of three references to: **Dr. T. B. Tomasi, Director, Cancer Center, University of New Mexico, Albuquerque, N.M. 87131.**

MARINE BIOLOGIST MARINE SCIENCE COORDINATOR UNIVERSITY OF MIAMI

Tenure-track position available fall 1984 in the Department of Biology involves divided responsibilities: 50 percent research and teaching, 50 percent administration of interdepartmental undergraduate Marine Science Program (approximately 300 students). Appointment as assistant or beginning associate professor, rank and salary commensurate with qualifications and experience. Applicants should have Ph.D. or equivalent with specialization in marine biology, broad background in marine science, demonstrated administrative, research, and teaching abilities. Tropical interests preferred. Submit curriculum vitae, personal statement of research, teaching, and administrative experience and goals, recent reprints, and names of at least three references who may be contacted by 31 October 1983 to: **Marine Science Search Committee, Department of Biology, Box 249118, University of Miami, Coral Gables, Fla. 33124.**

An Equal Opportunity/Affirmative Action Employer

MOLECULAR BIOLOGIST—Department of Cell Biology, University of New Mexico School of Medicine. Seeking molecular biologist to fill tenure-track position at assistant or associate professor level. Minimum of 3 years of postdoctoral research experience in eukaryotic molecular biology and capable of establishing vigorous and independent research program. Curriculum vitae, representative reprints, statement of research goals, and names of three references to: **Chairperson, Department of Cell Biology, Cancer Center, University of New Mexico, Albuquerque, N.M. 87131.**

PHYSICAL OCEANOGRAPHY

Lamont-Doherty Geological Observatory of Columbia University is accepting applications for a new position as a **research scientist in physical oceanography**. This senior-level position is intended for a theoretician with prior scientific distinction in studying the low frequency response of the ocean to atmospheric forcing. The successful candidate will have demonstrated leadership in developing programs which combine field observations and theoretical modeling of ocean circulation. Potential to interact with other climate-related programs (for example, atmospheric circulation models, geochemical tracer studies of ocean circulation, paleoceanography) will be considered in reviewing applicants. Deadline: 15 September 1983. Send curriculum vitae to: **R. M. Cline, Division Administrator, Oceans and Climates Division, Lamont-Doherty Geological Observatory, Palisades, N.Y. 10964.**

Columbia University is an Affirmative Action/Equal Opportunity Employer.

TWO POSTDOCTORAL ASSOCIATE positions available in fall 1983 for research in either (i) cutaneous perception of surface texture or (ii) cutaneous pain and hyperalgesia. Involves electrophysiological recordings from peripheral and central nervous system of primates combined with psychophysical studies of cutaneous sensation. Pharmacological and anatomical studies are also planned. Background in biomedical engineering, neurophysiology, psychophysics, or pharmacology is recommended. Send curriculum vitae and list of references to: **Dr. Robert LaMotte, Section of Neuroanatomy, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available to study steroid biosynthesis and regulation. Areas of work experience should include steroid chemistry and synthesis, enzyme kinetics, and steroid biochemistry. Send curriculum vitae and references to: **Dr. A. Brodie, Department of Pharmacology and Experimental Therapeutics, University of Maryland School of Medicine, 660 West Lombard Street, Baltimore, Md. 21201.**

POSITIONS OPEN

POSTDOCTORAL FELLOW position immediately available for 1 to 3 years for qualified Ph.D. with experience in molecular cloning of eukaryotic genes, recombinant DNA technology, and DNA sequencing, to join project involving cloning and characterization of genes coding for cytoskeletal components in human erythrocytes. Salary range: \$18,000 to \$21,000. Send curriculum vitae and three references to: **Dr. Jonathan Tyler, Department of Genetics, University of Alberta, Edmonton, Alberta, Canada T6G 2E9.**

POSTDOCTORAL FELLOW IN PHARMACOLOGY. Postdoctoral fellow for research on surgical problems and vasoactive peptide release. Applicant should have M.D. degree and surgical residency and have experience in histamine, bradykinin, and auto-coid experimentation. Send applications by 1 August to: **Dr. Lowell M. Greenbaum, Professor and Chairman, Department of Pharmacology, Medical College of Georgia, Augusta, Georgia 30912. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION. The Dana-Farber Cancer Institute is seeking to fill one **RESEARCH POSITION** at the postdoctoral level to study the enzymology of genetic recombination in yeast or *Escherichia coli*. Experience with recombinant DNA technology helpful. Joint appointment will be held in an appropriate department of Harvard Medical School. Send curriculum vitae and names of three references to: **Dr. Richard Kolodner, Dana-Farber Cancer Institute, 44 Binney Street, Boston, Mass. 02115. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION (molecular biology/bacterial pathogenesis) available immediately (or negotiable) for 2 to 3 years employing recombinant DNA technology to study the genetics, pathogenesis, and immunology of *Treponema pallidum*. Candidates with a strong background in bacterial genetics, nucleic acids, cloning, and gene expression will be given preference. Emphasis shall be on using molecular biological approaches for the identification, isolation, and characterization of key recombinant *T. pallidum* antigens or immunogens. Please send curriculum vitae and the names of three references to: **Dr. Michael V. Norgard, Department of Microbiology, University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235. Equal Opportunity University.**

