

sium volumes, is an ancient preoccupation enjoying a modern reincarnation.

The modern fascination draws upon a number of traditionally distinct academic clades and can be traced through a series of symposia. On the zoological side, colonial-animal paleontologists and systematists came together in 1973 to produce *Animal Colonies* (R. S. Boardman, A. H. Cheetham, and W. A. Oliver, Jr., Eds.; Dowden, Hutchinson, and Ross) and were joined by population biologists to produce the 1979 volume *Biology and Systematics of Colonial Organisms* (G. P. Larwood and B. R. Rosen, Eds.; Academic Press). The botanical path was less tortured, a situation easily attributable to John Harper's monograph *Population Biology of Plants* (Academic Press, 1977). Exponents of the botanical and zoological perspectives, by now having begun to discover each other, came together in 1985 to produce *Population Biology and Evolution of Clonal Organisms* (J. B. C. Jackson, L. W. Buss, and R. E. Cook, Eds.; Yale University Press).

The quickening pace represented by these two new volumes published by the Royal Society testifies to the excitement surrounding the topic and the growing appreciation of its significance. Indeed, the generalizations emerging are of staggering proportions. Modular (or clonal) organisms violate Weismann's doctrine, challenging the traditional biological basis of individuality and clouding the question of the unit (or units) upon which selection acts. Modular organisms escape many of the surface-area-to-volume constraints that govern the structure of unitary organisms and that form the basis for much of our understanding of physiology. Modular organisms are often freed from senescence on time scales recognizable by humans and often display complex life cycles that can occur only in organisms possessing a continuously active totipotent stem cell. The demography of modular organisms cannot be characterized by the age-specific functions that underlie virtually all modern ecological and evolutionary theory, a particularly disturbing fact given that the majority of the surface of the land and the floor of the sea is carpeted by such organisms.

These generalizations, though largely the discoveries of the contributors, are not presented for the first time in these volumes. Rather, the volumes consist of reviews and a series of case studies. The volumes are organized in a curious two-tiered fashion. The larger, hard-bound volume (*The Growth and Form of Modular Organisms*) presents the reviews, and the smaller, paperbound volume highlights selected posters presented at the symposium from which the volumes stem. Yet several narrowly defined case stud-

ies are interspersed with reviews in the large volume, and some studies of general significance are relegated to the small one. In particular, McKinney's demonstration of repeated convergence of architectural styles following mass extinctions and Cheetham's elegant history of macroevolutionary trends within a given branching architecture (which contains perhaps the best evidence for punctuated change to date) certainly merit a seat at the high table.

Though the reviews present little that is genuinely novel, the overall quality is high. Jackson and Coates's contribution reflects the pulse of current investigations in clonal animal ecology, macroevolution, and morphology, exploring new ground in the population genetic consequences of limited sexual dispersal in clonal taxa. Bell presents a taxonomy of branching simulations, which is sure to encourage further study. Gottlieb accurately diagnoses our understanding of the genetics of modular form as rudimentary, highlighting the pitfalls that await future investigations of the quantitative genetics of traits in the absence of any understanding of relevant environmental controls on gene expression. Hardwick focuses on the crucial issue of diplontic selection and its potential for insuring cooperation between cell lineages within a growing plant. Curiously, though, he does not explore the possibility that the very patterns of apical dominance suggested to be agents of diplontic selection might themselves be an adaptive response to competition between variant cell lineages—a view that may provide a powerful perspective on the comparative developmental biology of modular organisms. Particularly welcome is Mackie's reminder of the classical tradition in the study of animal coloniality.

The editors are to be credited for the production of a polished volume, though given the general lack of standardization in terminology an annotated glossary would have been helpful. Also a source of irritation is the failure of botanical authors to cite the relevant zoological literature, and vice versa. In such a field, some redundancy and rediscovery are inevitable, but one would hope not to find it in a symposium devoted to the synthesis of botanical and zoological advances. Moreover, some contributions bear no obvious intellectual connection to the symposium theme; Trinci and Cutter's review of hyphal extension is fascinating, but a *non sequitur* in this book, and several important themes in modular organism research lack representation; there is no treatment of the fundamental similarities in stem cell differentiation in modular organisms, population genetics makes only a brief appearance, and paleobotanical perspectives are absent.

The fundamental distinctions between unitary and modular organisms arise as a consequence of different styles of development, particularly with respect to germ-line determination and secondary somatic differentiation. Ultimately these volumes and the growing research tradition they represent speak to the pervasive influence of development in shaping population structure and evolutionary dynamics. Despite their limitations, the symposium proceedings provide a valuable introduction to the biology of modular organisms and, together with their predecessors, present compelling support for the editors' claim that, for many problems, "the distinction between the biology of modular and unitary organisms is more profound than the classic distinction between animals and plants."

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Books Received

Arithmetic Duality Theorems. J. S. Milne. Academic Press, Orlando, FL, 1986. x, 421. pp. \$38. Perspectives in Mathematics, vol. 1.

Art and Cartography. Six Historical Essays. David Woodward, Ed. Published for the Hermon Dunlap Smith Center for the History of Cartography, Newberry Library, by the University of Chicago Press, Chicago, IL, 1987. xvi, 249 pp., illus. \$65. Kenneth Nebenzahl, Jr., Lectures in the History of Cartography.

Biology of Heritable Skin Diseases. K. D. Wuepper and T. Gedde-Dahl, Jr., Eds. Karger, Basel, 1987. viii, 254 pp., illus. \$162.75. Current Problems in Dermatology, vol. 17. From symposia, Gleneden Beach, OR, Oct. 1985, and Oslo, Norway, Feb. 1986.

The Biology of Moral Systems. Richard D. Alexander. Aldine De Gruyter, New York, 1987. xxii, 301 pp., illus. \$34.95; paper, \$16.95. Foundations of Human Behavior.

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Experimental Approaches to Mammalian Embryonic Development. Janet Rossant and Roger A. Pedersen, Eds. Cambridge University Press, New York, 1987. xiv, 558 pp., illus. \$70.

Experimental Psychopharmacology. Andrew J. Greenshaw and Colin T. Dourish, Eds. Humana, Clifton, NJ, 1987. xiv, 494 pp., illus. \$59.50. Contemporary Neuroscience.

The Federal Republic of Germany. A Land of Top-Ranking Research. Karl-Heinz Preuss and Rolf H. Simon, Eds. Inter Nationes, Bonn, 1986. 114 pp. Paper. Translated from the German.

Fifty Years of Neutron Diffraction. The Advent of Neutron Scattering. G. E. Bacon, Ed. Hilger, Bristol, U.K., 1987 and International Union of Crystallography (U.S. distributor, Taylor and Francis, Philadelphia). xiv, 280 pp., illus. \$66.

Fine Chemicals for the Electronics Industry. P. Bamfield, Ed. Royal Society of Chemistry, London, U.K., 1986. viii, 247 pp., illus. \$48. Special Publication no. 60. From a symposium, Bath, U.K., April 1986.

Karst Hydrogeology. Engineering and Environmental Applications. Barry F. Beck and William L. Wilson, Eds. Florida Sinkhole Research Institute and Balkema, Accord, MA, 1987. viii, 467 pp., illus. \$55. From a conference, Orlando, FL, Feb. 1987.

Laws and Policies Affecting Adolescent Health. John M. Paxman and Ruth Jane Zuckerman. World Health Organization, Geneva, 1987. x, 300 pp. Paper, \$29.40.

(Continued on page 1630)

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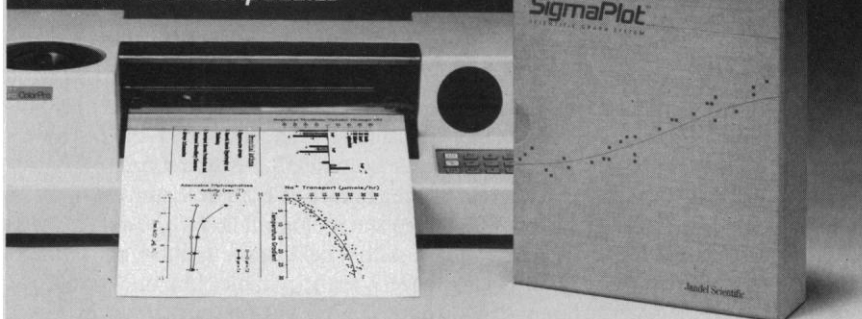
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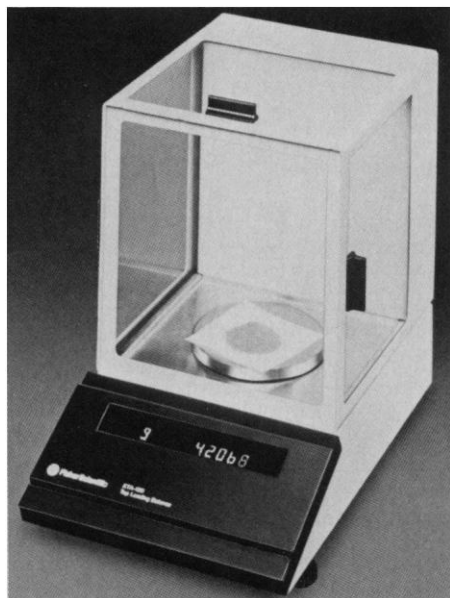
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Stage for Automatic Scanning

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Computer for Harsh Conditions

The RMC-2000 is a rugged IBM AT-compatible computer designed for operation in harsh environments. It withstands altitudes of 3 km above sea level, storage temperatures from -40° to 60°C , operating temperatures from 0° to 50°C , relative humidity between 8 and 95%, and vibration frequencies between 5 and 2000 Hz and is resistant to rain, salt fog, and shock. It has an 80286 microprocessor and a 1.2-megabyte disk drive. Other features include six expansion slots, an RS-232C serial port, and a Centronics parallel printer port. Options include a hard-disk drive, an optical-disk drive, a bubble-memory disk drive, an extra floppy drive, an 80287 coprocessor, and a modem. KMS Advanced Products. Circle 535.

Buffer for Western Transfer

Western Transphor Buffer is a buffer mix for Western transfer weighed and mixed before packaging. The mix can be stored at room temperature. Each package makes 4 liters of buffer with the addition of distilled water and 800 ml of methanol. Final com-

position of the buffer is 0.025M tris, 0.0192M glycine, and 20% methanol, with a pH of 8.3. The mix may also be prepared for use as tank buffer for sodium dodecyl sulfate (SDS). Hoefer Scientific Instruments. Circle 546.

New PS/2 Computer

The Personal System/2 25 is a computer twice as fast as the IBM PC, yet is only 60 to 75% as large. Based on the 8086 microprocessor, the PS/2 25 has 512 kilobytes of random-access memory expandable to 640 kilobytes and a 3.5-inch disk drive. It has a



Multi Color Graphics Array (MCGA); the 12-inch monitor is available either in monochrome or color. Two expansion slots accept most IBM XT cards. The computer comes with either an 84-key or a 101-key keyboard. A collegiate version of the PS/2 25 is also available; it is configured with more memory, two disk drives, a mouse, DOS 3.3, and Microsoft Windows 1.04. IBM. Circle 531.

Literature

Membrane Affinity Chromatography is a 20-page catalog of membrane-affinity chromatography products, with information on chemical properties, application notes, and accessories. MEMTEK. Circle 540.

Products for the Clean Room is a catalog of clothes, gloves, swabs, wipers, static-control products, and other equipment for research environments. Sargent-Welch Scientific. Circle 543.

Today is an eight-page catalog of manual and automatic gamma counters, liquid scintillation analyzers and cocktails, specialized computers and software, and chemicals and supplies for nuclear counting. Packard Instrument. Circle 558.

Diamond Series TLC Plate is a wall poster featuring thin-layer chromatography plates with extra-hard, highly reflective surfaces. Whatman. Circle 559.

(Continued from page 1627)

Mount St. Helens 1980. Botanical Consequences of the Explosive Eruptions. David E. Bilderback, Ed. University of California Press, Berkeley, CA, 1987. viii, 360 pp., illus. \$45. From a symposium, June 1981.

Naturalistic Epistemology. A Symposium of Two Decades. Abner Shimony and Debra Nails, Eds. Reidel, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). vi, 384 pp., illus. \$74. Boston Studies in the Philosophy of Science, vol. 100.

The Nature of Mathematics. Karl J. Smith. 5th ed. Brooks/Cole, Monterey, CA, 1987. xiv, 674 pp., illus. \$33.75.

Neurobiological Issues in Autism. Eric Schopler and Gary B. Mesibov, Eds. Plenum, New York, 1987. xxii, 418 pp., illus. \$49.50. Current Issues in Autism. Based on a conference, Chapel Hill, NC, May 1985.

The New Black Middle Class. Bart Landry. University of California Press, Berkeley, CA, 1987. xii, 250 pp., illus. \$22.50.

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Photochemistry in Microheterogeneous Systems. K. Kalyanasundaram. Academic Press, Orlando, FL, 1987. xii, 388 pp., illus. \$49.95.

A Phylogenetic Fantasy. Overview of the Transference Neuroses. Sigmund Freud. Ilse Grubrich-Simitis, Ed. Belknap (Harvard University Press), Cambridge, MA, 1987. xviii, 113 pp., illus. \$17.50. Translated from the German edition (Frankfurt, 1985) by Axel Hoffer and Peter T. Hoffer.

The Process of Science. Nancy J. Nersessian, Ed. Nijhoff, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). xiv, 221 pp., illus. \$59.50. Science and Philosophy.

Progress in Electroweak Interactions. J. Tran Thanh Van, Ed. Editions Frontières, Gif sur Yvette, 1986. xii, 641 pp., illus. \$60. From a meeting, Les Arcs, France, March 1986.

Protein Engineering. Dale L. Oxender and C. Fred Fox, Eds. Liss, New York, 1987. xviii, 365 pp., illus. \$36. Tutorials in Molecular and Cell Biology.

Public Health and the Environment. The United States Experience. Michael R. Greenberg, Ed. Guilford, New York, 1987. xx, 395 pp. \$35.

The Quality of Life of Cancer Patients. Neil K. Aronson *et al.*, Eds. Raven, New York, 1987. xvi, 304 pp. \$59.50. Monograph Series of the European Organization for Research and Treatment of Cancer, vol. 17.

Quantum Aspects of Molecular Motions in Solids. A. Heidemann *et al.*, Eds. Springer-Verlag, New York, 1987. xii, 221 pp., illus. \$51.50. Springer Proceedings in Physics, vol. 17. From a symposium, Grenoble, France, Sept. 1986.

Radionuclide Tracers. Their Detection and Measurement. M. F. L'Annunziata. Academic Press, Orlando, FL, 1987. xviii, 505 pp., illus. \$96.

Reaction Engineering of Step Growth Polymerization. Santosh K. Gupta and Anil Kumar. Plenum, New York, 1987. xii, 430 pp., illus. \$65. Plenum Chemical Engineering Series.

Reason and Being. B. G. Kuznetsov. Reidel, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). xx, 441 pp. \$89.50. Boston Studies in the Philosophy of Science, vol. 17. Translation from the Russian edition (Moscow, 1972) by Lynn Visson.

Structural Methods in Inorganic Chemistry. E. A. V. Ebsworth, David W. H. Rankin, and Stephen Craddock. Blackwell Scientific, Palo Alto, CA, 1987. xii, 456 pp., illus. \$40.

Structure and Dynamics of Nucleic Acids, Proteins, and Membranes. E. Clementi and S. Chin, Eds. Plenum, New York, 1986. xii, 455 pp., illus. \$79.50. From a symposium, Riva del Garda, Italy, Aug.-Sept. 1986.

Surfactants in Consumer Products. Theory, Technology and Application. J. Falbe, Ed. Springer-Verlag, New York, 1987. xxiv, 547 pp., illus. \$126.50.

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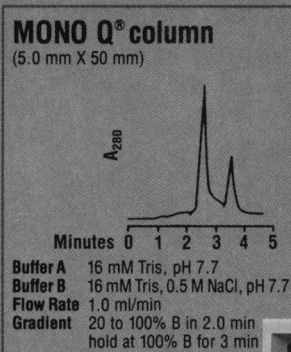
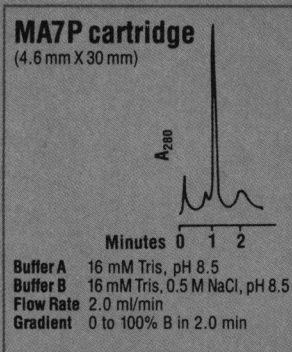
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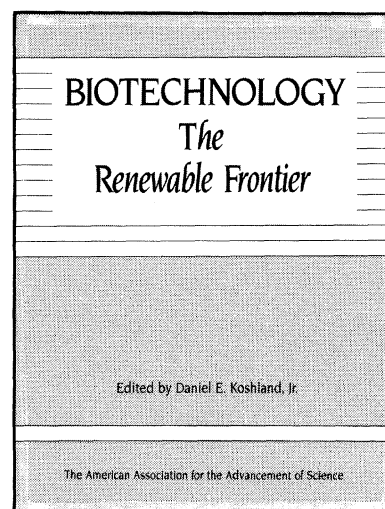
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Editor, *Science*



Discoveries in the modern biology laboratory are of great practical importance in industry today, as they have been in medicine for many years. This volume clearly illustrates the extraordinary cross-disciplinary aspects of modern biology and its tremendous impact on the future. Like its 1984 predecessor, this collection presents the latest and most important topics at the forefront of biological research. Compiled from papers in *Science*, 1985.