POSTDOCTORAL POSITION available in the Department of Pharmacology for someone interested in pharmacological mechanisms at the junctions of the cardiac sympathetic nerves of the heart. This research on whole animals is directed toward the assessment of the role of transmitter release in cardiac arrhythmias. The department has active research programs in several other areas of cardiovascular pharmacology and the fellow will have an opportunity to observe activities in these laboratories during the tenure of the fellowship. Send curriculum vitae and three references to: **Dr. George A. Condouris, Department of Pharmacology, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY—New Jersey Medical School, 100 Bergen Street, Newark, New Jersey 07103. An Equal Opportunity/Affirmative Action Employer, M/F.**

POSTDOCTORAL POSITION available immediately for person with M.D. or Ph.D. in pharmacology or physiology. This is a research position with a group concerned with regulation of the pulmonary circulation, with emphasis on pharmacologic and autonomic nervous control. Position for 1 year with additional year possible. Send résumé with names of referees to: **Albert L. Hyman, M.D., Research Professor, Department of Surgery, Room 8715 Tulane Medical School, 1430 Tulane Avenue, New Orleans La. 70112. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION available to study means of identification of subpopulations of mononuclear phagocytes and to investigate developmental and other influences on functional differentiation of such cells. Experience in cell separation, assays of macrophage function, and protein purification desirable. Stipend begins at \$16,000, based on experience. Please send curriculum vitae and names of three references to: **Dr. A. Volkman, Department of Pathology, East Carolina University School of Medicine, Greenville, N.C. 27834. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS IN MOLECULAR GENETICS available 1 August 1983. Our research group is studying the structure, function, and regulation of various cloned genes involved in DNA repair in the eukaryotic organism, the yeast *Saccharomyces cerevisiae*. Projects involve transcriptional and translational regulation, DNA sequencing, in vitro mutagenesis, and purification and characterization of the protein products of these DNA repair genes. Background in biochemistry/recombinant DNA technology preferred. Send curriculum vitae and two letters of reference to: **Dr. Satya Prakash, Professor, Department of Biology, University of Rochester, Rochester, N.Y. 14627. An Equal Opportunity/Affirmative Action Employer.**

TWO POSTDOCTORAL POSITIONS available immediately to study (i) hormonal control of cardiac membrane protein phosphorylation and (ii) biochemical aspects of muscarinic receptors and their functional mechanisms. Ph.D. or equivalent required. Biochemical background preferred. Salary: \$15,000. Send curriculum vitae and names of two references to: **M. Marlene Hosey, Ph.D., Department of Biological Chemistry and Structure, Chicago Medical School, 3333 Green Bay Road, North Chicago, Ill. 60064.**

POSTDOCTORAL POSITION available 1 August 1983 for Ph.D. in microbiology, biochemistry, or related field to participate in studies in the effects/functions of DNA secondary structure in the regulation of gene expression. Studies involve site-specific mutagenesis by genetic engineering technology and analysis of mutant genomes by in vitro/in vivo transcription and translation. Excellent research facilities in a new science building 100 miles east of the Research Triangle Park in a pleasant, nonurban university community. The position is NIH funded for up to 3 years. Send curriculum vitae and names of three references to: **Dr. Uwe Müller, Department of Microbiology, School of Medicine, East Carolina University, Greenville, N.C. 27834. An Equal Opportunity through Affirmative Action Employer.**

POSTDOCTORAL/RESEARCH ASSOCIATES

To investigate **TRANSCELLULAR IgG TRANSPORT** at the ultrastructural and biochemical levels in a unique tissue culture system, or to use existing monoclonal Ab to study **COATED VESICLE STRUCTURE** and assembly. Send curriculum vitae and telephone numbers of three referees to: **Dr. Thomas F. Roth, Department of Biological Sciences, University of Maryland Baltimore County, Baltimore, Md. 21228.**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL SCIENTIST. Position presently available for psychologist/psychopharmacologist to participate in studies of alcohol, inhalants, and drugs of abuse to include the mechanism of drug-behavior interactions. Work will be under the supervision of Dr. Irving Geller, director of our Behavioral Pharmacology Department. Applicants should have dissertation research in operant conditioning with at least 1 year of relevant postdoctoral experience desired. Annual salary will range between \$17,784 and \$20,529, dependent upon experience relative to requirements. Please respond to: **Personnel Manager, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284.** Include curriculum vitae, a description of research interests, and names of three references, including major professor, in initial correspondence. *An Equal Opportunity/Affirmative Action Employer.*

The University of Wisconsin Theoretical Chemistry Institute has an opening for a **PROJECT ASSOCIATE** to generalize existing theoretical techniques for determining the properties of molecules interacting with quantized electromagnetic fields and coherent laser pulses. The position requires (i) development of perturbation techniques to obtain analytical solutions and (ii) use of computational techniques to generate numerical solutions. The candidate must possess a Ph.D. degree in theoretical physics and have at least 1 year of postdoctoral research experience in this area, as evidenced by relevant publications. In addition, he/she should have demonstrated skills in digital computation. The position is full-time (40 hours per week minimum) with a starting salary of \$1,460 per month. To apply, contact: **William Janek, Wisconsin Job Service, 206 North Broom Street, Madison, Wisconsin 53703. Telephone: 608-266-1492. Equal Opportunity Employer.** Job Service funds do not pay for this advertisement.