Contents

I. New Techniques

In Vitro Mutagenesis
Novel Genomes of Large DNA Viruses
Heterologous Protein Secretion from Yeast
Genetic Linkage Map of the Human X Chromosome
Protein Insertion into & Across Membranes

II. Immunology

Transfectomas to Novel Chimeric Antibodies
Histocompatibility Antigens on Murine Tumors
Factors in Protein Antigenic Structure

III. Developmental Biology and Cancer

Spatially Regulated Expression of Homeotic Genes
in *Drosophila*
Plasticity of the Differentiated State
Oncogenes in the Cytoplasm & Nucleus
Granulocyte-Macrophage Colony-Stimulating Factors
X-Ray Structure of Displatin with DNA
Immunoglobulin Heavy-Chain Enhancer:
Tissue-Specific Factors

IV. Hormones and Metabolism

Atrial Natriuretic Factor
The LDL Receptor Gene
Human von Willebrand Factor

V. Biotechnology

Biotechnology & Food
Drug Biotechnology: The Japanese Challenge

VI. Virology

Nucleotide Sequence of Yellow Fever Virus
Three-Dimensional Structure of Poliovirus

VII. Plant Sciences

Arabidopsis thaliana & Molecular Genetics
Safety & Genetic Engineering in Agriculture

VIII. Behavior and Sensory Phenomena

The Cellular Basis of Hearing
Insect Colony Sociogenesis
Neurotrophic Factors

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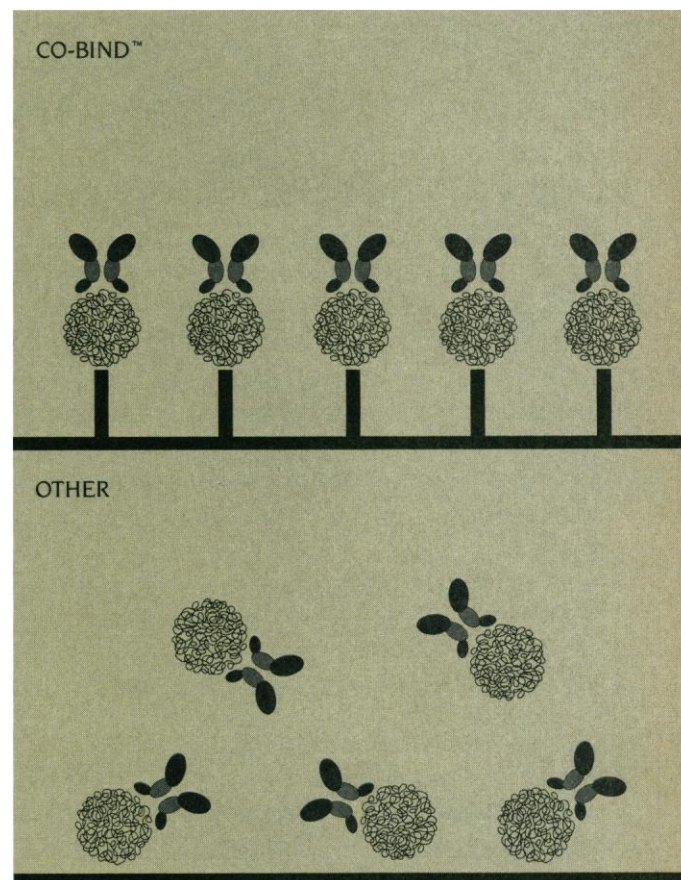
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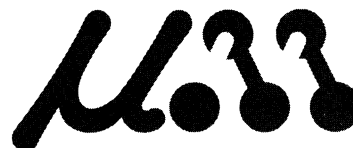
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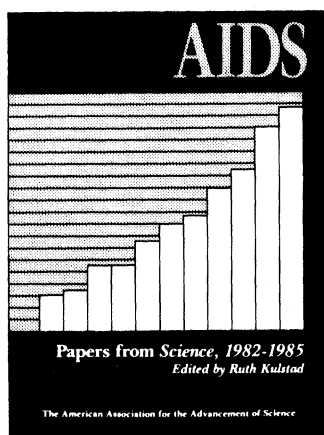
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POSITIONS OPEN

ANIMAL PHYSIOLOGY

The Department of Biology at the University of Utah has an opening for a regular faculty appointment (**ASSISTANT OR ASSOCIATE PROFESSOR**) in animal physiology. An invertebrate (especially insect) physiologist is preferred, but outstanding candidates in vertebrate physiology will also be given serious attention. We are particularly seeking individuals whose research concerns not only physiological mechanisms but also their relevance to contemporary issues in other areas of biology (e.g., animal behavior, development, ecology, evolution). Ours is a large and diverse department with special strength in cellular and molecular biology, ecology and evolutionary biology, and in genetics. Considerable potential exists for productive, interdisciplinary exchange; applicants who will benefit from such opportunity will be especially attractive. The successful applicant will be expected to maintain a vigorous research program and to contribute to student education and training at the undergraduate and graduate levels. Address applications and nominations to:

Dr. Dennis M. Bramble
Animal Physiology Search
Department of Biology
University of Utah
Salt Lake City, UT 84112

Please send résumé and three letters of reference by 15 November 1987.

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

ASSISTANT PROFESSOR UNIVERSITY OF MINNESOTA BIOCOMPUTER SCIENTISTS

Applications are invited for two full-time positions in the National Resource for Stochastic Micropopulation Models at the rank of assistant professor. One position will be responsible for the coordination and continued expansion of neural network models, while the other position will coordinate chronic disease simulation studies and lead modeling efforts in AIDS.

Teaching duties: These positions will be expected to provide advanced teaching of computer science tools for biomedical research. These positions will advise graduate students involved in computer modeling activities and will teach courses in health informatics and biophysical sciences.

Candidates with a Ph.D. in biophysics, biocomputing, biometry, or related fields, and at least 2 years of research experience in simulation of epidemiologic models of populations and disease are encouraged to apply. Programming, knowledge of statistics and epidemiology, productive research experience, and teaching experience are highly desirable. Appointments will be made in the Division of Health Computer Sciences, Department of Laboratory Medicine and Pathology. Please send curriculum vitae, a short description of research interests, and three letters of recommendation to:

Chair, Simulation Search Committee
Department of Laboratory Medicine and Pathology
Box 198 UMHC
University of Minnesota
Minneapolis, MN 55455

The last date for receipt of application is 15 November 1987. *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

Vanderbilt University—Applications are invited for a faculty position in organic chemistry. The appointment will be tenure-track, at the level of **ASSISTANT PROFESSOR** beginning September 1988. Candidates should already have significant research achievements; we are especially interested in chemists showing exceptional promise of developing vigorous, innovative, well-funded research programs. The candidates must also have the desire and ability to be stimulating teachers of undergraduate and graduate students. Applicants should submit transcripts, curriculum vitae, a list of publications, an outline of plans for future research, and at least three letters of recommendation to: **Professor Howard E. Smith, Department of Chemistry, Box 1619-B, Vanderbilt University, Nashville, TN 37235.** Applications should be submitted as soon as possible but will be accepted until the position is filled. *Vanderbilt University is an Equal Employment Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

BRANDEIS UNIVERSITY ASSISTANT PROFESSOR GENETICS AND MOLECULAR BIOLOGY

The Rosenstiel Basic Medical Sciences Research Center and Department of Biology at Brandeis University invites applications for a tenure-track position with an anticipated starting date of September, 1988. Applicants at the assistant professor level are preferred, but exceptional senior candidates may be considered. Candidates should have a Ph.D. and postdoctoral experience in genetics and molecular biology, with a proven record of research accomplishments. We welcome applications from scientists working on problems including gene regulation, chromosome structure, or recombination in lower eukaryotes, mammalian cells or viruses.

Candidates should submit curriculum vitae, including description of current and proposed research. Applicants should arrange for letters of recommendation from three references to be sent to: **Molecular Biology Search Committee, Rosenstiel Center, Brandeis University, Waltham, MA 02254.** Applications should be received no later than 15 October 1987. *Brandeis University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSORS OF MICROBIOLOGY AND IMMUNOLOGY UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

The Department of Microbiology and Immunology, as part of a process of growth and increase in activity, is seeking to fill two positions at the level of assistant professor (tenure track; associate professor candidates will also be considered) in prokaryotic molecular biology, broadly defined. Candidates involved in protein engineering would be particularly welcome. Each individual will be expected to develop a strong independent research program with external funding. Adequate space and start-up funds are available. Participation in teaching and graduate student training is expected.

Applicants should provide the search committee with curriculum vitae, at least three letters of recommendation, and a brief statement of future research interests and plans. The first series of candidates will be considered after 1 November 1987 and applications will be accepted until the positions are filled. Starting dates can be September 1988 or thereafter.

Send applications to: **Drs. A. M. Chakrabarty, Philip Matsumura, Simon Silver, and Karl Volz, Prokaryote Molecular Biology Search Committee, Department of Microbiology and Immunology, University of Illinois College of Medicine at Chicago, P.O. Box 6998, Chicago, IL 60680.**

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

ASSISTANT PROFESSOR OF PHYSIOLOGY

Applications are invited for a position in the Department of Environmental Science and Physiology from individuals with research experience in respiratory physiology. A variety of backgrounds is appropriate since respiratory function may be assessed at the molecular, cellular, or organ level. Teaching ability is required. *Expressions of interest are particularly invited from women and minority candidates.*

Please send curriculum vitae and the names of three references to:

Chairman
Search Committee for
Assistant Professor of Physiology
Respiratory Biology Program
Harvard School of Public Health
665 Huntington Avenue
Boston, MA 02115

ASSISTANT OR ASSOCIATE PROFESSOR IN THE RESEARCH ASSOCIATE TRACK to assume major scientific and administrative responsibility in a cellular electrophysiology laboratory studying arrhythmogenesis and the actions of antiarrhythmic drugs. Experience in single-cell work, voltage clamping, ion sensitive microelectrodes, and computer programming preferable. Excellent scientific environment. Renewable term appointment with full fringe benefits. Immediate availability. Please send curriculum vitae, representative reprints, and names of three references to: **Morton F. Arnsdorf, M.D., Chief, Section of Cardiology, University of Chicago Hospitals, Box 423, 5841 South Maryland, Chicago, IL 60637.**

POSITIONS OPEN

ASSISTANT PROFESSOR OF BIOLOGY. The Department of Biology at the University of Dayton invites applications for a tenure-track position at the level of assistant professor. Teaching responsibilities include directing and teaching courses for nonmajors. The successful candidate will be expected to actively conduct scholarship efforts in course/program development for the nonmajor, or in a research area which complements others within the Department. Candidates must have a Ph.D. in a life science area and demonstrated teaching ability. Starting date is August 1988. Applicants must provide curriculum vitae, concise statement of teaching and research (scholarship) goals, recent reprints, and have three letters of recommendation sent to: **Dr. Mary Jo Vesper, Biology Department, University of Dayton, Dayton, OH 45469, by 2 November 1987.** *Equal Employment Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR OF MOLECULAR BIOLOGY CASE WESTERN RESERVE UNIVERSITY DEPARTMENT OF MOLECULAR BIOLOGY AND MICROBIOLOGY

Applications are invited for the position of Assistant Professor of Molecular Biology (tenure track). We are looking for candidates with strong training records and interesting, original research plans. We offer a highly interactive research atmosphere in a well-equipped, expanding department, with recently remodeled space. Cleveland offers pleasant neighborhoods with affordable housing close to the university and easy access to outstanding cultural institutions. An information packet describing the department, the school, and the community can be obtained by writing to us or by calling 216-368-3420. Please submit curriculum vitae that includes a summary of research plans and the names of at least three people willing to provide letters of recommendation to: **Charles Miller, Search Committee Chairman, Department of Molecular Biology and Microbiology, School of Medicine, Case Western Reserve University, Cleveland, OH 44106.** *An Equal Opportunity Affirmative Action Employer.*

The University of Hawaii seeks applicants for a tenure-track, 11-month position in nutritional sciences at the **ASSISTANT OR ASSOCIATE LEVEL. RESEARCH** emphasis in mineral metabolism, nutritional status, or related topics. Minimum qualifications are Ph.D. in nutritional sciences or related field; experience with AA spectrometry, HPLC, radioisotopes, ability to conduct independent research, publish, and teach. Associate, same qualifications plus 4 years of experience at assistant level, ability to serve on graduate faculty. Annual salary range: Assistant \$26,592 to \$39,360; Associate \$33,648 to \$49,812. Starting 1 January 1988. Closing date 30 November 1987 or until qualified applicant is selected. Submit letter of application, curriculum vitae, transcripts of academic graduate, undergraduate work, three letters of reference, copies of two to three publications to: **N. E. Johnson, Department of Food Science & Human Nutrition, University of Hawaii-Manoa, 1800 East-West Road, Honolulu, HI 96822.** *Affirmative Action/Equal Opportunity Employer.*

FRED HUTCHINSON CANCER RESEARCH CENTER DIVISION OF CLINICAL RESEARCH ASSOCIATE DIRECTOR

The Fred Hutchinson Cancer Research Center seeks candidates for the position of associate director, Division of Clinical Research. This position entails scientific and administrative responsibility for one of the three scientific divisions of this comprehensive cancer center. Candidates should have a record of excellence in clinical research, administrative experience, and clinical training and skills to direct a major scientific activity. Training and background, as well as research accomplishments in medical oncology, or other clinical fields with emphasis on research into the diagnosis, treatment, and aftercare of individuals with cancer, are essential. Expected rank of appointment is full member (full professor). Salary and terms and conditions of the appointment are negotiable.

Please send résumé, letter of interest in position, and supporting documentation including names of references to: **Dr. Robert W. Day, Chair, Search Committee, Fred Hutchinson Cancer Research Center, 1124 Columbia Street, Seattle, WA 98104. Telephone: 206-467-4302.**

Deadline for application is 31 December 1987. *The Fred Hutchinson Cancer Research Center is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT RESEARCH NUTRITIONIST OR PHYSICAL ANTHROPOLOGIST—This is an academic position in the Koret Center for Human Nutrition, Department of Pediatrics, University of California, San Francisco, UCSF, available immediately. Two years of postdoctoral experience, computer and writing skills (publications) are required. Investigator will be responsible for a research program for determination of body composition and energy metabolism in infants and mothers. He/she will work independently and creatively to establish new methods, analyze data, produce reports and manuscripts. Closing date—1 November 1987. *UCSF is an Equal Opportunity/Affirmative Action Employer.* **Dr. Norman Kretschmer, Department of Pediatrics, UCSF, 1001 Potrero Avenue, San Francisco, CA 94110.**

ASSISTANT OR ASSOCIATE SPECIALIST (S-3/4), Department of Agricultural Biochemistry, University of Hawaii, nontenure track, to begin 1 December 1987. Duties: Coordinate pesticide registration activities; develop field protocols; prepare SLN and tolerance petitions; coordinate registration database activities; conduct in-service training; supervise field and database technicians. Minimum qualifications for assistant: M.S. and one full year of graduate studies beyond M.S. and at least 3 years of experience at next lower rank or equivalent. Desirable for assistant: Experience in extension or agriculture-related work; considerable knowledge of registration process; supervisory experience; demonstrated ability to communicate with producers, regulatory, and college personnel; understanding of principles of crop protection and of crops grown in Hawaii; knowledge of computer applications to project management, probability analysis and dissemination of information; some familiarity with NPIRS and related databases. Minimum salary for assistant: \$27,996. Minimum qualifications for associate: Ph.D. in chemistry, biochemistry, entomology, plant pathology, weed science, or allied biological science required and at least 4 years of experience at next lower rank or equivalent. Desirable for associate: Same as assistant. Minimum salary for associate: \$35,424. Send curriculum vitae and three letters of reference to: **Dr. Barry M. Brennan, Chairperson, Department of Agricultural Biochemistry, 1800 East-West Road, University of Hawaii, Honolulu, HI 96822.** Closing date: 15 October 1987. *An Equal Opportunity Employer.*

UNIVERSITY OF ARIZONA COLLEGE OF AGRICULTURE

Applicants being sought for position of **ASSOCIATE DEAN FOR RESEARCH AND ASSOCIATE DIRECTOR** of the Arizona Agricultural Experiment Station. Responsibilities include assisting the Dean and Director with development and administration of all station activities. An earned doctorate in agricultural or related sciences; professorial level of attainment; demonstrated achievement in agricultural research, leadership ability, ability to administer research programs; and an understanding of the land grant agricultural system are necessary qualifications. Applications or nominations directed to: **Dr. L. W. Dewhurst, Vice Dean and Acting Associate Director, 306 Forbes, College of Agriculture, University of Arizona, Tucson, AZ 85721.** Telephone: 602-621-3859. The position is open until 30 November 1987 or until a suitable candidate is identified. *Equal Employment Opportunity/Affirmative Action Employer.*

ASSOCIATE MEMBER

The Fox Chase Cancer Center invites applications from Ph.D. individuals with comprehensive experience in the field of tumor immunology for a key position in the center's Department of Surgical Oncology. This individual will coordinate the laboratory research activities for the Department and will be responsible for developing independent research projects within the Department.

Qualified candidates should possess a minimum of 5 years of related postdoctoral experience, as well as a proven track record of independent funded research. Send curriculum vitae, three letters of recommendation, and list of publications to:

**Director of Personnel
FOX CHASE CANCER CENTER
7701 Burholme Avenue
Philadelphia, PA 19111
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POSITIONS OPEN

ASSOCIATE OR FULL PROFESSOR

The Department of Pharmacology of Case Western Reserve University has available a senior faculty position for a scientist with an outstanding research program in an exciting aspect of molecular/cellular pharmacology. The specific research area is flexible. Applications/nominations along with curriculum vitae, a statement of research interests and the names of three referees should be sent to: **Dr. Leslie T. Webster, Jr., Department of Pharmacology, School of Medicine, Case Western Reserve University, Cleveland, OH 44106.** Telephone: 216-368-3394. *An Equal Opportunity/Affirmative Action Employer. Minorities and women are encouraged to apply.*

BIOCHEMIST

The Department of Biology, The University of Alabama, invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level to begin August 1988. Postdoctoral experience is required and the successful candidate will be expected to develop an active funded research program, supervise graduate students, and participate in departmental teaching programs. Area of research specialization open. Mutual interaction will be encouraged with other biochemistry faculty whose interests include membrane biochemistry, protein and nucleic acid structure and function analysis, and gene regulation in both prokaryotic and eukaryotic systems. Salary will be competitive and generous start-up money is available. Applicants should submit curriculum vitae, statement of research interests, and three letters of reference by 1 November 1987 to: **Dr. John K. Hardman, Department of Biology, The University of Alabama, Tuscaloosa, AL 35487.** *The University is an Equal Opportunity Employer.*

Biological Chemistry—University of Utah. Applications are invited for a **TENURE-TRACK POSITION IN BIOLOGICAL CHEMISTRY**. The candidates are expected to have the background, ability, and motivation to develop vigorous research programs and to be excellent teachers. Applications from both junior-level and established scientists with outstanding records of achievement will be considered. We are especially interested in individuals with a strong chemical background and interests in the general areas of mechanisms of biological reactions, macromolecular structure and function, biosynthesis, or regulation of biological processes. Please send detailed curriculum vitae and a statement of research interests to: **Search Committee, Department of Chemistry, University of Utah, Salt Lake City, UT 84112.** Junior candidates should arrange for three letters of recommendation to be sent directly to the department. The deadline for receipt of applications is 31 October 1987 or until a suitable candidate is identified. *The University of Utah is an Equal Opportunity/Affirmative Action Employer.*

BIOLOGY, ASSISTANT PROFESSOR/ASSOCIATE PROFESSOR. Tenure-track, to begin August 1988, in developmental genetics, neurobiology, and some introductory level biology. Research to complement teaching duties. Preference given to applicants with teaching experience, also to those with background in comparative anatomy. Ph.D. required; salary competitive. Opportunities for collaborative research with nearby universities and laboratories. Send request for application with detailed curriculum vitae and statement of career goals to: **Dr. Dorothy F. Chappell, Chair, Department of Biology, Wheaton College, Wheaton, IL 60187.** Closing date for application, 15 November 1987. Wheaton is a college in the broad evangelical tradition, located in the western suburbs of Chicago, with a biology department of seven members. *It complies with federal guidelines for nondiscrimination.*

CELL BIOLOGIST. Department of Cell Biology and Anatomy of the Johns Hopkins Medical School has an opening for a faculty member with an active research program on molecular aspects of any interesting cellular, developmental, or physiological process. Faculty rank will be determined by experience. Teaching in cell biology or histology. Submit applications with curriculum vitae, summary of research interests, and names of references to: **Cell Biology Search, Department of Cell Biology and Anatomy, Johns Hopkins Medical School, 725 North Wolfe Street, Baltimore, MD 21205.**

POSITIONS OPEN

Indiana University, Bloomington—**BIOCHEMISTRY.** The Department of Chemistry at Indiana University, Bloomington, invites applications from biochemists for anticipated **TENURE-TRACK FACULTY POSITIONS** at the junior and senior level. The department is seeking the strongest individuals it can find, preferably with interests in structure-function relationships of proteins, enzyme reaction mechanisms, transmembrane signaling with hormones or neurotransmitters, membrane structure and assembly, protein-nucleic acid interactions, or physical biochemistry. Applicants at the senior faculty level must have achieved a position of leadership in their field of research while applicants at the assistant professor level must show exceptional promise of establishing a vigorous independent research program in an academic setting. To apply, submit curriculum vitae, publication list, names of references, and a short résumé of ideas for the development of research programs. Candidates at the junior level should arrange to have three letters of recommendation forwarded as well. Deadline for applications is 1 December 1987. Please apply to:

**Professor V. J. Shiner, Jr.
Department of Chemistry
Indiana University
Bloomington, IN 47405**

Indiana University is an Equal Opportunity/Affirmative Action Employer.

The University of Miami School of Medicine is seeking a nationally recognized scholar to fill the position of **CHAIRMAN OF THE DEPARTMENT OF PEDIATRICS** in anticipation of Dr. William Cleveland's retirement in June 1988. The individual should be committed to creating a scholarly environment that stimulates superior teaching, research, and patient care.

The Department of Pediatrics at the University of Miami School of Medicine is a large and complex organization with 120 faculty, 50 house officers, 380 staff members, and a multimillion dollar budget. There are two major aspects of its operation, one related to academic affairs and the other to the provision of patient services both in the Jackson Memorial Hospital and in the private practice of the faculty.

Reply with curriculum vitae to: **Azorides R. Morales, M.D., Department of Pathology (D-33), Chairman, Search Committee, University of Miami, P.O. Box 016960, Miami, FL 33101.** *The University of Miami is an Equal Opportunity/Affirmative Action Employer.*

Michigan: **CLINICAL IMMUNOLOGIST.** Progressive laboratory in 460-bed teaching hospital seeking clinical immunologist, Ph.D. degree preferred, to direct section of Immunology in conjunction with pathologists; expected to provide professional direction in current standards of clinical laboratory immunology, with components of teaching, research, and management. Contact: **B. Silberberg, M.D., Director of Laboratories, Providence Hospital, 16001 West Nine Mile Road, P.O. Box 2043, Southfield, MI 48037.**

CLINICAL IMMUNOLOGIST (Microbiologist, GS-403-13; \$38,727.00 per annum). The Laboratory Research Branch of the Gillis W. Long Hansen's Disease Center announces a permanent position to join an active group of immunologists. Applicants must meet the following selective placement factors—Knowledge and ability to examine, diagnose, and classify human leprosy or its absence clinically. Ability to independently plan, design, and conduct experiments utilizing a variety of immunologic techniques. Ability to independently review literature and organize, analyze, and present experimental findings in a format acceptable for publication in scientific journals or presentation at scientific meetings. Ability to independently review literature, propose testable, relevant hypotheses, and to design appropriate experiments to test these hypotheses in a systematic manner. At least 6 months of experience in laboratory investigations, publications and experience as an independent investigator in Hansen's disease immunology is preferred.

To apply, applicants MUST submit an SF-171, Application for Federal Employment. Please attach a concise statement of research goals, and recent reprints. For additional information and forms, contact the **Personnel Office 504-642-7771—G. W. L. Hansen's Disease Center, Carville, LA 70721.** All forms must be received by the Personnel Office by close of business 9 October 1987. *An Equal Opportunity Employer.*

POSITIONS OPEN

UNIVERSITY OF OTAGO DUNEDIN, NEW ZEALAND CHAIR IN ZOOLOGY

Applications are invited for appointment to a chair in the Department of Zoology. Applicants should have a substantial research record in any area or areas of zoology. Fields of current research in the Department include marine biology, limnology, comparative physiology and neurobiology, parasitology, vertebrate biology, and behavioral ecology.

Salary: Professorial salaries are paid within a range between \$NZ68,000 to \$NZ85,000 per annum.

Intending applicants can obtain information, including a description of the department, from the Registrar, University of Otago, P.O. Box 56, Dunedin, New Zealand.

Applications quoting reference number A87/49 close in Dunedin on 30 November 1987. D. W. Girvan, Registrar.

COMPARATIVE PHYSIOLOGIST/ ORGANISM BIOLOGIST

The Department of Biology, University of Pennsylvania, invites applications for a faculty position at the assistant or associate professor level. We seek a candidate using physiological, biochemical, or molecular approaches to answer questions concerning the function of whole organisms, whether plant, animal, or microbe. Preference will be given to individuals with comparative, evolutionary, or ecological perspectives who can interact broadly within a biology department. Send curriculum vitae, including a statement of research interests, and three letters of recommendation to: Dr. Arthur Dunham, Chairman, Physiologist Search Committee, Department of Biology, University of Pennsylvania, Philadelphia, PA 19104-6018. Closing date for receipt of applications is 1 December 1987.

EVOLUTIONARY BIOLOGIST

The Department of Biology, University of Pennsylvania, invites applications for a faculty position at the assistant professor level. We seek a candidate in any area of evolutionary biology, including mechanisms of speciation and phyletic change, biochemical and molecular evolution, and population, ecological, or behavioral genetics, who will interact primarily with ecologists and evolutionary biologists within the department and at the Academy of Natural Sciences of Philadelphia. Send curriculum vitae, including a statement of research interests, and three letters of recommendation to: Dr. Robert E. Ricklefs, Chairman, Evolutionist Search Committee, Department of Biology, University of Pennsylvania, Philadelphia, PA 19104-6018. Closing date for receipt of applications is 1 December 1987.

EXECUTIVE DIRECTOR. The Marie Selby Botanical Gardens, Sarasota, Florida, seeks qualified applicants capable of developing and managing a subtropical botanical garden specializing in epiphytes with programs of research, education, and display. Financial experience is required to direct million dollar budget. Ability to lead fund-raising efforts is essential. Available 1 September 1988. Send résumé or inquiry to: Mr. William Lambrecht, Chairman, 1550 Ringling Boulevard, Sarasota, FL 34236.

FACULTY POSITIONS

The Department of Biochemistry, Molecular Biology and Cell Biology at Northwestern University intends to make several new appointments at the assistant/associate professor level. We are particularly interested in candidates in the areas of:

Macromolecular structure with emphasis on crystallography or NMR approaches;

Developmental/molecular genetics of complex systems including neurobiology;

Cell biology in areas of cell growth, receptors, and dynamics of cell structure.

Exceptional qualified applicants in other areas will also be considered. Candidates should submit curriculum vitae, a list of publications, copies of reprints and preprints, a statement of research objectives, and three letters of recommendation, solicited by the applicant, to: Faculty Search Chairman, Department of Biochemistry, Molecular Biology and Cell Biology, Northwestern University, 2153 Sheridan Road, Evanston, IL 60208. Northwestern University is an Equal Opportunity/Affirmative Action Employer.

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Director

The Board of Trustees of the Royal Botanic Gardens, Kew wishes to appoint a Director to succeed Professor Arthur Bell who will retire in June 1988.

The Director will be responsible for all aspects of the work at Kew and at the satellite garden at Wakehurst Place, Sussex. The Director's primary responsibility will be in the furtherance of scientific research. At present, taxonomic and morphological studies are carried out in the Herbarium, while anatomical, biochemical, cytological and physiological research is conducted in the Jodrell Laboratory. The preserved materials and the unique collection of living plants provide exceptional opportunities for such research.

Candidates should have a distinguished record of scientific attainment and the administrative experience required to lead a large science-orientated organisation. The successful applicant will be expected to maintain contact with similar institutions throughout the world and with universities and research stations in the broad field of plant sciences.

Salary (under review) £34,000-£57,000 according to qualifications and experience.

RELOCATION ASSISTANCE UP TO £10,000 MAY BE AVAILABLE.

For further details and an application form (to be returned by 30 October 1987) write to Civil Service Commission, Alencon Link, Basingstoke, Hants RG21 1JB, or telephone Basingstoke (0256) 468551 (answering service operates outside office hours) or telex 859399 CSCOMM G.

Please quote ref: S/7320.

An equal opportunity employer

POSITIONS OPEN

EXTRACELLULAR MATRIX BIOLOGY POSTDOCTORAL POSITIONS. 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 Ph.D. or equivalent. Immunocytochemistry, TEM, cell culture, and/or computer reconstruction techniques desirable. Send curriculum vitae and three references to: **Dr. David E. Birk, Department of Pathology, University of Medicine and Dentistry of New Jersey—Robert Wood Johnson Medical School, 675 Hoes Lane, Piscataway, NJ 08854-5635. Equal Opportunity/Affirmative Action Employer M/F/H/V.**

FACULTY POSITION IN ANALYTICAL CHEMISTRY AT IOWA STATE UNIVERSITY

Applications are invited for this position which will become available 1 July 1988. All research areas in analytical chemistry will receive consideration. The appointment probably will be at the level of assistant professor; however, applications at all levels will be considered. Candidates with outstanding potential for, and commitment to, excellence in both research and teaching are sought to join a faculty with a strong tradition of research in analytical chemistry. Candidates with appropriate research interests will also be considered for a joint appointment in the Ames Laboratory—USDOE. Applicants should submit curriculum vitae, transcripts, a documented summary of past accomplishments, and an explicit statement of research plans and teaching objectives to: **Analytical Search Committee, c/o Professor D. K. Hoffman, Chairman, Chemistry Department, Iowa State University, Ames, IA 50011.** Junior applicants also should arrange for at least three letters of recommendation to be sent. Evaluation of applications will begin in November 1987. *Women and minority applicants are encouraged to apply. Iowa State University is an Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION IN INORGANIC CHEMISTRY AT IOWA STATE UNIVERSITY

Applications and nominations of candidates are invited for a faculty position available 1 July 1988. Candidates in any specialty within inorganic chemistry will be considered. Any appointment probably will be made at the level of assistant professor, although an advanced-level appointment might be possible for an outstanding person with suitable experience and credentials. The position requires demonstrated aptitude for creative research and for teaching, and a commitment to excel in both. Applications should be directed to: **Inorganic Search Committee, c/o Professor D. K. Hoffman, Chairman, Department of Chemistry, Iowa State University, Ames, IA 50011.** Applicants should submit curriculum vitae, transcripts, and an outline of their research plans during the initial stages of their independent scientific careers. Applicants for assistant professor should arrange for three references to send letters directly to Professor Hoffman. Screening of applications will begin in November 1987. *Women and minority applicants are encouraged to apply. Iowa State University is an Affirmative Action/Equal Opportunity Employer.*

TWO FACULTY POSITIONS IN MOLECULAR BIOLOGY UNIVERSITY OF FLORIDA COLLEGE OF MEDICINE

The Department of Biochemistry and Molecular Biology at the University of Florida invites applications for two tenure-track positions in eukaryotic molecular biology at the assistant, associate or full professor level (1 June 1988 starting date). The applicants should have 2 years of postdoctoral training, demonstrated expertise in molecular biology, and a strong commitment to graduate research and education. Applicants should send curriculum vitae, a proposed research statement, and arrange for receipt of three letters of recommendation by the 1 December 1987 closing date. Address all correspondence to: **Search Committee Chairman, Department of Biochemistry and Molecular Biology, Box J-245, Health Science Center, University of Florida, Gainesville, FL 32610. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

DEPARTMENT OF BIOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY FACULTY POSITIONS IN BIOCHEMISTRY AND MICROBIOLOGY

Candidates are sought for two tenure-track positions at the level of assistant professor, one in biochemistry and one in microbiology. Conduct of an active research program and participation in the teaching program of the department will be expected.

In biochemistry we are interested in applicants with research experience in one of the following areas: macromolecular structure; mechanism of enzyme action; the biochemistry of proteins, nucleic acids or membranes.

In microbiology we are interested in a very wide range of research including, but not limited to, microbial differentiation, plant-bacterial interactions, pathogenesis, medical microbiology.

Applicants should send curriculum vitae, a summary of their proposed research program, and the names of at least three scientists who can provide an evaluation of the candidate's past accomplishments and future potential. We also ask that you arrange to have one letter of reference sent directly to the chairman of the appropriate search committee. Applicants and letters should be sent to:

**Chairman, Biochemistry Search Committee
or**

**Chairman, Microbiology Search Committee
c/o Room 56-511, Department of Biology
Massachusetts Institute of Technology
Cambridge, MA 02139**

An Equal Opportunity Employer

FACULTY POSITION IN MOLECULAR VIROLOGY. The Department of Immunology/Microbiology at Rush Medical College invites applications for a faculty position in molecular virology. An applicant with ongoing retrovirus research program will be considered highly. The college is part of a large teaching hospital/medical center. The department includes an active virology research group concentrating on hepatitis B virus and negative strand RNA viruses, and an AIDS patient care and active research group. Salary and academic rank will be dependent upon experience and qualifications. Please send résumé with a description of research interests and three letters of recommendation, by 1 November 1987 to:

**Henry Gewurz, M.D.
Professor and Chairman
Department of Immunology/Microbiology
Rush Medical College
1653 West Congress Parkway
Chicago, IL 60612**

Rush is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION IN PHYSICAL CHEMISTRY AT IOWA STATE UNIVERSITY

Applications and nominations of candidates are invited for a faculty position available 1 July 1988. Candidates in any specialty within physical chemistry will be considered. Any appointment probably will be made at the level of assistant professor, although an advanced-level appointment might be possible for an outstanding person with suitable experience and credentials. The position requires demonstrated aptitude for creative research and for teaching, and a commitment to excel in both. Applications should be directed to: **Physical Chemistry Search Committee, c/o Professor D. K. Hoffman, Chairman, Department of Chemistry, Iowa State University, Ames, IA 50011.** Applicants should submit curriculum vitae, transcripts, and an outline of their research plans during the initial stages of their independent scientific careers. Applicants for assistant professor should arrange for three references to send letters directly to Professor Hoffman. Screening of applications will begin in November 1987. *Women and minority applicants are encouraged to apply. Iowa State University is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

FACULTY POSITION IN ORGANIC CHEMISTRY AT IOWA STATE UNIVERSITY

Applications are invited for this position which will become available 1 July 1988. All research areas in organic chemistry will receive consideration. The appointment probably will be at the assistant professor level; however, applications at all levels will be considered. Candidates with outstanding potential and commitment to excellence in both research and teaching are sought to join a faculty with a strong tradition of research in organic chemistry. Junior candidates in bioorganic chemistry, natural products synthesis or related areas with a biological emphasis will be considered for appointment as the Caldwell Fellow. In addition to normal set-up costs, the Caldwell Fellow will receive a \$40,000 per year unrestricted research stipend for three years. Applicants should submit curriculum vitae, transcripts, a list of publications, and a detailed statement of research plans and teaching objectives to: **Organic Search Committee, c/o Professor D. K. Hoffman, Chemistry Department, Iowa State University, Ames, IA 50011.** Junior applicants also should arrange for at least three letters of recommendation to be sent. Evaluation of applications will begin in October 1987. *Women and minority applicants are encouraged to apply. Iowa State University is an Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITIONS DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY THE UNIVERSITY OF CHICAGO

The Department of Biochemistry and Molecular Biology at The University of Chicago wishes to invite applications and nominations for several tenure-track or tenured faculty positions to be filled within the next few years. It is hoped that at least two positions will be filled in the 1987-1988 academic year. Candidates should have a doctoral degree, significant postdoctoral research experience, a strong record of research accomplishment, and demonstrable potential for the development of an independent research career in an academic setting. We are seeking outstanding individuals with research interests in any area of modern biochemistry and molecular biology, including nucleic acid biochemistry, protein-nucleic acid interactions, DNA replication and transcription, membrane and cell biochemistry, molecular endocrinology, transmembrane signaling, physical biochemistry, structural biology, and molecular structure and dynamics. Applications should include curriculum vitae, a list of publications, a summary of current research activities and future research plans, and the names of at least four individuals from whom letters of reference may be solicited. While we have no formal deadline, we would appreciate receiving applications by 15 November 1987. Please send applications or nominations to:

**Howard S. Tager
Department of Biochemistry and Molecular Biology
The University of Chicago
920 East 58th Street
Chicago, IL 60637**

The University of Chicago is an Equal Opportunity Employer.