**SECRETARY
SMITHSONIAN INSTITUTION**

The Board of Regents of the Smithsonian Institution invites applications and nominations for the position of Secretary of the Institution. As the chief executive officer, the secretary is responsible for the development and oversight of a wide variety of activities, including research, publishing, exhibition, and educational programs in the sciences, arts, and history. Attendant responsibilities include supervision of museum, laboratory, and library operations; fund-raising; support services; and development of auxiliary activities and educational outreach. The secretary administers an annual budget of approximately \$300 million in federal appropriations and nonappropriated trust funds, directing approximately 3700 Civil Service and 1700 non-federal employees in 13 museums, a zoological park, and a number of major scientific research installations and nature preserves. The secretary represents the Institution before the Congress, the executive branch, professional societies, educational institutions, foundations and granting organizations, and the public.

Candidates should have a Ph.D. or equivalent preparation in a field of study relevant to the Smithsonian. Additionally, candidates should have a record of superior scholarly accomplishment, a facility for written and oral communication, relevant administrative experience, and exceptional leadership ability.

Applications and nominations should be sent by 15 September 1983 to:

**James M. Hobbins
Secretary to the Search Committee
Room SI-215
Smithsonian Institution
Washington, D.C. 20560**

All applications and nominations will be treated confidentially.

The Smithsonian Institution is an Equal Opportunity/Affirmative Action Employer.

**DEPUTY ASSISTANT ADMINISTRATOR
FOR OCEANIC AND ATMOSPHERIC RESEARCH**

The Office of Oceanic and Atmospheric Research (OAR), National Oceanic and Atmospheric Administration (NOAA), has announced the vacancy of **Deputy Assistant Administrator for Oceanic and Atmospheric Research**, located in Rockville, Maryland. The Office of Oceanic and Atmospheric Research is responsible for an integrated NOAA oceanic and atmospheric research and development program. The program consists of laboratory and extramural research projects that are relevant to NOAA service and resource management programs, and that provide sound technological and scientific principles on which to base improvements of those services and products. The deputy assistant administrator functions as full deputy and alter ego to the assistant administrator, OAR; fully shares in the direction and management of the office; and acts in the absence of the assistant administrator. Is responsible for determining future directions for office programs, setting priorities on current and future programs, and allocating resources. Undertakes special assignments to develop and recommend new or modified policies and programs in areas of a complex scientific and politically sensitive nature. Works with the administrator, deputy administrator, and associate administrator in defining objectives; with external constituencies in developing the substance of OAR programs; and with congressional and outside interest groups in tailoring these programs to the requirements of the political scene. Also works with other federal agencies to achieve coordinated research on problems of common interest. Provides authoritative representation to intergovernmental, national, and international councils and meetings concerning NOAA interests in the areas of oceanic and atmospheric science and technology. Participates in bilateral negotiations and in interagency coordination mechanisms. **QUALIFICATIONS:** This is an exciting and challenging opportunity for an individual with demonstrated knowledge of oceanographic, meteorological, environmental, physical, and/or engineering sciences (including at least 24 semester hours in physical science and/or closely related engineering science at the college level). Broad knowledge of current problems, issues, and programs in the field of oceanic and atmospheric science is required. **SALARY:** This position will be filled under the Senior Executive Service (SES). Salary could range from \$56,945 to \$67,200 per annum. **APPLICATION:** Interested persons should call the NOAA Headquarters Personnel Section (telephone: 301-443-8373) to receive a copy of the complete vacancy announcement and qualification requirements. Applications must address the specific qualifications required in that announcement. Applicants must also send a U.S. Standard Form 171, Personal Qualifications Statement, to: Susan D. Cisar, Personnel Management Specialist, Headquarters Personnel Section, AT/PER11, NOAA, 6001 Executive Boulevard, Rockville, Maryland 20852, by 20 August 1983. *The Department of Commerce, National Oceanic and Atmospheric Administration, is an Equal Opportunity Employer.*

CNS Behavioral Pharmacologist

This Central Nervous System Section of the Department of Biological Research has an immediate position available for a Research Scientist with experience in the Behavioral area. The position is for a senior scientist trained in Behavioral Pharmacology or physiological psychology with 5-10 years post-doctoral experience. A Ph.D. or equivalent is required. The scientist will be responsible for the identification and evaluation of drugs that affect the central nervous system especially as they relate to memory and cognition. He/she will be part of the CNS research team and will be provided with appropriate support staff and a well-equipped laboratory. Good communication, supervisory and interpersonal skills are needed. Industrial experience in drug evaluation and some expertise in neurophysiology are desirable.

We offer a full benefit package and a compensation program commensurate with your experience. For prompt consideration, please send your resume with salary history/requirements to:

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#727-10

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SEARLE

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RESEARCH FELLOW BACTERIAL PROTOPLAST FUSION

Allelix Inc., Canada's first major biotechnology company, is seeking a Research Fellow to work in the area of bacterial protoplast fusion under a two-to-three-year appointment. The successful candidate must be able to work independently, while also contributing as a member of the soil microbiology group. Applicants should have a Ph.D. and research experience with bacterial protoplasts.

The founders of Allelix have provided strong financial backing. Research is conducted in a modern, well-equipped laboratory near Toronto, a dynamic, multi-cultural city offering a full scope of activities and interests. Four major universities are easily accessible. Salaries and benefits are at fully competitive levels.

Interested candidates are invited to send complete résumés including three references and quoting reference number 0050, to:

**Dr. D. C. Burke
Allelix Inc.
6850 Goreway Drive
Mississauga, Ontario
L4V 1P1, Canada**

POSITIONS OPEN

POSTDOCTORAL STUDENT POSITION available for studies on the influence of hormones and extracellular matrix on normal and neoplastic (rat and human) liver cells. Special emphasis will be placed on studies of the regulation of gene expression using techniques of molecular biology. Please send curriculum vitae and references to: **Dr. L. Reid, Albert Einstein College of Medicine, 601 Chanin Cancer Center, 1300 Morris Park Avenue, Bronx, N.Y. 10461.**

PROTEIN CHEMIST SYNTHETIC ORGANIC CHEMIST

RESEARCH ASSOCIATE/POSTDOCTORAL. Both positions available immediately for recent Ph.D.'s. **Protein chemist** to radiolabel proteins using bifunctional chelate methodology, in particular monoclonal antibodies for tumor detection by imaging. Must have demonstrated skills in protein manipulation and familiarity with techniques such as gel electrophoresis, column chromatography, chemical modification of proteins, and immunological methods. **Organic chemist** to help design and synthesize new chelating groups with desirable properties for use in new radiopharmaceuticals employing bifunctional chelate methodology. Send detailed résumé and list of three references to: **Dr. D. J. Hnatowich, Department of Nuclear Medicine, University of Massachusetts Medical Center, Worcester, Mass. 01605.** *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE: Cell culturing, studying the effects of anti-cancer drugs on cell proliferation, isolation, and purification of proteins associated with DNA synthesis and mitosis. Study the role of polyamines in mammalian chromosomes condensation. Use knowledge in tissue culture, cell fusion, protein biochemistry including chromatography and electrophoresis techniques. Ph.D. degree in biological sciences with 2 years of experience in cell biology-tissue culture. Forty hours per week, \$17,700 annual salary. Apply at: **the Texas Employment Commission, Houston, Texas,** or send résumé to: **Texas Employment Commission, TEC Building, Austin, Texas 78778, Job Order Number 3181332.** *Ad paid by an Equal Opportunity Employer.*

POSITIONS OPEN

PROJECT SCIENTIST AND POSTDOCTORAL POSITIONS in radiation biology and biophysics available August 1983. Research will focus on radiation damage and repair at molecular and cellular levels, and alternation of proliferation kinetics following ionizing radiation treatments. Various advanced techniques including alkaline elution, chromosome and cell imaging, flow cytometry and cell sorter, and nuclear magnetic resonance will be utilized in these studies. In addition to conventional radiation sources such as γ -rays and x-rays, cyclotron-produced neutrons and charged particles, and mixed radiation facility are available. Individual with a background in molecular biology, mammalian cell biology, or biochemistry with experience in some of the aforementioned techniques will be desirable. Send résumé and letters of recommendation to: **Dr. Frank Q. H. Ngo, Laboratory of Radiobiology and NMR Research, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, Ohio 44106.**

TUMOR IMMUNOLOGIST

Program Resources, Inc. (PRI), the Operations and Technical Support Contractor for the NCI-Frederick Cancer Research Facility, has an immediate opening for an experienced tumor immunologist in the Pre-clinical Screen of the Biological Response Modifiers Program.

The successful candidate should be a second-year postdoctoral fellow or a research scientist experienced in tumor immunology who would be joining the facility in the preclinical testing of BRM's for the treatment of cancer. Experience with in vitro assays of cell mediated immunity and in vivo tumor therapy models (metastasis) are essential.

Program Resources, Inc., offers an attractive salary and company benefits program.

For consideration, please send curriculum vitae, salary requirement, three letters of reference, and a complete publication list to:

**NCI-Frederick Cancer Research Facility
PRI Personnel Department
P.O. Box B
Frederick, Md. 21701**

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POSITIONS OPEN

RESEARCH ASSOCIATE

Postdoctoral position available to study regulation of expression of the actin gene family during embryonic development. Background in molecular and/or developmental biology preferred. Send curriculum vitae and names of three references to: **Dr. William R. Crain, Jr., c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, Massachusetts 01545.**

An Equal Opportunity/Affirmative Action Employer

RESEARCH CHEMIST with U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Barley and Malt Laboratory, University of Wisconsin, Madison, Wisconsin. Faculty appointment possible; 75 percent research on grain quality; 25 percent supervision of quality evaluation service for oats and malting barley. Research: Investigate enzymes, substrates, and product during malting and effects of genotypic and processing variables; cereal composition related to nutritional quality as affected by genotype and environment; and development of new techniques for evaluating grain quality. Ph.D. in biochemistry or in allied field with a strong biochemistry minor desired. Postdoctoral experience desired. Knowledge of microbiology, enzymology, and skills in macromolecular purification required. Career position. GS-12/13. Salary range: \$29,374 to \$45,406 depending on qualifications. Candidates must be U.S. citizens. *An Equal Opportunity Employer.* For applications, contact: **Marie Bishop, USDA-ARS-NCRO-P1, 2000 West Pioneer Parkway, Peoria, Ill. 61615. Telephone: 309-671-7134.**

SOIL SCIENTIST to research properties of mine soils/spoils as they relate to plant growth. Qualifications: M.S. with research experience or Ph.D. preferred. Term: 1983 summer and 1983-1984 academic year (to 30 April 1984); continuation possible. Apply immediately with curriculum vitae, selected publications, and reference information to: **Dr. Stuart A. Nicholson, Associate Director, Project Reclamation, Box 8122, University of North Dakota, Grand Forks, N.D. 58202.** *The University of North Dakota is an Equal Opportunity/Affirmative Action Employer.*

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL

Announcement Availability of a Faculty Position

PROGRAM DIRECTOR AND PROFESSOR: A full-time, tenured faculty position, with the rank of professor, in a clinical department, University of Minnesota Medical School, as program director of the NIH-funded General Clinical Research Center (GCRC).