WORCESTER POLYTECHNIC INSTITUTE TWO FACULTY POSITIONS FALL 1988

The Department of Chemistry seeks to fill two tenure-track positions. One of these appointments may be at a senior level. Applications are invited from candidates in the following areas: **Physical Chemistry**—all areas of expertise will be considered, but preference will be given to candidates specializing in laser spectroscopy and photophysical chemistry; **Biochemistry/Chemistry**—preference will be given to candidates in an area at the interface between biochemistry and one of the more traditional areas of chemistry. Applicants for either position should have a Ph.D. degree, a strong experimental program, and a vigorous interest in undergraduate and graduate education. To apply, submit complete résumé, including research plans and teaching interests, and three letters of recommendation to: **Dr. James W. Pavlik, Department of Chemistry, Worcester Polytechnic Institute, Worcester, MA 01609. WPI is an Affirmative Action/Equal Opportunity Employer.**

**ASSOCIATE DEAN AND DIRECTOR OF RESEARCH
SCHOOL OF AGRICULTURE AND LIFE SCIENCES
NORTH CAROLINA STATE UNIVERSITY**

North Carolina State University invites nominations and applications for the position of Associate Dean and Director of the North Carolina Agricultural Research Service, School of Agriculture and Life Sciences. The School has 21 departments, 590 faculty and an enrollment of approximately 260 Agricultural Institute students, 2,500 undergraduate students and 740 graduate students.

The Associate Dean and Director of Research is responsible to the Dean of the School of Agriculture and Life Sciences for leadership in the administration, supervision, coordination, development and evaluation of the research programs for the School. These responsibilities include working with faculty members, department heads, other administrators and industry clientele to provide high quality, productive research programs. Responsibilities of the office involve cooperation with other administrative personnel in formulation of budget proposals; allocation of budgeted funds; judging the quality of broad-ranging research activities; and the employment, assessment and promotion of faculty. The individual in this position functions as a member of an administrative team with the Dean and the Associate Deans of Academic Affairs and Extension.

Candidates should have the Ph.D. and demonstrated ability in research and administration. Applicants must have the capacity and desire to work with people. They must also possess an understanding of, and appreciation for, agricultural, biological and social science research endeavors.

Closing date for nominations and applications is November 16, 1987; the date of availability is negotiable. Complete applications will include a letter of interest, a current curriculum vitae, names of four references and a brief statement of the candidate's philosophy of research administration.

Nominations, inquiries and applications should be addressed to:

Dr. James L. Oblinger
Chairman of the Search Committee
School of Agriculture and Life Sciences
North Carolina State University
Box 7601
Raleigh, NC 27695-7601
919/737-2614

*North Carolina State University is an
equal opportunity affirmative action employer*

**HEAD OF BIOSTATISTICAL UNIT
ARIZONA CANCER CENTER**

Increased expansion has led to the creation of a new senior level position to oversee and coordinate biostatistical resources related to cancer clinical trials and related laboratory programs. Will have primary responsibility for Biometry Cores of both NCI and State Cancer Center Grants and three established Program Projects (Cytogenetics, Medical Oncology, and Hyperthermia).

A new junior faculty level position is also available for immediate recruitment. Both software and hardware computer support is extensive and housed in a new Cancer Center building. Extensive professional collaborations are possible including the opportunity to interact with active Epidemiology and Prevention and Control Programs.

Requirements include formal training in statistics, biostatistics, experience with clinical trials, and good management and "people" skills. Biomathematical or modeling expertise useful.

The University of Arizona is a dynamic educational institution with substantial commitment to research. Tucson is a growing professionally-oriented moderate-sized city with surprising cultural and educational opportunities.

Interested applicants should provide a letter of interest, complete curriculum vitae and names, addresses and phone numbers of at least three references to:

Frank L. Meyskens, Jr., M.D.
Chairman of Biostatistical Recruitment
Arizona Cancer Center, Room 3945
University of Arizona
Tucson, AZ 85724

The Committee will begin to screen applications on October 15, 1987 with a closing date of November 30, 1987 or until position is filled.

The University of Arizona is an affirmative action equal opportunity employer.

Immunology Associates

The Upjohn Company, a world leader in the research and development of pharmaceuticals, has several Associate positions available in our immunology and discovery programs. Successful candidates will have a B.S. in Biology, Immunology, Biochemistry, Microbiology or related discipline and have several years of relevant laboratory experience or a related M.S. degree and solid academic achievement. A demonstrated ability to do independent research and make intellectual contributions is necessary for these positions:

Immunology — Microbiology Associate (21707-A)

Perform research on the synthesis, release or biological activity of monokines and phagocytic killing of microorganisms; experience with small animals, cell cultures and immunoassays highly desirable.

Molecular Immunologist/ Biologist (21799-A)

Participate in the discovery process for new pharmacological agents; position requires familiarity with maintenance and transfection of tissue cells, ability to purify and characterize macromolecules (DNA, RNA, and proteins); experience with recombinant DNA a plus.

Biology Associate (21801-A)

Participate in development of receptor-ligand assays for use in discovery processes for pharmacological agents; position requires familiarity with receptor biochemistry and ability to purify and characterize enzymes; experience with tissue culture and immunological techniques required.

Kalamazoo is located in Southwestern Michigan midway between Chicago and Detroit and offers varied cultural events, cosmopolitan shopping and entertainment, lakes and woodlands minutes away, abundant year-round sports and recreation. Upjohn offers advancement opportunities, a highly competitive salary commensurate with experience, comprehensive benefits and relocation assistance. For prompt confidential consideration, please send curriculum vitae to: M. William Rex, Employment Representative, The Upjohn Company, Kalamazoo, Michigan 49001. Please refer to one of the above position numbers with correspondence. An Equal Opportunity Employer M/F.

Upjohn

**Our commitment to
scientific excellence continues...**

POSITIONS OPEN

IMMUNOLOGY AND INFECTIOUS DISEASES

The Department of Immunology and Infectious Diseases of the Research Institute of the Palo Alto Medical Foundation seeks an M.D. or Ph.D. immunologist with 2 or 3 years of postdoctoral experience. Additional training in molecular biology/cell biology highly desirable. Applicant should be capable of establishing an active, independent research program which would be a component of a larger unit in the area of host resistance to infection.

The Research Institute of the Palo Alto Medical Foundation is a well-equipped, not-for-profit institute located in downtown Palo Alto near the Stanford University campus.

Send curriculum vitae, a description of research interests, and names, addresses, and telephone numbers of at least three references to: **Jack S. Remington, M.D., Chairman, Department of Immunology and Infectious Diseases, Research Institute, Palo Alto Medical Foundation, 860 Bryant Street, Palo Alto, CA 94301.**

The new combined Allergy/Immunology Program of Rush Medical College and The Max Samter Institute is seeking two Board-certified **INTERNIST-ALLERGISTS** to join its full-time faculty, which already includes six Board-certified allergy/immunology subspecialists and a large staff of basic scientists. Physicians with major interest in laboratory investigation, particularly in the area of immediate hypersensitivity, are preferred for these two tenure-track positions; rank and salary will be based upon individual qualifications. Please address inquiries along with curriculum vitae to:

Henry Gewurz, M.D. (Chairman)
Department of Immunology/Microbiology
Rush Medical College
Rush-Presbyterian-St. Luke's Medical Center
1653 West Congress Parkway
Chicago, IL 60612

or to:

Howard Zeitz, M.D. (Program Director)
The Max Samter Institute of
Allergy & Clinical Immunology
Grant Hospital of Chicago
550 West Webster Street
Chicago, IL 60614

Rush Medical College and The Max Samter Institute are Affirmative Action/Equal Opportunity Employers.

LABORATORY COORDINATOR. The Applied Molecular Biology Program, University of Maryland Baltimore County (UMBC) invites applications for two **PERMANENT INSTRUCTOR** positions to begin 1 January 1988. (i) To coordinate and teach in project-oriented, graduate laboratory courses in recombinant DNA techniques and microbial genetics. (ii) To coordinate and teach in graduate laboratory courses in hybridoma preparation and biochemistry. Applicants should have research experience in the appropriate fields and preferably an M.S. degree. Submit curriculum vitae and names of three references to: **Dr. Nessler, Department of Biological Sciences, UMBC, Catonsville, MD 21228.** *UMBC is an Affirmative Action/Equal Opportunity Employer. Qualified minorities and women are encouraged to apply.*

MOLECULAR/CELLULAR NEUROBIOLOGIST

ASSISTANT PROFESSOR position in the Neurobiochemistry Group of the UCLA Mental Retardation Research Center. Of particular interest are candidates with demonstrated ability to develop an outstanding research program in the molecular/cellular biology of nervous system development. Start-up funds and excellent university salary and benefits are available. Recruitment will continue until a candidate is identified. Please send curriculum vitae, names of four references, and a brief summary of research accomplishments and future research direction by 1 November 1987 to:

Dr. Jean deVellis, Chairman, Search Committee
Neurobiochemistry Group
Mental Retardation Research Center
University of California, Los Angeles
760 Westwood Plaza,
Los Angeles, CA 90024

UCLA is an Equal Opportunity/Affirmative Action Employer.



ENDOWED PROFESSORSHIP IN CANCER OR IMMUNOLOGY

The University of Cincinnati and the State of Ohio have created an endowed professorship in the area of Mammalian Gene Regulation (Cancer) and/or Molecular Immunology. This professorship, named the Ohio Eminent Scholar, is designed to add an outstanding scientist to the Department of Microbiology and Molecular Genetics in the College of Medicine. The department has well established programs in molecular genetics and the Eminent Scholar will fulfill a pivotal role in expanding strength and interactions in the named area(s). The University of Cincinnati is a comprehensive university in the state system. Curriculum vitae should be sent to:

Dr. Jerry B. Lingrel
Department of Microbiology and
Molecular Genetics
University of Cincinnati
College of Medicine
Cincinnati, Ohio 45267-0524

Affirmative Action/Equal Opportunity Employer

Staff Scientist

Internationally recognized, University-affiliated Institute specializing in analytical biotechnology has opening for Staff Scientist to assist Director with research and Institute development. Research involves protein characterization, purification and biospecific interaction. Experience in cell isolation and characterization helpful. Qualifications: Ph.D. in chemistry or biochemistry with strong molecular background. Demonstrated excellence in research and strong communication skills required.

Send resume to: **Professor Barry L. Karger, Barnett Institute of Chemical Analysis, 341 Mugar Hall, Northeastern University, Boston, MA 02115.** Northeastern is an Equal Opportunity/Affirmative Action, Title IX University.

 **Northeastern University**

Postdoctoral Scientist Inflammatory Lung Disease

The Department of Experimental Pathology at Smith Kline & French Laboratories is seeking a Postdoctoral Scientist to join a collaborative group which is studying the mechanisms of endotoxin shock and the potential for therapeutic intervention. The successful candidate will work closely with colleagues in the Departments of Immunology and Pharmacology as well as Experimental Pathology in developing models of the Adult Respiratory Distress Syndrome (ARDS) and calibrating these models using a variety of cytologic, immunologic and morphologic techniques. The effects of pharmacologic modulation will be assessed using an array of anti-inflammatory and immunomodulatory compounds to probe the contribution of various inflammatory mediators with special emphasis on eicosanoids. Candidates having experience with models of pulmonary inflammation and/or assay of inflammatory mediators are strongly urged to apply.

Candidates are required to have:

- A doctoral degree in Immunology, Experimental Pathology or a related discipline.
- 0-3 years postdoctoral research experience.
- Proven research ability with strong oral and written communication skills.

The initial appointment is for one year renewable for a second year by mutual agreement.

Smith Kline & French Laboratories is located in suburban Philadelphia, PA, near Valley Forge. We offer excellent compensation and benefits, an attractive relocation policy and a work environment that offers considerable opportunity for personal and professional growth. In particular, it is expected that the work will lead to publication in leading journals as well as presentation at scientific meetings. Please forward your C.V. and the names of three references to: **Mary Ann McCarty-C0047-Smith Kline & French Laboratories, Research & Development, P.O. Box 1539, King of Prussia, PA 19406-0939.** We are an Equal Opportunity Employer, M/F/H/V.

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Commission de la Fonction
publique du Canada

Scientific Evaluator

**Health and Welfare Canada
Health Protection Branch
Bureau of Nutritional Sciences
Ottawa, Ontario**

We require an experienced biochemist to evaluate data on the nutritional quality and safety of foods with particular emphasis on novel foods and ingredients. You will also act as a consultant to other specialists in the Department, other government agencies and the food industry.

You require graduation from a recognized university with specialization in biochemistry. Experience in nutrition and toxicology of food and in evaluating the safety and nutritional adequacy of foods and ingredients is required. You should also possess experience in planning, designing or evaluating scientific projects and preparing and publishing reports. Knowledge of English is essential.

We offer a salary ranging from \$38,221 to \$47,625 commensurate with your qualifications and experience.

Preference will be given to Canadian citizens.

Forward your résumé and/or application form, quoting reference number S-87-31-5795-47JG (G35), to:

Joan Girling (613) 996-8054
Public Service Commission of Canada
Ottawa, Ontario K1A 0M7

Closing date: 9 October 1987

Personal information you may provide is protected under the Privacy Act. It will be held in Personal Information Bank
PSC/P-PU-040, Personnel Selection Files.

The Public Service of Canada is
an equal opportunity employer

Canada



USE YOUR SCIENTIFIC KNOWLEDGE TO FULL ADVANTAGE

Glaxo Inc. is one of the Top 10 ethical pharmaceutical firms in America. We are a company with tremendous growth opportunities, state-of-the-art facilities, and a commitment to producing medicines that save lives and eliminate suffering.

In the process we have expanded considerably our R & D effort, and now have new and exciting career paths in our Analytical Chemistry Department. This well-equipped, highly trained unit will play a key role in problem solving and in providing the Company with in-depth analytical resources. Other important departmental responsibilities include interfacing with compound discovery, formulation development, and quality control teams.

Areas of particular focus for the Analytical Chemistry Department include:

- **Developing and validating analytical methods and specifications for new drug substances, intermediates and dosage forms.**
- **Preparing analytical and stability sections of IND and NDA's.**
- **Conducting kinetic and mechanistic studies of drug degradation reactions.**
- **Isolation and identification of impurities and degradation products.**
- **Designing and conducting stability studies.**
- **Testing clinical supplies.**

Careers are available for experienced and non-experienced individuals with backgrounds in a wide variety of specializations such as: chromatography, spectroscopy, physical organic chemistry and analytical chemistry. Ph.D. level positions are available in Analytical Chemistry, Pharmaceutical Science, and Physical Organic Chemistry. B.S. and M.S. candidates with strong backgrounds in analytical and organic chemistry are also being sought.

Join Glaxo Inc. today and use your expertise to full advantage. Your abilities and potential will be recognized with a competitive starting salary and benefits package. Our location, in the heart of Research Triangle Park, North Carolina, offers a mild climate year round, access to some of the finest universities in the country, numerous cultural activities and nearby recreational facilities. For prompt consideration, please forward your resume, including salary history, to:

Dept. CK

(No Phone Calls, Please)
No Private Agency Referrals, Please

Glaxo Inc.