Position offers: Opportunity to conduct basic and clinical investigations utilizing resources of GCRC; responsibility for administration and supervision of GCRC, including relationship with University of Minnesota Hospitals and Clinics; and participation in teaching and patient care activities.

Qualifications include: Academic physician-investigator who has completed post-residency fellowship or equivalent training in clinical investigation and/or basic biomedical research; clinical specialty Board-eligibility or -certification; previous or current faculty appointments at major academic medical centers at rank of associate professor or professor or equivalent; extensive experience as a grant-funded investigator with a national reputation in biomedical research; experience in graduate medical education; and experience in the provision and supervision of direct patient care in teaching hospitals.

Deadline for receipt of applications is 15 September 1983.

Position available 1 January 1984, or other negotiable date; salary negotiable, related to qualifications of candidates.

To apply, contact: **Dr. Bernard Mirkin, Departments of Pediatrics and Pharmacology, Division of Clinical Pharmacology, University of Minnesota Medical School, Box 87 Mayo Memorial Building, 420 Delaware Street, SE, Minneapolis, Minnesota 55455; telephone: 612-373-2060.**

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

FACULTY POSITION IN VETERINARY PHARMACOLOGY AND TOXICOLOGY

The Department of Veterinary Pharmacology and Toxicology in the School of Veterinary Medicine at the University of California at Davis invites applications from qualified individuals for a position in toxicology. Appointment to this position will be made at the assistant professor level. **Qualifications:** An established scientist in the field of toxicology with a proven record of achievement in research relevant to veterinary-related toxicologic problems including the actions of toxic substances and the mechanisms of toxic reactions in animals. Demonstrated competence for teaching and an interest in conducting research in an aspect of veterinary toxicology. An advanced degree (Ph.D.) in the field of toxicology with postdoctoral experience. A D.V.M. is highly desirable, but not essential. **Teaching:** Professional—Teach and develop courses and a sound academic program, basic and applied, in toxicology for professional students. Graduate—Opportunity to develop courses and instruct graduate academic and clinical students in formal courses and in graduate seminars in veterinary toxicology. Direction of graduate students in independent study and in pursuit of graduate degrees. Willing to participate in developing a graduate training program in veterinary toxicology in the School of Veterinary Medicine and with the Graduate Group in Comparative Pharmacology and Toxicology. **Research:** The development of a creative and productive research program is an indispensable requirement of the position. The candidate for this position will be required to participate in the development and strengthening of a research program in veterinary toxicology in collaboration with toxicology programs on the campus. Send curriculum vitae, a list of publications, and names of three referees to: **Dr. Shri N. Giri, Search Committee Chair, Department of Veterinary Pharmacology and Toxicology, School of Veterinary Medicine, University of California, Davis, Calif. 95616.** The closing date for receipt of applications is 30 September 1983. *University of California is an Equal Opportunity/Affirmative Action Employer.*

CHAIRPERSON Pharmacology

The Albert Einstein College of Medicine of Yeshiva University seeks a Chairperson for the Department of Molecular Pharmacology. Individuals with a strong commitment and record of research accomplishment are invited to reply. The selected Chairperson will become a tenured professor with the availability of space and resources to continue and expand a high-quality department. Applications from women and minorities are especially invited. Interested candidates are requested to send C.V.'s to: **Norman Fleischer, MD, Professor of Medicine, Chairman of Search Committee for Molecular Pharmacology.**

The Albert Einstein College of Medicine

**1300 Morris Park Avenue
Bronx, New York 10461**

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Department Head, Clinical/Analytical Chemistry Quality Control

Calbiochem-Behring, a La Jolla, California based biochemical/diagnostics manufacturing firm, has an immediate opportunity for an individual to manage the operations of its clinical chemistry, raw material and analytical quality control groups. The selected candidate will be responsible for the timely, accurate testing and evaluation of all raw materials and assigned reagents.

Candidates who have an M.S. degree in chemistry or B.S. degree and extensive quality control experience in clinical chemistry, enzyme chemistry and quantitative analysis are invited to apply. Position requires highly motivated individual with three or more years industrial management experience and a demonstrated ability to effectively communicate with all levels of management.

Calbiochem-Behring is a moderately-sized division of American Hoechst Corporation and the clinical chemistry resource for Hoechst AG, the world's largest chemical manufacturer.

Excellent salary, benefits and work surroundings in America's finest city. Please submit resume and salary history to JOYCE PEDLOW, EMPLOYMENT MANAGER:

Calbiochem-Behring
Division of American Hoechst Corporation
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MAMMALIAN CELL CULTURE

Genentech, Inc., a recognized leader in recombinant DNA research and manufacturing, has immediate openings for large scale cell culture development at all levels.