P.O. Box 13398
Research Triangle Park, NC 27709

An Equal Opportunity Employer M/F/V/H

POSITIONS OPEN

IMMUNOLOGY POSTDOCTORAL POSITION available at Vanderbilt University School of Medicine. This position is available immediately to study the mechanism of lymphocyte-mediated cytotoxicity of tumor cells. Candidates need skills in immunology or biochemistry. All interested candidates should forward résumés to: **James T. Forbes, Ph.D., Medical Oncology, A2127 Medical Center North, Vanderbilt University, Nashville, TN 37232.**

MICROBIOLOGISTS: A search is under way for individuals to fill a tenure-track position in medical microbiology and a tenure-track position in immunology. Postdoctoral experience, proven research ability, and commitment to undergraduate and graduate teaching in microbiology are required. Salary will be commensurate with experience. Send résumé, a statement of research interests and goals, transcripts of all academic work, and names and addresses of three reference individuals to: **Professor D. E. Talburt, Botany and Microbiology, University of Arkansas, Fayetteville, AR 72701.** Applications will be reviewed beginning 15 November 1987 for starting dates of January or August of 1988. *The University of Arkansas is an Equal Opportunity/Affirmative Action Institution.*

MOLECULAR/CELLULAR PHARMACOLOGIST OR NEUROPHARMACOLOGIST. Tenure-track position at assistant professor or associate professor rank. Assistant professor requirements: at least 2 years of postdoctoral experience and potential to develop independent research program. Associate professor requirements: five or more years of research/teaching experience in pharmacology or related discipline, evidence of excellent independent research, and current grant support. Molecular, cellular or neurophysiological research approaches to pharmacological problems preferred. Curriculum vitae, description of career goals, proposed research program, and three or more letters of recommendation must be received by 15 November 1987. Address to: **Dr. Neil C. Moran, Chairman, Department of Pharmacology, Emory University, Atlanta, GA 30322.** *An Affirmative Action/Equal Opportunity Employer.*

MOLECULAR/DEVELOPMENTAL BIOLOGIST. Applications are invited from molecular biologists in the area of vertebrate development. This position, to be filled at the assistant professor level, will complement existing research programs in limb, heart, and neural crest cell differentiation. Some participation in the department's medical and/or graduate teaching programs is required. Applicants exhibiting strong potential for obtaining extramural research fundings will be given priority. Significant start-up monies are available. Please send curriculum vitae, a statement or research interests, and the names of three references by 1 December 1987 to:

**Search Committee
Department of Anatomy & Cellular Biology
Medical College of Wisconsin
8701 Watertown Plank Road
Milwaukee, WI 53226
Equal Opportunity Employer M/F/H**

OCEANOGRAPHY: STAFF SCIENTIST position is available to teach oceanography in an innovative undergraduate program, Sea Semester. Courses consist of 6 weeks of intensive classroom instruction followed by 6 weeks of teaching on board a sailing research vessel in waters between the Caribbean and Newfoundland. Successful candidates will teach two courses per year, spending about 15 weeks per year at sea. Ph.D. in marine science required. Starting date: August 1988. Résumé and three letters of recommendation by 1 November 1987 to: **Dr. S. E. Humphris, Sea Education Association, P.O. Box 6, Woods Hole, MA 02543.**

An Equal Opportunity Employer

PHARMACOLOGIST: Faculty/research position for appropriate Ph.D., Pharm.D. Qualifications and experience must include strong medical school teaching skills and research accomplishments. Faculty rank and salary commensurate with experience. Send curriculum vitae and names of three references to: **Robert E. Mancini, Ph.D., D.O., Chairman, Department of Pharmacology/Toxicology & Experimental Therapeutics, New York College of Osteopathic Medicine, Box 170, Old Westbury, NY 11568.**

POSITIONS OPEN

MOLECULAR PARASITOLOGIST

The Department of Biological Sciences, University of Cincinnati, invites applications for an assistant professor tenure-track position in the area of molecular parasitology, beginning 1 September 1988. The candidate must have completed a doctorate, with postdoctoral experience required. The successful candidate will be expected to develop an externally funded independent research program studying the molecular basis of the biology of parasites and/or host-parasite interactions, with animal systems preferred. In addition, the candidate will participate in graduate and undergraduate education. Applicants must submit curriculum vitae, a one-page statement of research goals, and have at least three letters of recommendation submitted to: **Dr. Richard D. Karp, Molecular Parasitologist Search Committee, Department of Biological Sciences, University of Cincinnati, Cincinnati, OH 45221.** The deadline for applications is 15 November 1987. *The University of Cincinnati is an Equal Opportunity/Affirmative Action Employer.*

PATENT LICENSING ASSOCIATE UNIVERSITY OF CALIFORNIA (Two Positions) \$35,000 to \$44,400

License university technology to industry, negotiate and draft agreements. Extensive personal contact with industry and inventors. Moderate travel. Knowledge of patent and licensing law desired. Education/experience equivalent to advanced degree in either health care sciences or biotechnology or related field plus 5 years of industrial business experience. Background in medical devices, clinical diagnostic tests, or instrumentation desired. Apply by 9 October 1987 to: **University of California, 2199 Addison Street, Room 192, Berkeley, CA 94720. Attention: Personnel 20-21.** *Affirmative Action/Equal Opportunity Employer*

PHYSIOLOGY/PHARMACOLOGY SEARCH CONTINUED

Applications are invited for the position of discipline head of physiology/pharmacology. The desirable candidate will have an earned doctorate appropriate to the discipline, previous teaching and research experience at the graduate/professional school level, and be eligible for senior faculty rank. Prior administrative experience preferred. The successful candidate will be prepared to provide academic leadership in teaching a variety of topics in medical physiology and/or pharmacology.

Send curriculum vitae and references to: **William J. Dyche, Ph.D., Associate Dean for Preclinical Affairs, University of Osteopathic Medicine and Health Sciences, 3200 Grand Avenue, Des Moines, IA 50312.** *The University is an Equal Opportunity Employer.*

PHYTOPLANKTON ECOLOGIST. The University of Texas Marine Science Institute is reopening its search for an individual to fill a state-funded (75%), nontenure track **RESEARCH SCIENTIST** position. Preference will be given to candidates competent in the use of modern field and laboratory techniques to study phytoplankton and primary production in coastal waters and estuarine environments. Successful applicants are expected to obtain extramural funding to develop an independent research program and to cooperate in development of field-oriented multidisciplinary projects. Candidates must have a Ph.D. and record of research accomplishments. Postdoctoral experience preferred.

Send letter of application, statement of research interest, curriculum vitae, and names of three references before 2 November 1987 to: **Dr. Robert S. Jones, Director, Marine Science Institute, The University of Texas at Austin, Port Aransas, TX 78373.**

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

PLANT MOLECULAR BIOLOGY

The Department of Botany, The University of Texas at Austin, is seeking applicants for a full-time **ASSISTANT PROFESSORSHIP** to direct research, develop a graduate program and teach in the area of plant molecular biology. Applicants should possess demonstrated capabilities for research in some molecular aspect of plant biology involving the use of recombinant DNA technology. Send curriculum vitae, statement of future research goals, and names of three references by 2 November 1987 to: **Dr. Guy Thompson, Chairman, Search Committee, Department of Botany, The University of Texas at Austin, Austin, TX 78713.**

POSITIONS OPEN

PHOSPHOINOSITIDE RESEARCH

Postdoctoral position available immediately to study phosphoinositide turnover/transmembrane signaling coupled to platelet activating factor receptor, Ph.D. or M.D. degree required, with research experience in receptors, phospholipids, proteins desirable. Send curriculum vitae and names of three references to: **Dr. Shivendra D. Shukla, Department of Pharmacology, University of Missouri School of Medicine, Columbia, MO 65212.** Telephone: 314-882-2740.

PLANT PHYSIOLOGIST—The Department of Biology of Trinity College invites applications for a tenure-track position at the level of assistant professor (institutional approval pending) with a start date of 1 September 1988. Applicants must have a Ph.D. degree and postdoctoral research experience is preferred. The candidate will be responsible for a laboratory course in vascular plant physiology, a second course to be agreed upon, participation in a team-taught introductory biology course, and periodic instruction of a freshman seminar. The candidate will be expected to maintain a research program in which undergraduate majors may be involved. Commitment to the education of biology major and non-major undergraduates is essential. Send curriculum vitae, undergraduate and graduate transcripts, description of research, and three letters of recommendation no later than 24 October 1987 to: **Donald B. Galbraith, Chair, Department of Biology, Trinity College, Hartford, CT 06106.** *Trinity College is an Affirmative Action/Equal Opportunity Employer.*

Center for Hemostasis and Thrombosis Research, New England Medical Center and Tufts University School of Medicine, is seeking applications for **POSTDOCTORAL AND JUNIOR FACULTY (Ph.D., M.D., M.D./Ph.D.) POSITIONS:**

1) Molecular biologist: Cloning and expression of recombinant vitamin K-dependent blood coagulation proteins; site-directed mutagenesis to study structure-function relationships.

2) Protein structure and design: Computer molecular graphics design of proteins; design and synthesis of novel chimeric proteins via genetic engineering.

The Center, located in new laboratories, is well equipped with modern instrumentation for protein sequencing, peptide and DNA synthesis, and macromolecular display. Salary negotiable. Reply to: **Dr. B. Furie, Center for Hemostasis and Thrombosis Research, Tufts-New England Medical Center, 750 Washington Street, Boston, MA 02111.**

POSTDOCTORAL APPOINTMENTS

The Detonation Theory and Applications Group of the Los Alamos National Laboratory seeks recent Ph.D. recipients as candidates for postdoctoral positions. In addition, positions as a visiting staff member for periods of up to a year may also become available from time to time for more advanced degree holders. Current research interests in the group include reactive hydrodynamics (C. Mader, B. Bukiet, J. Jones), equations of state (R. Menikoff, M. S. Shaw), and computational chemistry (J. Ritchie). Postdoctoral appointments are for 1 year subject to renewal for up to 3 years. Appointments are awarded on a Laboratory-wide competitive basis.

To formally apply, send résumé, employment application, three letters of reference, and graduate and undergraduate transcripts to: **Carol M. Rich, Human Resources Development Division POSTDOC-AE, Los Alamos National Laboratory, Los Alamos, NM 87545.** For additional information, contact: **J. P. Ritchie at 505-667-8205.** *Los Alamos is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION

A 2-year postdoctoral position is available 1 January 1988 in the Department of Botany, Washington State University (WSU), Pullman, Washington 99164-4230, for a biochemist/plant biochemist/plant physiologist to investigate the molecular basis of malic acid transport in CAM species. Training and experience in plant membrane transport research and/or membrane protein labeling, identification and isolation required. Starting salary \$18,000 per year. Send curriculum vitae and the names of three references to: **Dr. Ernest G. Uribe, c/o Dr. Ben Stark, Department of Biology, Illinois Institute of Technology, ITT Center, Chicago, IL 60616** before 1 November 1987. *WSU is an Affirmative Action/Equal Opportunity Employer.*

Research Scientist

Sigma Diagnostics, a division of Sigma Chemical Company, a world renowned manufacturer of biochemicals and diagnostic reagents, is seeking a PhD Immunologist to join its rapidly expanding Hematology/Histology division. The successful candidate will have at least 5 years' experience in a clinical environment with emphasis on immuno-histochemistry. The position requires the ability to do independent work as well as strong written and verbal communication skills.

Sigma offers competitive salary and full company paid benefits. Please send resume with salary history in confidence to:

**Personnel Manager
SIGMA CHEMICAL COMPANY
P.O. Box 14508
St. Louis, MO 63178**

**SIGMA
DIAGNOSTICS**
Equal Opportunity Employer M/F

FACULTY POSITIONS IN BIOLOGY

As part of a program of continuing faculty and facility development in the natural sciences, Boston University seeks applicants for three tenure-track positions in Biology at the Assistant Professor level. Two years of postdoctoral experience required. Successful candidates are expected to develop an active, funded research program, supervise graduate students, and teach at the undergraduate and graduate levels. Competitive start-up funds are available. Positions to be filled are for September 1988.

COMPARATIVE PHYSIOLOGY Candidates are sought whose research interests include an integrative systems approach using modern methods in an area of study that complements existing faculty in neuroendocrinology, comparative reproductive endocrinology, behavioral endocrinology, and neurophysiology. Undergraduate teaching in general or systems physiology plus upper division course in speciality.

MOLECULAR CELL BIOLOGY Candidates are sought whose research interests involve molecular aspects of cellular regulation and development, neurobiology, and/or membrane structure and function. The successful applicant will be expected to complement existing faculty in cell development, cell-cell recognition, membrane transport, nucleic acid biochemistry, and cell regulation at the molecular level. Undergraduate teaching in cell biology plus upper division course in speciality.

EVOLUTIONARY BIOLOGY Candidates are sought whose research interests are in organismic evolution using molecular, biochemical, and/or cytogenetic approaches. The successful applicant will be expected to complement existing faculty in the areas of behavioral ecology, population biology, biochemical ecology, and physiological ecology. Undergraduate teaching at introductory level plus upper division course in evolutionary biology.

Send curriculum vitae, a summary of research interests, and names of three references to: Chair, (specify which position), Search Committee, Department of Biology, Boston University, Boston, MA 02215. Deadline for completed applications is November 15, 1987.

**BOSTON UNIVERSITY
Department of Biology**

An equal opportunity, affirmative action institution.



BIOCHEMICAL PHARMACOLOGIST (Ph.D.) FOR CARDIOVASCULAR RESEARCH

We're Ortho Pharmaceutical Corporation, part of Johnson & Johnson, the most broadly based health care company in the world.

We have an immediate opening in our Division of Pharmacology for a biochemical pharmacologist with a solid foundation in cardiovascular pharmacology and demonstrated capabilities of studying drug action at the biochemical/molecular level. The individual, with minimum 3-5 years of postdoctoral experience, will be part of a multidisciplinary team targeted to the discovery of drugs for the treatment of a variety of cardiovascular diseases including thrombotic disorders and coronary artery disease. The successful candidate will study drug action at the subcellular level (using radioreceptor, radioimmunoassay, enzymological and cell culture techniques) and will develop appropriate *in vivo* animal models. This senior scientist will be expected to:

- participate actively in our ongoing drug discovery efforts;
- establish an independent drug discovery program;
- interact with scientists in a variety of disciplines including medicinal chemistry;

- conduct drug evaluation studies and participate in the decision-making process of recommending compounds for development; and
- possess excellent oral and written communication skills.

In addition to a fully competitive compensation and benefits program, we offer a stimulating environment in which to grow and be recognized accordingly. If you are willing to accept this challenge and meet the above qualifications, please send your resume including salary history and requirements, to: Mr. Frank Folio, Dept. 35, Ortho Pharmaceutical Corporation, P.O. Box 300, Raritan, NJ 08869-0602

An equal opportunity employer, M/F

**ORTHO PHARMACEUTICAL
CORPORATION**

A Johnson & Johnson Company



A LOT MORE THAN YOU THINK

NATIONAL SCIENCE FOUNDATION (NSF)

NSF's Division of Astronomical Sciences is seeking qualified applicants for the following positions.

(1) Program Director, Astronomical Instrumentation and Development Program. This position will be filled on a one year rotator or temporary basis starting January 1988.

(2) Astronomy Centers Manager, National Astronomy Center. This position will be filled on a two year rotator or temporary basis starting as soon as possible.

The per annum salary for temporary positions is currently AD-Level IV, \$45,763 to \$71,555. The per annum salary for rotator positions is currently \$50,000 to \$72,500. Normally the rotator candidate receives a leave of absence from his/her employer and salary is set in accordance with the Rotator Program.

Applicants should have a Ph.D. in Astronomy or Astrophysics or equivalent experience. In addition for the Program Director positions, 6 or more years of scientific research experience beyond the Ph.D. along with experience is required. For the National Astronomy Center position, experience in management in organizations which conduct scientific or technical research is also required.

Program Directors are responsible for the review, recommendation and processing of proposals for grants in astronomy research and budget preparation. The Astronomy Centers Manager is responsible for scientific and technical oversight of work at a National Astronomy Center, review of new proposals and initiatives, and budget preparation.

Applicants should send a SF-171, Application for Federal Employment, or resume to the **National Science Foundation, 1800 G St., NW., Room 208, Washington, DC 20550. Attn: Catherine Hande.** For technical information, please contact the Division of Astronomical Sciences, (202) 357-9488. For further information on how to apply call (202) 357-7840. Hearing impaired individuals should call (202) 357-7492.

NSF is an Equal Opportunity Employer.

STATE OF KUWAIT

KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH

Kuwait Institute for Scientific Research (KISR) is a nonprofit organization with a staff of more than one thousand employees engaged in applied research in the fields of Environmental and Earth Sciences, Food Resources, Engineering, Petroleum, Petrochemicals and Materials and Techno-Economics.

KISR has a vacancy for a:

SUPERVISOR, EDITORIAL UNIT

MAJOR DUTIES:

- Supervising and checking work of the unit, training editors (technical editing and computer use).
- Editing and supervising the editing of project reports, technical reports, proposals to clients, manuals, articles to be submitted to journals, conference papers, annual research report articles, brochures and fliers.
- Is responsible for the editing and production of the KISR Annual Research Report.
- Is responsible for the writing and production of the public version of the KISR Annual Report, and for the writing of the KISR Annual Report and KISR Semiannual Report to the Board of Trustees.
- Supervising typesetting of specific materials as needed.

QUALIFICATIONS:

Applicants should have a M.A. or M.Sc. degree or equivalent with 7 years of experience in technical editing, excellent knowledge of English grammar and syntax. Some managerial experience preferred.

KISR offers attractive tax free salaries commensurate with qualifications and experience and generous benefits which include gratuity, free furnished airconditioned accommodation, school tuition fees for children, contribution to a savings plan, five weeks annual paid vacation, airtickets, free medical care and life insurance.

Interested applicants are requested to send their curriculum vitae with supporting information not later than one month of this publication to:

DR. HOMOUD AL-RQOBAH
DIRECTOR GENERAL
KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH
P.O. BOX 24885 SAFAT
13109 SAFAT, KUWAIT.

BIOTECHNOLOGY INDUSTRIAL LIAISON

Iowa has invested nearly \$50 million in agricultural biotechnology research at Iowa State University in the past two years. A position is immediately available for an individual to serve as liaison between the agricultural biotechnology program of ISU and biotechnology industries.

Primary responsibilities will be to establish and promote opportunities for research collaboration between the biotechnology industry and ISU, industry investment in university product development activities, and the location of industrial research and production facilities in Iowa. The individual will be a staff member of ISU's Office of Biotechnology, which coordinates the university-wide biotechnology research programs of the Colleges of Agriculture, Engineering, Family and Consumer Sciences, Sciences and Humanities, and Veterinary Medicine. The individual will work closely with the state agencies and institutions represented in the Iowa Biotechnology Consortium.

Minimum requirements are a Master's degree in a biotechnology-related discipline with considerable experience in university and/or corporate research and management. Salary is commensurate with qualifications and experience. The initial appointment is for a minimum of two years with renewal contingent on performance and funding.