Qualifications for the positions are BS, MS or PhD with relevant postgraduate experience. Desirable backgrounds include cell biology, cell culture process development, cell process scale-up, fermentation design and engineering & biochemical engineering. Prior industrial experience extremely helpful.

The work will be carried out in a strong multidisciplinary team environment.

We offer excellent salaries and benefits complemented by a liberal relocation program and a stimulating, professional environment. For immediate consideration please forward curriculum vitae, including the names of three references, to **Human Resources**. Please refer to **Position SCI-320**.

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POSITIONS OPEN

RESEARCH ASSOCIATE POSITION. We are seeking a suitable candidate with experience in immunochemical techniques including monoclonal antibody production and purification to join a Lipoprotein Study Group involved in the structural and functional characterization of plasma lipoprotein as well as the definition of apolipoprotein variants in disease states. A Ph.D. in immunology or equivalent experience is required. Salary according to qualifications. Immediate starting date. Position will allow for academic advancement. Send inquiries to: **Lipoprotein Study Unit, 950 East 59th Street, Box 231, Chicago, Ill. 60637.**

RESEARCH ASSOCIATE: Ph.D. with 3 years of postdoctoral experience in all following areas: (i) muscle cell culture and cloning of chick, rat, mouse primaries and lines; (ii) preparation of mRNA, polyosomes, cell-free translation systems; (iii) purification of proteins, column chromatography, 1- and 2-D gel electrophoresis, autoradiography, silver staining; (iv) radioisotopes; (v) myosin light chains; (vi) BUDR and other differentiation blockers; and (vii) biology teaching. Send curriculum vitae and names of three references to: **Mark Nameroff, Department of Biological Structure, University of Washington, SM-20, Seattle, Wash. 98195. An Affirmative Action/Equal Opportunity Employer.**

RESEARCH ASSOCIATE—POSTDOCTORAL POSITION

Available after 1 September for an individual with biochemistry or immunochemistry background, experience with nucleic acid fractionation, gene cloning or recombinant DNA research, hybridoma technology. Studies involve cellular and molecular programming in mammalian immune systems. Send curriculum vitae and letters of recommendation to: **Dr. Ronald Paque, Department of Microbiology, University of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, Texas 78284. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATE—SOIL SCIENCE. Position with research unit working on mechanisms of straw decomposition and residue management effects on soil stability and crop-nutrient cycling using a mechanistic model. Training in soil microbiology required. Send curriculum vitae and three letters of reference to: **Dr. L. F. Elliott, Department of Agronomy and Soils, Washington State University, Pullman, Wash. 99164-6421.** One-year appointment with options for renewal. Screening starts 1 August 1983, but applications will be accepted until suitable candidates are identified. *An Equal Opportunity/Affirmative Action Employer.*

SENIOR FOOD SCIENTIST, Department of Food Science, University of Illinois. An individual with a Ph.D. in food science or biochemistry and 1 to 3 years of postdoctoral experience is required to help supervise a research program examining the relationship of dietary lipids to disease. Applicants should have demonstrated skills in cell culture, HPLC and GC chromatographic techniques, and protein isolation, and should be able to apply these skills to the study of biological membranes. Salary range: \$24,000 to \$25,000 per annum. Send curriculum vitae and names of three references to: **Job Service Department, 402 North Randolph Street, Champaign, Ill. 61820.**

VETERINARY GROSS ANATOMIST. Applications are invited for a faculty position in the Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology at Washington State University. Acceptable candidates should have prior experience or training in teaching veterinary gross anatomy and have demonstrated the ability to establish a research program in their area of interest. Possession of both D.V.M. and Ph.D. or equivalent degrees is desirable but applicants with either degree will be considered. Rank and salary will be commensurate with background and experience. The selection process will begin on 15 August 1983. The starting date for this position is 1 September 1983 or as soon thereafter as possible. Inquiries and applications, including curriculum vitae and the names of at least three references, should be addressed to: **Dr. Marc H. Ratzlaff, Chairman, Anatomy Search Committee, Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology, College of Veterinary Medicine, Washington State University, Pullman, Wash. 99164-6520. Telephone: 509-335-2153. Washington State University is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

RESEARCH ASSOCIATES. Positions for biochemists (Ph.D.) in NCI-supported studies on the mechanisms of action in carcinogenic aromatic amines. Investigations involve collaboration with integrated, multidisciplinary group at a nonprofit research institution within the Comprehensive Cancer Center of Metropolitan Detroit. Curriculum vitae and references should be sent to: **C. M. King, Ph.D., Chairman, Department of Chemical Carcinogenesis, Michigan Cancer Foundation, 110 East Warren Avenue, Detroit, Mich. 48201.**

RESEARCH SCIENTIST position in a biotechnology firm. We are seeking a plant cytogeneticist to conduct basic research in cytogenetics, genetics, protoplast, and tissue cultures of the cultivated soybean and wild species related to the soybean. The incumbent will also be expected to develop protocols for embryo rescue of soybeans and soybean hybrids and to coordinate cytogenetic research with other ongoing programs in plant regeneration within the organization. Position is full-time; \$28,000 per year.