Qualified individuals should submit a detailed resume including names, addresses, and phone numbers of three references who may be contacted to Walter R. Fehr, Biotechnology Coordinator, 1301 Agronomy, Iowa State University, Ames, Iowa 50011.

Application deadline: October 30, 1987, or until filled.

Iowa State University is an Equal Opportunity-Affirmative Action Employer.

IOWA STATE UNIVERSITY
Ames, Iowa

Opportunities in Molecular Genetics

Pfizer Central Research is seeking qualified professionals to fill several openings in the Department of Molecular Genetics. Working with other specialists in a multi-disciplinary project team, you will conduct original research experiments, applying your skills to exploratory biomedical research projects involving molecular genetics approaches.

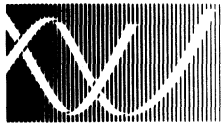
These positions require either an MS or BS in an appropriate biological or chemical discipline with additional postgraduate experience in one or more of the following areas:

- mRNA isolation, cDNA library construction
- chemical analysis of protein sequence and structure
- synthesis, cloning and characterization of synthetic DNA
- mammalian cell culture/transcription regulation

In addition to a stimulating scientific environment, we offer a competitive compensation/benefit package and relocation assistance to an attractive southeastern Connecticut shore community. Please send a resume, description of research experience and names of three references to: Mrs. Lorraine C. Corr, Personnel Associate, Pfizer Central Research, Eastern Point Road, Groton, CT 06340.



An equal opportunity employer



C A B M

CENTER FOR ADVANCED BIOTECHNOLOGY AND MEDICINE

The Center for Advanced Biotechnology and Medicine is a newly established molecular biology research program jointly administered by the University of Medicine and Dentistry of New Jersey, and Rutgers, the State University of New Jersey. It is funded by the N.J. Commission on Science and Technology, and by industry, public and private sources.

CABM is seeking staff members to initiate and implement programs in Structural Biology, Molecular Genetics, Cell and Developmental Biology and Molecular Pharmacology. Staff members will be employed through either university depending upon subject-matter and responsibilities. Immediate openings include:

LABORATORY RESEARCHERS

Various positions needed to purify and crystallize proteins for X-ray crystallographic analyses (experience in protein chemistry/purification required); to operate in a protein microchemistry laboratory, including synthesizing peptides and sequencing proteins; to prepare tissue culture cell and virus stocks, and to perform biochemical and genetic analyses. (\$22K-\$40K*).

LABORATORY AIDES & ASSISTANTS

Positions available to prepare media, operate equipment, process glassware, and maintain laboratory records. (\$11K-\$16K*).

FACILITIES COORDINATOR

To oversee construction of a 100,000 square foot molecular genetics laboratory building and manage its operation. (\$35K-\$50K*).

* All salaries commensurate with education and experience and a generous benefits program is provided. Send resume to:



Robert M. Namovicz
Executive Officer, CABM
675 Hoes Lane
Piscataway, NJ 08854

affirmative action/
equal opportunity employer

HEALTH SCIENTIST ADMINISTRATION TRAINING AT THE NATIONAL INSTITUTES OF HEALTH THROUGH THE GRANTS ASSOCIATES PROGRAM

Scientists in biomedical or behavioral research interested in an administrative career with federal programs supporting research and training in health related fields may wish to consider the Grants Associates Program in the U.S. Public Health Service. This program is governed by the Grants Associates Board and is administered by the Office of Extramural Research in the Office of the Director, National Institutes of Health.

The Program offers a limited number of full-time permanent positions per year on a highly selective basis, that prepare each associate for a leading role in health science administration. For a twelve-month period, Grants Associates participate in individually structured training experiences including on-the-job assignments, courses and seminars. The Program provides opportunities for participation in the development and administration of federally supported research programs, in the fundamentals of effective management, in the peer review process and in other related areas of health science administration. The Program also attempts to develop a sensitivity to the consequences of program decisions on other federal health programs, research institutions, and national health needs.

Admission to the program is highly competitive for the few positions available. Motivation for a career in science administration, good interpersonal skills, and evidence of executive potential are important. If you are a U.S. citizen and hold a doctorate or equivalent in a discipline related to the biomedical or behavioral sciences, have significant independent research experience beyond the doctorate and are attracted to health science administration as a profession, you should inquire about the Grants Associates Program.

Grants Associates may be appointed either in the U.S. Civil Service with a salary range of \$32,567 to \$45,736 (General Schedule levels 12-14) depending on experience or in the Commissioned Corps of the U.S. Public Health Service at ranks beginning with senior grade (03 Lieutenant) salary dependent on prior military experience, but beginning at \$19,990.80 basic pay.

The National Institutes of Health does not discriminate in employment on grounds of race, color, sex, national origin, age or handicap.

For further information, write to:

Director, Health Scientist Administrator
Development Programs
Office of Extramural Research
Office of the Director
National Institutes of Health
9000 Rockville Pike
Building 31, Room 1B-62S
Bethesda, MD 20892

THE NIH IS AN EQUAL OPPORTUNITY EMPLOYER

POSITIONS OPEN

POSTDOCTORAL POSITION—Ph.D. to participate in projects involving several research groups studying natural and artificial photosynthesis. Central to the position is the construction and utilization of a picosecond single photon counting fluorescence spectrometer. Please send résumé and three letters of recommendation to: **Thomas Moore, Department of Chemistry, Arizona State University, Tempe, AZ 85287-1604.** *ASU is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION

For studies of cell and molecular biology of T lymphocyte activation. Ongoing projects involve Ca^{2+} ion flux, oncogene and lymphokine gene expression, and second messenger function in T cells from normal and aging mice. Send curriculum vitae with names and three references to: **Rich Miller, Department of Pathology, Boston University, 80 East Concord Street, Boston, MA 02118.**

An Equal Opportunity Employer.

POSTDOCTORAL POSITION—available for Ph.D. biochemist/cell biologist interested in studying structural, functional, or regulatory aspects of unique intracellular lipid modified proteins in relation to cell cycling and cell differentiation. Experience with protein purification, immuno-chemical, or molecular techniques helpful. Salary based on experience. Position is located in new research facility in attractive semirural setting. Send curriculum vitae and three references to: **Dr. William Maltese, Weiss Center for Research, Geisinger Clinic, Danville, PA 17822.**

Equal Opportunity Employer M/F/H.

POSTDOCTORAL POSITION DANA FARBER CANCER INSTITUTE HARVARD MEDICAL SCHOOL

Available immediately. Tumor biologist/immunologist with experience in several in vitro and in vivo tumor models. Research involves the production and use of monoclonal antibodies as carriers of radionuclides for diagnosis and therapy. Candidate will work independently within a multidisciplinary group and participate in a Phase I radioimmunotherapy study. Salary \$21,000. Please contact: **Dr. A. I. Kassis, Harvard Medical School, SWRL, 50 Binney Street, Boston, MA 02115.** Telephone: 617-732-2184. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION: The Division of Pulmonary Medicine at Long Island Jewish Medical Center is seeking a Ph.D. to direct the Pulmonary Research Laboratory and to pursue independent research. Potential collaborative areas of interest include endothelial cell injury, erythropoietin physiology, and surfactant secretion. Continuous funding available through the Nina Weissman Foundation. Interested applicants should send their curriculum vitae to: **Harry Steinberg, M.D., Division of Pulmonary and Critical Care Medicine, Long Island Jewish Medical Center, New Hyde Park, NY 11042.** *Equal Opportunity Employer.*

POSTDOCTORAL POSITION available for person experienced in molecular biology to investigate cancer suppressor genes. Please send curriculum vitae and names and telephone numbers of three references to: **Dr. Noel Bouck, Department of Microbiology-Immunology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, IL 60611.**

POSTDOCTORAL POSITION: seeking molecular biologist to participate in evolutionary studies on protists. Must have competence in cDNA cloning and sequencing. Available immediately. Applicants should send curriculum vitae to: **Dr. Richard E. Triemer, Department of Biological Sciences, Rutgers University, Piscataway, NJ 08855-1059.**

POSTDOCTORAL POSITION

Project to investigate the mechanism of initiation of S phase DNA replication in tumor cells. Involves immunoaffinity purification of DNA polymerases and cell cycle-dependent regulatory proteins, molecular cloning, hybridization in situ, preparation of monoclonal antibodies, immunocytochemistry, and flow cytometry. Begin spring 1988. Contact: **Dr. Robert Bambara, Box 607, University of Rochester Medical Center, 601 Elmwood Avenue, Rochester, NY 14642.**

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to participate in research on the actions of insulin and its interactions with its receptors using in vitro cell systems and animal models in a dynamic department with excellent environment for protein engineering and molecular biology. Experience with protein purification, molecular biology, site-directed mutagenesis, and cell culture is desirable but not mandatory. Please send your application, curriculum vitae, and names of three references to: **Dr. Pierre De Meyts, Department of Diabetes, Endocrinology and Metabolism, City of Hope National Medical Center 1500 East Duarte Road, Duarte, CA 91010.**

POSTDOCTORAL POSITION available immediately to study the regulation of class II MHC glycoprotein expression by mononuclear phagocytes. Experience in molecular biology or cell biology or immunology desirable. 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.*

POSTDOCTORAL POSITION is available immediately to study the structure, function, and molecular biology of Arg-Gly-Asp-directed cell adhesion receptors expressed in human cells.

A strong background in molecular biology is required. Send curriculum vitae and names of three references to:

David A. Cheresh, Ph.D.
Laboratory of Tumor Cell Biology
IM-13
Research Institute of Scripps Clinic
10666 North Torrey Pines Road
La Jolla, CA 92037

POSTDOCTORAL POSITION available for a recent graduate with a Ph.D. in an area of oculomotor-vision research. Candidates with a background in motion perception who want experience in an established human oculomotor research laboratory are encouraged to apply. This is a Stanford University position located at the Santa Clara Valley Medical Center, where the graduate would work with an M.D. neurologist and Ph.D. biomedical engineer. Send résumé and three letters of recommendation to: **John R. Hotson, M.D., Department of Neurology, Santa Clara Valley Medical Center, 751 South Bascom Avenue, San Jose, CA 95128.** *Stanford University is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION is available immediately to study the regulation of transcription initiation in a DNA-tumor virus system. Applicants should have a strong background in molecular biology and/or biochemistry. Experience with recombinant DNA techniques is desirable. The project is funded through August 1992 with a starting salary of \$18,516 to \$20,472 plus depending on experience with excellent fringe benefits. Send curriculum vitae and names, addresses, and telephone numbers of three references to:

Dr. Gokul C. Das
Department of Molecular Biology
The University of Texas Health Center at Tyler
P.O. Box 2003
Tyler, TX 75710

POSTDOCTORAL POSITION to study the role of electrical excitability in the control of secretion from identified pituitary cells. NIH-funded project with support available immediately. Experience in single-cell electrophysiology desirable. Send curriculum vitae and names of references to: **C. J. Lingle, Department of Anesthesiology, Washington University School of Medicine, 660 South Euclid Avenue, St. Louis, MO 63110.**

POSTDOCTORAL POSITION—ENZYMOLGY. The research is aimed at identifying, isolating, and characterizing lignin-degrading enzymes in a filamentous fungus. Work will be in well-equipped laboratories at U.S. Forest Products Laboratory/University of Wisconsin. Available immediately for 1 to 2 years. Salary: \$26,000 per year. U.S. citizens only. *An Equal Opportunity Employer.* Reply: **Dr. T. K. Kirk, Forest Products Laboratory, One Gifford Pinchot Drive, Madison, WI 53705-2398.** Telephone: 608-264-5887 or 5866.

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to study the interactions of diet and toxic stimuli on myocardial cell development. In vitro systems of cultured adult and neonatal rat heart cells will be used as experimental models. A strong background in biochemistry, cell biology, and cell culture technology is required. Cellular injury induced by the treatments will be evaluated by changes in cell function, enzyme activities, and receptor activity. Send curriculum vitae and the names and addresses of three references to: **Daniel Acosta, College of Pharmacy, The University of Texas, Austin, TX 78712.**

POSTDOCTORAL POSITION MOLECULAR IMMUNOLOGY RESEARCH INSTITUTE OF SCRIPPS CLINIC

A postdoctoral position is available to study the interaction of CD4 with MHC Class II, HIV gp120, and the T cell receptor using genetically engineered secreted versions of these molecules. Individuals with a strong background in protein chemistry and/or genetic engineering are particularly encouraged to apply. The candidate must be a U.S. citizen or permanent resident.

Please send curriculum vitae, representative publications, and names of three referees to:

Dr. Nicholas Gascoigne or Dr. Per A. Peterson
Department of Immunology, IMM-1
Research Institute of Scripps Clinic
10666 North Torrey Pines Road, La Jolla, CA 92037

POSTDOCTORAL POSITION IN MOLECULAR VIROLOGY. A postdoctoral position is available to study the regulation of mRNA stability in cells infected with herpes simplex virus. The successful candidate will join a research group interested in characterizing trans acting molecules which regulate mRNA half lives, as well as cis acting signals that distinguish mRNAs with different stabilities. The work will include construction and analysis of viruses carrying mutations in a gene whose product has been shown to regulate mRNA stability. Applicants should have a strong background in molecular biology, virology, or molecular genetics. Send curriculum vitae and three letters of recommendation to:

Dr. G. Sullivan Read
Department of Microbiology
Loyola University of Chicago
Stritch School of Medicine
2160 South First Avenue
Maywood, IL 60153

Loyola University is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITIONS available in cytokine research to study (i) signal transduction through the receptor for tumor necrosis factor or (ii) the cell biology of tumor necrosis factor actions in normal and transformed cells. Recent Ph.D. with training in protein chemistry, cellular or molecular biology preferred. Applicants should submit curriculum vitae and names of three references to: **Dr. David B. Donner, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021.**

POSTDOCTORAL POSITION AND RESEARCH ASSOCIATE POSITION available in protein chemistry and affinity labeling of purine nucleotide sites in dehydrogenases and kinases. Recent Ph.D. in biochemistry. Send résumé and three references to: **Dr. Roberta F. Colman, Department of Chemistry and Biochemistry, University of Delaware, Newark, DE 19716.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL—RESEARCH ASSOCIATE POSITIONS. Positions are available to study the mechanisms of 3-methylcholanthrene-induced thymic lymphoma in mice. The work is part of a comprehensive program that includes genetic, immunological, and molecular approaches to chemical carcinogenesis in this animal model. Experience in recombinant DNA techniques is desirable. Applicants can choose between the laboratories of **Drs. Frank Lilly, Geoffrey Childs, Leslie Leinwand, Ken Krauter or Jack Lenz**, depending on the particular project of interest. Send curriculum vitae and at least two letters of recommendation to **Dr. Frank Lilly, Department of Genetics, Albert Einstein College of Medicine, Bronx, NY 10461.** *An Affirmative Action/Equal Opportunity Employer.*



EXECUTIVE DIRECTOR

Oak Ridge Associated Universities

The Board of Directors of the Oak Ridge Associated Universities invites nominations and applications for the position of Executive Director. Oak Ridge Associated Universities is a private not-for-profit association of 49 colleges and universities with a staff of more than 500 and a current operating budget of approximately \$35 million with offices in Oak Ridge, TN, and Washington, DC. It conducts research, educational and information programs in the areas of energy, health, and the environment for the U.S. Department of Energy (DOE), other private and governmental organizations, ORAU member institutions, and other colleges and universities. ORAU is a management and operating contractor for DOE. Activities include the administration of pre- and post-doctoral fellowships, basic and applied research in biomedicine and physics, policy studies, and management of major research facilities.

Responsibilities of the Executive Director include: Direction of all programs, facilities, and personnel; provision of strong leadership in pursuing new initiatives and new directions for ORAU; overall responsibility for cooperative activities and relationships with member institutions; representation of ORAU to federal agencies, corporations, foundations, universities, and other organizations; and strategic planning.

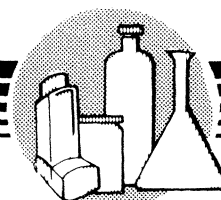
It is desirable that candidates for the position have the following qualifications: Earned doctorate in science, engineering, medicine or a related field; experience as a faculty member or familiarity with university administration, governance, etc.; research experience; familiarity with government agencies, funding procedures, and proposal preparation; management experience, including fiscal, personnel, and program/project responsibility; familiarity with private foundations and other 501(c)3 institutions; strong interpersonal skills; and ability to communicate well orally and in writing.

The position will be available on or before July 1, 1988. The Search Committee will begin its review of applications November 2, 1987. Salary and starting date are negotiable. Applications should include a letter stating an interest in the position, a complete resume, and names and addresses of at least three references. Applications will be considered confidential.

Applications and nominations should be sent to:

Dr. Paul F. Parks
Vice President for Research
202 Samford Hall
Auburn University, AL 36849

ORAU is an EEO/AA Employer



Glaxo Has The Prescription For Career Success

Glaxo Inc., is one of the premier research based pharmaceutical companies in America. Ranked in the nation's Top 10, we are a technically advanced force for innovation that is constantly adding new and important ethical and proprietary pharmaceuticals to its long list of successes. We currently have the following openings available at our Corporate Headquarters located in Research Triangle Park, N.C. (near Raleigh/Durham).

PHARMACEUTICAL SENIOR SCIENTIST

As a key member of our Analytical Chemistry Team, you will be responsible for:

- **Developing analytical methods and conducting accelerated and long-term stability studies. Applying kinetics and physical chemical principles to elucidate drug degradation reaction mechanisms. Preparing IND and NDA technical documentation.**

Background must include a Ph.D. in Physical Organic Chemistry or Pharmaceutical Science. Desirable to have 2-3 years postdoctoral experience in kinetic studies and evaluation of reaction mechanisms. Must also have experience with state-of-the-art analytical instrumentation. **Dept. 86-279E**

The following SENIOR SCIENTISTS positions are available within our Biochemistry Department.