The candidate will have outstanding scientific credentials. Minimum requirements include a Ph.D. in plant science with emphasis on plant cytogenetics, four or more years of experience beyond the Ph.D. degree, a working knowledge of *Glycine* species, genetics, and cytogenetics, and a good publication record. Applications, including résumé, reprints, a statement of research goals, and three professional references, and reference to **Job Order Number 914219**, should be sent to: **Ervin McKinley, Kansas Department of Human Resources, 401 Topeka Avenue, Topeka, Kans. 66603.**

ASSISTANTSHIPS

GRADUATE ASSISTANTSHIPS. Available for M.S. candidates in the following disciplines: microbiology, cytology/electron microscopy, botany, physiology, field biology. Stipend is \$4000 to \$4500 per 9 months. For information, contact: **Dr. Nick Norton, Graduate Coordinator, Department of Biological Sciences, Southeastern Louisiana University, Hammond, La. 70402. Telephone: 504-549-2173.**

FELLOWSHIPS

PRE- AND POSTDOCTORAL FELLOWSHIPS; Environmental Pathology Training Grant. Also special programs for M.D. and D.V.M. pathologists; integrated research training in environmental and occupational pathobiology and toxicology. Special emphasis areas: cancer biology, cardiopulmonary, and neuromuscular disease. Evidence of commitment to academic research career important. National Research Service Award; only U.S. citizens and permanent residents eligible. Contact: **Dr. B. T. Mossman, Department of Pathology, University of Vermont College of Medicine, Burlington, Vt. 05405. The University of Vermont is an Equal Opportunity/Affirmative Action Employer.**

TRAINEESHIPS

POSTDOCTORAL TRAINEESHIPS IN BEHAVIORAL NEUROSCIENCES available in multidisciplinary Institute of Neuroscience, starting 1 July 1983. Training faculty and areas of research training are: R. Fernald (neuroethology of vision), R. Lane (neurotransmitter mechanisms of behavior), B. Gordon-Lickey (development of mammalian visual system), M. Gordon-Lickey (physiology of circadian rhythms in *Aplysia*), G. Hoyle (invertebrate neuroethology), D. Kimble (function of hippocampus in mammalian behavior), C. Kimmel (development of neural connections in fish), R. Marrocco (information-processing in monkey visual system), M. Menaker (physiology of neural substrates in vertebrate circadian systems), M. Posner (linking human attention and cognitive processes to neural systems), J. Simmons (neuroethology of echolocation and hearing), G. Streisinger (vertebrate developmental neurogenetics), M. Westerfield (development of synaptic connections in frog spinal cord), J. Weston (development of the neural crest), and M. Woollacott (human motor controls). Send curriculum vitae, copy of publications, and three or more letters of recommendation to: **J. A. Simmons, Institute of Neuroscience, University of Oregon, Eugene, Oregon 97403.**

TRAINING PROGRAMS

PREDOCTORAL AND POSTDOCTORAL TRAINING PROGRAM IN PHOTOSYNTHESIS

Applications and inquiries are invited concerning an interdisciplinary training program dealing with the organization and assembly of the photosynthetic apparatus. This project will involve techniques of genetics, molecular biology, biochemistry, and biophysics as applied to photosynthetic membrane complexes. Appointments at the predoctoral and postdoctoral level will be supported by a grant from the McKnight Foundation to the University of California, Berkeley, and will start after 1 July 1983. For further information on this program, contact: **Dr. Richard Malkin, Program Coordinator, Division of Molecular Plant Biology, 313 Hilgard Hall, University of California, Berkeley, Calif. 94720. The University of California is an Affirmative Action/Equal Opportunity Employer.**

REQUEST FOR PROPOSALS

The Johns Hopkins Center for Alternatives to Animal Testing is soliciting PROPOSALS. These research proposals should provide the fundamental knowledge base to develop alternative methods to whole animals for the safety evaluation of commercial products. Application deadline: 31 August 1983. Application instructions may be obtained by contacting:

**Barbara J. Williams
Secretary to the Director
Center for Alternatives to Animal Testing
615 North Wolfe Street, Room 2306
Baltimore, Maryland 21205-2179**

COLLOQUIUM

THE NEW YORK ACADEMY OF SCIENCES

Colloquium in
BIOLOGICAL SCIENCES
The Roosevelt Hotel, New York City
11 November 1983
Call For Abstracts

This 1-day colloquium will feature ten plenary lectures, two for each of the five disciplines of the Academy's Division of Biological Sciences (biochemistry, biological sciences, biomedical sciences, biophysics, microbiology). In addition, an important aspect will be posters presented by Academy members. Members are invited to submit abstracts for consideration; members may also sponsor abstracts from non-members. Completed abstract forms are due 15 August.

This colloquium will offer a unique opportunity for members of this large and vital division of the Academy to become acquainted with the multifaceted research of their colleagues and to get to know their fellow members in an exciting and challenging environment. The proceedings will be published as a volume of the *Annals*.

For abstract forms and/or program and registration information, write to:

Colloquium in Biological Sciences
The New York Academy of Sciences
2 East 63 Street
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MARKETPLACE

Memo to: RESEARCHERS AND DESIGNERS

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The Parke-Davis Pharmaceutical Research Division of Warner-Lambert, a world leader in pharmaceutical development, has an immediate opening in the Pathology and Experimental Toxicology Department for the following position:

Senior Toxicologist

Requires an outstanding individual with extensive industrial or academic background and training in experimental toxicology with a solid record of publications and achievement. This individual will participate in the designing, conducting and reporting of various animal toxicology and reproduction studies with new drug candidates. The successful candidate must be able to work independently and as a member of a highly specialized team. This position requires a Ph.D. degree or equivalent in a biological science and 3 to 5 years experience in animal or reproductive toxicology. ABT certification is desirable.

Our research facilities, adjoining the University of Michigan campus in Ann Arbor, Michigan, are among the finest and best equipped in the world and are devoted exclusively to the discovery and development of new drugs.

Join the exciting research and development team at Warner-Lambert and enjoy outstanding compensation and environment. Send your resume and salary history/requirements in confidence to: Ms. M. Wolin, Human Resources Representative, Dept. #137-83, WARNER-LAMBERT/PARKE-DAVIS, 2800 Plymouth Road, Ann Arbor, Michigan 48105. An Equal Opportunity Employer M/F/H.

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HOFFMANN-LA ROCHE

ASSISTANT SCIENTISTS

Hoffmann-La Roche, a leader in the field of recombinant DNA research has two opportunities for innovative scientists to join the Synthetic DNA Chemistry and Molecular Cloning sections of the Department of Molecular Genetics.

Asst. Scientist DNA Chemistry & Enzymology

Involves chemical and enzymatic synthesis of genes for expression in microorganisms.

Requires MS or BS degree in organic chemistry/biochemistry or equivalent with experience in DNA enzymology and/or solid-phase synthesis of DNA preferably using phosphotriester or phosphite methodology.

Asst. Scientist Molecular Cloning

Involves molecular cloning characterization and expression of biologically active peptides and proteins.

Assist in troubleshooting experiments in collaboration with other staff.

Requires MS or BS degree or equivalent and experience with nucleic acids and/or recombinant DNA technology and familiarity with current concepts in molecular biology.

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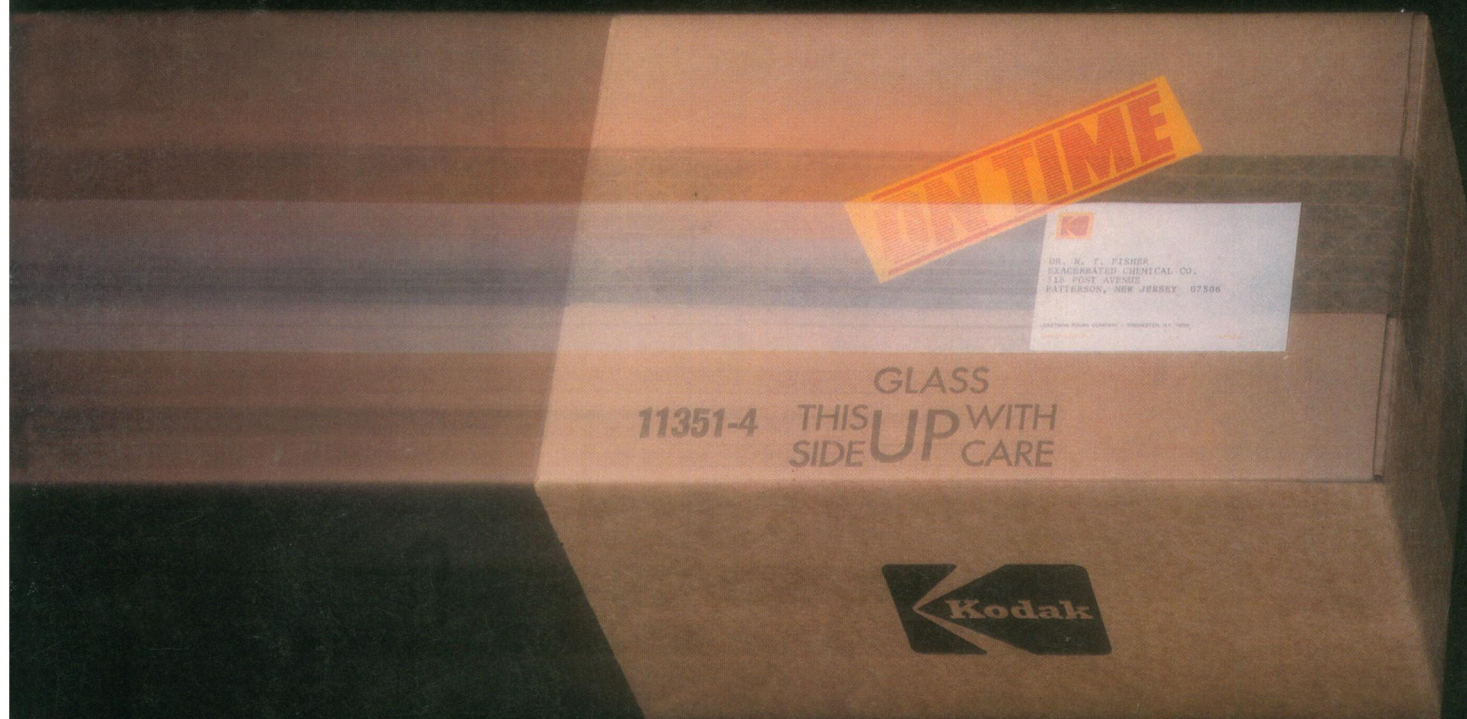


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