SENIOR SCIENTIST

Qualified candidate will be responsible for:

- **Isolation, characterization, and study of kinetic parameters of target enzymes. Design of specific inhibitors and substrates for selected enzymes.**

SENIOR SCIENTIST

Qualified candidate will be responsible for:

- **Peptide synthesis — classical and solid phase. Structure function activity relationship of synthetic peptides in a variety of areas.**

Both positions require a Ph.D. in Biological Chemistry with 2-3 years postdoctoral experience in enzymology or peptide synthesis. Candidates must be familiar with state-of-the-art analytical instrumentation. Supervisory experience is desired. **Dept. 86-271E**

At Glaxo Inc., growth opportunities and up-to-date facilities are complemented by a location that has excellent resources in close proximity. Prestigious universities, scenic vistas, lively recreational areas, and exciting cultural opportunities are all a part of the daily life of the Glaxo professional. Further, we reward talent and creativity with an excellent salary and benefits package.

For prompt consideration, please forward your resume, INDICATING THE CORRESPONDING DEPARTMENT NUMBER, and salary history, to:

Dept. CK

No Private Agency Referrals, Please (No Phone Calls, Please)

Glaxo Inc.

P.O. Box 13398
Research Triangle Park, NC 27709

An Equal Opportunity Employer M/F/V/H

TUMOR BIOCHEMIST/ MOLECULAR BIOLOGIST

The Chemotherapy Department has an immediate opening for a biochemist or molecular biologist to work on approaches to cancer chemotherapy through modulation of growth regulatory processes. The selected candidate will participate in an environment of basic and applied science designed to generate novel drug discovery strategies and techniques.

Qualified applicants should possess the following:

- Ph.D. in biochemistry, molecular biology or related discipline with 1-5 years of postdoctoral experience.
- Experience in one and more of the following areas: Growth factor-receptor interactions, mitogen mediated signal transduction, phosphatidylinositol metabolism or other second messenger pathways and protein kinase C.
- Knowledge of cancer chemotherapy or tumor biology will be considered an advantage.
- Excellent oral and written communication skills.

Our research facilities, adjacent to 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. We offer excellent compensation, benefits and working environment. Qualified candidates should forward resume together with salary requirements to: **Ms. Rose Chapman, Manager, Human Resources, Warner-Lambert/Parke-Davis, 2800 Plymouth Road, Ann Arbor, MI 48105.**

**WARNER
LAMBERT**

"EQUAL OPPORTUNITY IN ACTION"

POSTDOCTORAL FELLOWSHIPS

The Hebrew University of Jerusalem

JERUSALEM, ISRAEL

The Hebrew University of Jerusalem invites applicants for Postdoctoral Fellowships in Humanities, Social Sciences, Natural and Applied Sciences, Agriculture and Medicine for the 1988-89 academic year.

Candidates may apply at an early stage of their professional career (not later than 3 years after completion of their doctoral dissertation).

The fellowships are tenable for one academic year and may be extended for another year.

The fellowship provides a 12-month stipend (with COL adjustments), rent allowance and a return ticket to Israel.

Application forms can be obtained from the Office of University Funds, P.O. Box 1255, Jerusalem, 91904, Israel.

Completed application forms must be returned by December 1, 1987.



**National Research
Council Canada**

**Conseil national
de recherches Canada**

Research Officer (Montreal, Quebec)

The Protein Engineering Section of the Biotechnology Research Institute, National Research Council of Canada requires a NMR spectroscopist specializing in peptide and protein structure determination.

Research in this Section is directed to the isolation and characterization of proteins and enzymes, chemical and physical studies including sequencing, synthesis, kinetics and structure determination. In collaboration with other members of the Institute, the Section carries out protein engineering research on hydrolytic enzymes. The successful candidate for this position will be required to set-up and lead a research group within the Section for the determination of peptide and protein solution structures by two-dimensional NMR spectroscopy.

Candidates must have a Ph.D. in biochemistry or in a related discipline and at least 5 years of relevant postdoctoral research experience. Demonstrated ability to provide leadership to a group of scientists and aptitude to communicate well with scientists and industrialists are essential. Knowledge of both the English and French languages is required for this position. Unilingual persons may apply but must indicate their willingness to become bilingual and demonstrate their potential to achieve the required level of linguistic proficiency. Training will be provided at NRC expense if necessary.

SALARY: Commensurate with qualifications and experience.

Apply in writing, giving complete details of education and experience to: **The Manager, Employment Office, National Research Council of Canada, Ottawa, Canada, K1A 0R6.** In reply, please quote RB-87-07(SC).

Canada

POST DOCTORAL POSITIONS

Post Doctoral positions are available for research on the bio-chemistry & molecular biology of the components of CONNECTIVE TISSUES. A background in collagen, proteoglycan or glycoprotein biochemistry with experience in cell or molecular biology is desirable. Applicants must have US citizenship or permanent residence status. Send resume to:

N.A. KEFALIDES, MD, PhD

Connective Tissue
Research Institute
University of
Pennsylvania

**UNIVERSITY CITY
SCIENCE CENTER**

3624 Market St.; Phila., PA 19104
An Affirmative Action/Equal Opportunity
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**Agricultural
Research
Service**

**United States
Department of
Agriculture**

BIOLOGICAL SAFETY OFFICER

**MICROBIOLOGIST GM-13/14 OR
VETERINARY MEDICAL OFFICER, GM-13/14
GREENPORT, L.I., NEW YORK**

Develops and implements safety programs at the Plum Island Animal Disease Center in support of the Agricultural Research Service's foreign animal disease research program and the Animal and Plant Health Inspection Service's foreign animal disease diagnostic program. Provides expert advice to management, and directs research on biological safety. Must be expert in biocontainment and risk assessment of disease microorganisms, diagnostic specimens and reagents. Exercises overall responsibility for developing safety measures to be followed in all operations including laboratory procedures, movement of materials, animals, vehicles and persons at the Center.

The person chosen for this position must have an extensive knowledge of microbiology and infectious diseases, and knowledge in one or more of the following areas: pathology, epidemiology, industrial safety and toxicology. The Biological Safety Officer will supervise through subordinates, a staff of about 20 individuals and must be skilled in dealing with interpersonal and management issues.

Must be a U.S. citizen. Salary is commensurate with experience. For information on application procedures, contact **Delores Kaufman, 301/344-3950**. Applications in response to this advertisement should be marked 7E030 and sent to: **Dolores Kauffman, ARS, USDA, PD, Rm. 123, Bldg. 003, BARC-West, Beltsville, MD 20705**. Applications must be received by October 2, 1987.

Salary Range: \$38,727/\$59,488

**ARS IS AN EQUAL OPPORTUNITY EMPLOYER
WOMEN AND MINORITIES ARE URGED TO APPLY**



DENTAL RESEARCH INSTITUTE IN ORAL BIOLOGY

UNIVERSITY AT BUFFALO

Post-doctoral positions available immediately to carry out basic research on interdisciplinary studies in oral biology. These positions are part of a new NIH funded Dental Research Institute utilizing modern techniques of biochemistry, biophysics, molecular biology, microbiology, immunology, and cell biology to examine the modulation of natural response in oral disease in three integrated areas: Salivary Defense Factors, Bacterial Virulence Factors and Host Response Systems. Inquiries including resume should be directed to the scientists listed below at the Dept. of Oral Biology, SUNY/Buffalo, Foster Hall, Buffalo, N.Y. 14214.

Positions are available for:

Molecular Biologist with experience in molecular cloning in mammalian systems to work on the structural aspects of human salivary glycoproteins and phosphoproteins. (Write to **Dr. Michael Levine, 109 Foster Hall; Tel: 716-831-2114**).

Biophysicist with experience in high resolution NMR techniques, computer modeling, and X-ray diffractometry to examine peptide conformation of human salivary molecules. (Write to **Dr. Ronald Loomis, 109 Foster Hall; Tel: 716-831-2114**).

Biochemist or Microbiologist to study the interaction of Streptococcus surfaces with components of human saliva, cardiac muscle, and kidney; and to characterize mechanisms of coaggregation between Streptococcus and Bacteroides species. (Write to **Dr. Murray Stinson, 230 Cary Hall; Tel: 716-831-2177**).

Microbiologist with background in microbial physiology and/or microbial ecology to define and characterize virulence factors associated with infections due to black pigmented Bacteroides. Experience with the use of a chemostat for bacterial culture helpful. (Write to **Dr. Joseph Zambon, 222 Foster Hall; Tel: 716-831-3940**).

Biochemist or Microbiologist with experience in purification and characterization of carbohydrates and immunological techniques to examine the structure and pathogenic potential of bacterial polysaccharides. (Write to **Dr. Rosemary Linzer, 211 Foster Hall; Tel: 716-831-3826**).

Molecular Biologist preferably with experience in molecular cloning in bacterial systems to work on molecular analysis and evolution of fimbriae in black-pigmenting Bacteroides. (Write to **Dr. Douglas Dickinson, 210 Foster Hall; Tel: 716-831-3127**).

Immunochemist or Protein Chemist to work on epitope mapping and structure/function relationship of bacterial fimbriae. Experience with monoclonal antibodies and peptide synthesis desirable. (Write to **Dr. Robert Genco, 115 Foster Hall; Tel: 716-831-2854**).

Cell Biologist or Biochemist preferably with experience in cell culture, fluorescence spectroscopy and biochemical techniques to study the effects of biological response modifiers on bone cells with emphasis on cytosolic calcium and arachidonic acid metabolism. (Write to **Dr. Rosemary Dzlak, 318 Foster Hall; Tel: 716-831-3827**).

Cell Biologist or Biochemist to work on expression, isolation, and purification of a unique periodontal ligament cell autocrine motility and mitogenic factor. (Write to **Dr. Victor Terranova, 320 Foster Hall; Tel: 716-831-2132**).

Biochemist or Cell Biologist with experience in receptor purification, radioligand binding assays and/or flow cytometric techniques to study complement receptor expression on neutrophils. (Write to **Dr. Mark Wilson, B36 Foster Hall; Tel: 716-831-2590**).

Cellular Immunologist or Microbiologist with experience in infectious disease processes in animal models and/or bacterial membrane isolation to study host response mechanisms in gram-negative bacterial infections. (Write to **Dr. Priscilla Chen, 111 Foster Hall; Tel: 716-831-2515**).

EQUAL OPPORTUNITY EMPLOYER

CELLULAR IMMUNOLOGIST

M.D. or Ph.D. wanted to join Clinical Immunology group studying human autoimmune diseases. Experience with flow cytometry, cell sorting, and cloning of B cells required for in vitro studies of rheumatoid factors.

For confidential consideration, submit resume to: Dr. Vincent Agnello, Director, Clinical Immunology Laboratory, Lahey Clinic Medical Center.

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LAHEY CLINIC MEDICAL CENTER

**41 Mall Road
Burlington, MA 01805**



POSITIONS OPEN

POSTDOCTORAL/RESEARCH ASSOCIATE position available immediately to study biochemical and molecular aspects of cAMP-dependent protein kinases in brain and cultured endocrine cells. Candidates should have a recent Ph.D. in biochemistry or molecular biology. Send curriculum vitae and three letters of reference to: **Dr. Jack Erlichman, Department of Medicine/Biochemistry, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, NY 10461.**

POSTDOCTORAL RESEARCH ASSOCIATE—Position available for an electrophysiologist to characterize the properties of central axons which have regenerated along peripheral nerve implants. Preference given to applicants experienced in spinal cord physiology and/or tract-tracing, and histological techniques. Please send curriculum vitae with names of three references to: **Dr. Julia K. Terzis, Microsurgical Research Center, Eastern Virginia Medical School, 700 Olney Road, Norfolk, VA 23507.**

POSTDOCTORAL RESEARCH ASSOCIATE POSITION for study of neuroleukin [*Science* 234, 566–574 and 574–581 (1986)]. Possible projects include (i) study of neuroleukin action on neurons cultured from septum or hippocampus, (ii) study of neuroleukin effects upon cultured spinal motor neurons as well as effects on motor neuron development in vivo, (iii) mutational analysis of neuroleukin, (iv) mutational analysis of human immunodeficiency virus sequence homology to neuroleukin and study of AIDS dementia, (v) characterization of neuroleukin receptor on neurons and/or lymphocytes and interaction of GP120 with the receptor for neuroleukin. Send curriculum vitae and names of three references to: **Mark Gurney, Department of Pharmacology and Physiology Sciences, University of Chicago, 947 East 58th Street, Chicago, IL 60637. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE. A position is available for an individual having recent training and experience in cell physiology, pharmacology, or biochemistry to investigate mechanisms of oxidant-induced changes in pulmonary endothelial cell membrane structure and function. Studies emphasize the relationships between alterations in membrane fluidity, lipid composition, and surface receptor function as well as the role of vitamin E in stabilizing membrane structure and function. Training in lipid biochemistry is desirable. Applicant should submit curriculum vitae and names of three references to: **Dr. J. M. Patel, Division of Pulmonary Medicine, Health Center Box J-225, University of Florida, Gainesville, FL 32610. Telephone: 904-392-0878.**

POSTDOCTORAL RESEARCH IN CLINICAL NEUROBIOLOGY

Several postdoctoral positions (Ph.D., M.D., or M.D./Ph.D.) have become available through a PEW Foundation grant established to develop a program in clinical psychobiology at the University of California, Irvine. The goal of this program is to provide opportunities for young investigators to develop careers in research that bridge the basic and clinical aspects of neurobiology. Research will focus on the neurobiology of cognition and its restoration after injury in animal models and man, particularly as relating to development, aging, and associated disorders. The program is multidisciplinary, emphasizing the use of olfactory stimuli to study developmental vs. age-related plasticity mechanisms in associated cortical and hippocampal circuitries. Projects include NMDA receptors and synaptic plasticity, electrophysiological studies on cortical and hippocampal circuits, computer simulations of these networks and synaptic mechanisms, behavioral experiments and neuropsychological and clinical studies in man. The clinical psychobiology program is under the direction of **Drs. Carl Cotman, Ira Lott, and Gary Lynch.** The positions are available immediately. Interested applicants should submit their curriculum vitae and the names of three references to:

Dr. Carl Cotman
Program in Clinical Psychobiology
Department of Neurology
California College of Medicine
144 Med Surge I
University of California
Irvine, CA 92717

An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately to participate in studies on the genetic regulation of cytokinin metabolism in food legumes. Ph.D. in molecular biology, genetics or biochemistry is required. Experience in enzymology and recombinant DNA techniques is desirable. Salary range: \$23,000 to \$25,000. Application deadline 15 October 1987. Submit résumé, research interest, transcripts, and four letters of recommendation to: **Dr. David W. S. Mok, Department of Horticulture, Oregon State University, Corvallis, OR 97331-2911. Telephone: 503-754-3695. OSU is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH POSITION

A postdoctoral research position in cell physiology is available 1 October 1987 to study the regulation of secretion in cultured epithelium. Send curriculum vitae and names of three references to: **M. C. Neville, Professor of Physiology, Box C240, University of Colorado School of Medicine, Denver, CO 80262.**

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

POSTDOCTORAL RESEARCH POSITION is available in diabetes-related research concerned with insulin action and phospholipid metabolism. Contact: **Robert V. Farese, M.D., Associate Chief of Staff for Research & Development (151), James A. Haley Veterans Hospital, 13000 Bruce B Downs Blvd., Tampa, FL 33612. Telephone: 813-972-7563.**

PROFESSOR OF BIOCHEMISTRY UNIVERSITY OF GENEVA FACULTY OF SCIENCES

Full-time position newly opened for a scientist capable of directing a strong research program in biochemistry. Various research domains will be considered, such as structure and function of macromolecules, including physical and chemical approaches to biochemistry. Teaching at undergraduate and graduate levels will be required. The language of instruction is French, but a period of adjustment can be granted. The position is available January 1989, negotiable. Applications should be sent by 31 December 1987 to: **Secrétariat de la Faculté des Sciences, Université de Genève, 20, quai Ernest-Ansermet, CH-1211 GENEVA 4, Switzerland, where inquiries also can be addressed.**

PROGRAM DIRECTOR, MALARIA IMMUNITY AND VACCINATION RESEARCH. Position available immediately for a research administrator with exceptional experience and credentials in Preventive Medicine. This person will be responsible for all aspects of research/clinical/field trials of malaria vaccine candidates, including the supervision of technical, program, and administrative support staff. Maintains professional liaison with AID, WHO, PAHO, FDA, and others. Field experience with human malaria required. Training in epidemiology with extensive medical research and development management experience expected. International professional standing with experience in overseas operations and vaccine development desired. Send complete curriculum vitae, present compensation and names of three references to: **PD MIVR, Box 27417, Washington, DC 20038.**

RESEARCH AND ANIMAL FACILITIES MANAGER: Long Island Jewish Medical Center is seeking a qualified individual to manage and provide leadership in supervising and developing core research laboratory. Candidate should possess a strong background in research involving vertebrate animal models and research methodologies. This position carries major responsibility for administering the medical center's research facilities including direct oversight of the animal research facility. Proven supervisory ability, knowledge of government regulations relating to research facilities and research protocols. Minimum M.S. degree required plus 3 years of progressively responsible relevant work experience. Excellent compensation package. All interested candidates should send curriculum vitae to: **Elaine Murtha, Employment Manager, Department RA, LONG ISLAND JEWISH MEDICAL CENTER, New Hyde Park, NY 11042. Equal Opportunity Employer.**

POSITIONS OPEN

RADIATION ONCOLOGIST

Columbia University College of Physicians and Surgeons invites applications for faculty positions at the associate professor level. Responsibilities include patient care, teaching, and research.

Requirements: New York State medical license and Board certification in therapeutic radiology, narcotics license desirable. Send curriculum vitae to: **James D. Cox, M.D., Radiation Oncology, 622 West 168th Street, New York, NY 10032. Columbia University is an Affirmative Action/Equal Opportunity Employer.**

Applications are being accepted from candidates with a Ph.D. in Biochemistry with at least 8 years of postdoctoral experience in neurochemistry and neuropharmacology. Experience must include analytical methods, including HPLC and GC/MS, receptor biochemistry in primary tissue cultures including molecular mechanisms of signal transduction, and versatility in behavioral testing and neurosurgery.

The position is located at Georgetown University Medical School (FGIN), it is a faculty appointment as a **RESEARCH ASSISTANT PROFESSOR** (not tenure track) in the Department of Biochemistry, with a salary of \$32,000 per year.

If interested, please send résumé to: **Director, FGIN, 3900 Reservoir Road, NW, Washington, DC 20007.**

RESEARCH ASSISTANT PROFESSOR position available in the Department of Biochemistry and Biophysics to work on instrumentation and software development for in vivo NMR spectroscopy. Applicant must have strong electronics engineering and computer programming background and a Ph.D. in electronics engineering or biophysics, with strong related skills. Candidates should forward curriculum vitae and arrange for three letters of reference to be sent to: **Dr. Franz Matschinsky, Chairman, Department of Biochemistry and Biophysics, University of Pennsylvania School of Medicine, Philadelphia, PA 19104-6059. Equal Opportunity/Affirmative Action Employer. Minority and women candidates are encouraged to apply. Applications must be submitted by 30 October 1987.**

U.S. Environmental Protection Agency, Environmental Research Laboratory, Narragansett, Rhode Island is seeking applicants to fill three of the following 2-year TERM positions to accomplish multidisciplinary research in the areas indicated. Salary range GS-11 \$27,172 to \$35,326 and GS-12 is \$32,567 to \$42,341

1) **RESEARCH ANALYTICAL CHEMIST, GS-12,** analyze complex matrices for organic pollutants by GC/MS and characterize chemical effects through structure-activity relationships.

2) **RESEARCH PHYSICAL OCEANOGRAPHER, GS-11,** develop and apply deterministic and probabilistic models for describing transport, transformation and fate of pollutants in marine environments.

3) **RESEARCH PHYSIOLOGIST (MARINE INVERTEBRATE), GS-11,** develop methods for demonstrating physiological condition of marine invertebrates exposed to pollutants in the marine environment.

4) **RESEARCH BENTHIC ECOLOGIST, GS-11,** characterize the structural and functional changes in marine benthic communities perturbed by anthropogenic materials and activities.

5) **RESEARCH TOXICOLOGIST/PHARMACOLOGIST, GS-11,** identify and characterize metabolic events and processes associated with chemically-induced toxicological responses in marine organisms.

6) **RESEARCH MARINE PLANT PHYSIOLOGIST, GS-12,** develop methods for interpreting the effects of chemicals, complex wastes and nutrients on aquatic plants.

7) **RESEARCH ECOLOGIST (BENTHIC), GS-12,** develop methods to assess the toxicity of sediment associated pollutants to marine organisms for establishment of sediment quality criteria.

We are working with three Office of Personnel Management (OPM) to fill these positions; call the appropriate OPM office and leave your name, address, and title of position you are interested in. OPM will then mail you an application package. For positions 1 and 2 call the **OPM Boston at 617-223-2571.** For positions 3, 4, 5, 6 call the **OPM Hartford at 203-722-3096.** For position 7 write to **OPM Seattle, 915 Second Avenue, Seattle, WA 98174.** Applicants must be U.S. citizens. *The U.S. Environmental Protection Agency is an Equal Opportunity Employer.*

Biotechnology Research and Development

Pandex, a division of Baxter Healthcare Corporation, is developing state of the art products for medical diagnostics.

We are expanding our R&D group and offer unique opportunities for creative Ph.D. level Scientists interested in positions that offer challenging opportunities for professional career growth.

We are seeking the following key individuals:

Nucleic Acid Chemist - Ph.D. with 0-3 years postdoctoral experience in DNA/RNA synthesis.

Molecular Biologist - Ph.D. with 2-3 years postdoctoral experience in DNA cloning and synthesis of DNA probes.

Assay Development Scientists - Ph.D. with 3-5 years postdoctoral or industrial experience in immunology, virology or microbiology with knowledge of immunoassay techniques.

Virologist - Ph.D. with 0-3 years postdoctoral experience or equivalent in retrovirology.

Microbiologist - Ph.D. with 0-3 years postdoctoral experience in the area of STD's.

As a division of a multi-billion dollar leader in the healthcare industry with research facilities located 30 miles north of Chicago, we offer a competitive starting salary and an excellent benefits program.

If you would like to be considered, please send your resume in confidence to: Anne McNicholl, Personnel Director, Baxter Healthcare Corporation, Pandex Division, 909 Orchard Street, Mundelein, IL 60060. We are an equal opportunity employer.

Pandex Division

Baxter

PROGRAM MANAGER

OCEAN TECHNOLOGY

The Office of Naval Research is seeking a highly qualified individual to plan and manage the contract basic research program in Ocean Technology. The research is conducted primarily at universities and oceanographic institutions. This is a Civil Service position at the GM-13/14/15 levels (\$38,727-\$69,976), depending on qualifications.

The incumbent will establish goals, initiate, organize, direct, and market research programs in unexplored areas involving fundamental concepts in the field of ocean engineering, primarily, and oceanographic sensing, secondarily. The ultimate goal is to determine and understand constraints which the marine environment places on the ability of the Navy to accomplish its offshore and nearshore work and sensing missions. Research will be directed to complex multi-disciplinary problems involving all aspects of working on and in the sea.

Applicants must have a Ph.D. or equivalent in an engineering or applied physics discipline related to ocean technology and at least one year of professional experience, or have acquired a minimum of three years of progressively responsible professional experience. A background including the following is preferred: (1) basic research experience, (2) an outstanding research publication record, (3) significant management experience in directing/executing research, (4) knowledge of one or more of the following areas: fluid-structure interaction, ocean or harbor structures, naval architecture, undersea work systems and vehicles, submarine cables, and oceanographic instrumentation and (5) the ability to manage interdisciplinary engineering research projects.

To apply send a Standard Form 171, Application for Federal Employment, (available at Federal Job Information Centers or from the address below), and a list of publications to:

OFFICE OF THE CHIEF OF NAVAL RESEARCH

Civilian Personnel Division, Code 01242P, Attn: Announcement #87-93 (S)
800 North Quincy Street, Arlington, VA 22217-5000

Applications will be accepted through 6 November 1987 and must be received by that date. Applicants are requested to complete the appropriate supplemental forms. For further information and supplemental forms, please call (202) 696-4705.

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POSITIONS OPEN

RESEARCH ASSOCIATE/POSTDOCTORAL FELLOW: Opportunity to join laboratory investigating catecholamine neuronal plasticity and catecholamine receptors in vivo using biochemical and anatomical approaches. Preference will be given to applicants with some experience in EM, immunocytochemistry, and/or radioimmunoassay. M.D. or Ph.D. in anatomy, biochemistry, or pharmacology. Position and salary based on experience. Please send curriculum vitae to: **Dr. James N. Davis, Box 2900, Duke University Medical Center, Durham, NC 27710. Affirmative Action/Equal Opportunity Employer.**

RESEARCH ASSOCIATE/POSTDOCTORAL POSITION: available immediately for an immunoelectron microscopist. Experience with immunogold methods, and isolation and characterization of antibodies, highly desirable. Projects involve localization of spectrin analogs in neural/non-neural tissues. Send curriculum vitae and names of three references to: **Dr. Ian S. Zagon, Department of Anatomy, M. S. Hershey Medical Center, P.O. Box 850, The Pennsylvania State University, Hershey, PA 17033. Deadline for applications is 1 January 1988. Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATES

Seek two 12-month nontenure leading research associates (postdoctoral fellows). Responsibilities include the investigation of the biology, biochemistry, and molecular biology of viruses that infect a unicellular, eukaryotic *Chlorella*-like green alga. Investigations will include the viral infection process, viral replication, and viral gene expression. Experience with recombinant DNA techniques is highly desirable. Available November 1987 or sooner. Salary \$20,500 per year. Remit application letter including résumé, transcripts, and three letters of reference by 1 October to: **Dr. James L. Van Etten, Department of Plant Pathology, IANR, University of Nebraska-Lincoln, Lincoln, NE 68583-0722.**

Affirmative Action/Equal Opportunity Employer

POSITIONS OPEN

RESEARCH ASSOCIATE

Permanent position, section head, hard work, at University Hospital. (Immu)histochemist with strong background in biochemistry and mammalian cell culturing. Doctorate and bench work experience required. Original work on aspects of membrane glycoconjugate interactions of living human carcinoma cells. Outstanding salary and excellent benefits. Send curriculum vitae, details of bench work expertise and bibliography to: **Dr. G. F. Springer, Director, Immunochemistry Research, Evanston Hospital, 2650 Ridge Avenue, Evanston, IL 60201.**

Equal Opportunity Employer M/F

RESEARCH ASSOCIATE position available immediately for biological oceanographic studies of polar regions, with emphasis on phytoplankton rate processes. Ph.D., previous field work in polar regions, and experience in stable isotopes required. Salary negotiable. Send curriculum vitae and names of three references by 12 October 1987 to: **Dr. Walker Smith, Ecology Program, University of Tennessee, Knoxville, TN 37996.**

UTK is an Equal Employment Opportunity/Title IX Section 504 Employer.

RESEARCH ASSOCIATE, 40 hours per week, 9:00 a.m. to 5:00 p.m., Salary \$23,000 per year. Duties include: planning, designing, performing, and analyzing the data of psychoimmunological studies in natural killer cells and immunomodulation research and polyclonal B cell activation, specifically in AIDS risk groups. Processing of surgical specimens and measuring their immunoreactivity. Handling and using radioisotopes to measure natural killer cells cytotoxicity. Use of flow cytometry analysis with monoclonal antibodies to distinguish lymphocyte surface markers. Performing blastogenesis to determine whether an immune system is functioning. M.D. or M.S. degree in immunology required as well as 1 year of experience in immunological research including polyclonal B cell activation and work with natural killer cells. Send résumés to: **Job Service of Florida, 701 S.W. 27th Avenue, Room 15, Miami, FL 33136. Ref: Job Order #Fl. 4539818**

POSITIONS OPEN

RESEARCH ASSOCIATE POSITIONS available immediately for work on enzyme purification or drug metabolism or blood flow studies. Salary commensurate with experience. Ph.D. required. Send résumé with list of references to: **Dr. J. L. Way, Department of Medical Pharmacology, Texas A&M University, Medical Sciences Building, College Station, TX 77843. An Equal Opportunity/Affirmative Action Institution.**

PROTEIN DESIGN LABS RESEARCH SCIENTISTS AND ASSISTANTS

We are a new company that is combining techniques from molecular biology, immunology, and protein chemistry to develop novel therapeutics for the treatment of human disease. Additional colleagues with proven research records are needed in these fields. We have strong financial backing, an excellent location near Stanford University, and a core group of outstanding scientists and scientific advisors. We can offer competitive compensation and an opportunity to do challenging science.

Send curriculum vitae and list of references to: **Dr. Laurence Korn or Dr. Cary Queen, Protein Design Labs, 3181 Porter Drive, Palo Alto, CA 94304. Equal Opportunity Employer.**

Biotherapeutics Inc., a health care service company, contracts with suitable cancer patients to perform laboratory research services designed to develop custom-tailored biotherapeutic options. The following position is available in Franklin, TN:

RESEARCH TECHNICIAN LYMPHOKINE/CYTOKINE SECTION

Strong background in Immunology required. Research experience in centrifugal elutriation desirable. Successful applicant should have significant experience in tissue culture, microscopy techniques, and general biochemistry and immunology assay methodologies.

Send curriculum vitae with salary history to:

**Personnel Department
357 Riverside Drive
P.O. Box 1676
Franklin, TN 37065-1676**

Cell Biology Research

The Upjohn Company, a world leader in the research and development of pharmaceuticals, has several Associate positions available in Cell Biology Research. Knowledge and experience in protein purification, tissue culture, and/or hybridoma technology are highly desirable. Familiarity with the role of protein kinase C in cell growth and differentiation would be a plus. A BS degree in Cell Biology, Microbiology, Biochemistry or related science with several years of relevant experience is necessary, or an MS degree in a related science and solid academic achievement. Candidates should have a demonstrated ability to work independently in basic research and support roles, and will be expected to make intellectual contributions.

Kalamazoo is located in Southwestern Michigan midway between Chicago and Detroit and offers varied cultural events, cosmopolitan shopping and entertainment, lakes and woodlands minutes away, abundant year-round sports and recreation. Upjohn offers advancement opportunities, a highly competitive salary commensurate with experience, comprehensive benefits and relocation assistance. For confidential consideration, please call from outside of Michigan toll free 1/800/253-8600, ext. 3-6767, (inside Michigan call collect 616/323-6767) to request an employment application be sent to you immediately. Please refer to ad number 21910-A when calling. We are an Equal Opportunity Employer M/F.

Upjohn

Our commitment to scientific excellence continues...

SYRACUSE UNIVERSITY

CHAIRPERSON DEPARTMENT OF BIOLOGY

Syracuse University is embarking on a major program of growth and development in Biology. Substantial increases in the number of faculty and in the quality and extent of research facilities and support will occur during the next five years. We seek applications and nominations of candidates for the position of chairperson to lead this program.

Candidates must have distinguished records and currently active programs in research, strong qualities of leadership, and demonstrated administrative skills. Women and members of minority groups are encouraged to apply. Applications received by November 1, 1987, will receive full consideration. The appointment is to take effect July 1, 1988, if possible.

Syracuse University is a major private research university with an enrollment in excess of 16,000 students in its 13 colleges. The Biology faculty of 26 conduct research and supervise Ph.D. candidates in diverse areas including Biochemistry, Population Biology, Genetics, and Cell and Molecular Biology. Faculty at the adjacent campuses of the State University of New York Health Sciences Center and the College of Environmental Science and Forestry contribute additional strength in these areas.

Interested applicants should send a curriculum vitae to:

**Dr. Philip B. Dunham
Search Committee Chair
Department of Biology
Syracuse University
Syracuse, New York 13244-1220**

Opportunities In Biomedical Mass Spectrometry

The research mass spectrometry (MS) facility at Smith Kline and French Laboratories is seeking two innovative, productive and highly motivated individuals to join a team of scientists using MS in conjunction with chemical, biochemical and chromatographic techniques to define the structures of pharmaceuticals of natural, synthetic and recombinant origin.

ASSOCIATE SENIOR INVESTIGATOR

The successful candidate must have a Ph.D. or equivalent experience in a chemical or biochemical discipline with extensive hands-on experience in modern methods of MS analysis and data interpretation. The principal duties include operation and maintenance of mass spectrometers and associated chromatographic interfaces, interpretation of MS data for research chemists and biochemists and writing reports for inclusion in research studies, IND's and NDA's. This individual is also expected to implement new MS techniques and to participate in ongoing research activities in the MS group. Greatest consideration will be given to candidates with experience in capillary GCMS, CI and desorptive ionization techniques (e.g., DCI and FAB). Experience in microchemical derivatization and HPLC is also highly desirable.

SENIOR CHEMIST/BIOCHEMIST

The successful candidate will have a Bachelor's or Master's degree in Chemistry or Biochemistry. Experience in one or more of the following areas is highly desirable: protein and/or carbohydrate biochemistry, HPLC, mass spectrometry and data interpretation. The principal duties include chemical, biochemical and chromatographic manipulations of proteins prior to microsequencing and analysis of facility samples by MS.

Our facilities include the latest in computerized high mass range sector, quadrupole and tandem MS instrumentation integrated with a broad range of separation and ionization techniques. The laboratories are also fully equipped for micro-manipulation and structural characterization of proteins and glycoconjugates. The mass spectrometry laboratories are located in our new consolidated R&D campus near Valley Forge, Pennsylvania. We offer an excellent compensation, benefits and relocation package as well as opportunities for personal and professional growth. Publication of research results is encouraged and supported. For confidential consideration, please send your C.V. to Robert F. Obst, R0093, Smith Kline & French Laboratories, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an Equal Opportunity Employer, M/F/H/V.

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Research the competition.

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Syntex, a leading pharmaceutical research and manufacturing organization, currently has the following positions available:

Cardiovascular Pharmacologist

You will contribute to the design of research projects and carry out independent assignments for the development of cardiovascular drugs. The position requires a PhD in Cardiovascular Physiology or Pharmacology and 1-3 years' postdoctoral experience. Candidates must possess knowledge of modern techniques for functional evaluation of the cardiovascular system. Familiarity with personal computers is preferred.

Postdoctoral Fellow Pharmacologist

You will study the effects of potential therapeutic agents on cardiovascular and renal function. The project will include both acute and chronic studies using several experimental models. The position requires a PhD in Pharmacology or Physiology with specialized coursework in renal and cardiovascular pharmacology.

Enzyme Biochemist

You will study the mechanism of action of antiviral compounds including the application of biochemical principle to discover leads for related research. The position requires a PhD in Biochemistry with coursework in

enzymology and 0-3 years' relevant experience which must include experience in enzyme purification and mechanistic study. Candidates must possess familiarity with HPLC, ultracentrifuge, scintillation counters and electrophoresis.

If you have good interpersonal and communication skills and want to belong to a dynamic, innovative research team, apply for one of these positions by sending your resume to: Syntex Corporation, Professional Staffing, Dept. PS/S, 3401 Hillview Avenue, Palo Alto, CA 94304. An equal opportunity employer.



Graduate and Postdoctoral Biotechnology Fellowships

Iowa has committed nearly \$50 million in the last two years to strengthen an effective program of agricultural biotechnology at Iowa State University. Interdisciplinary research teams are addressing opportunities in basic molecular biology and its applications to agricultural development, including plant, animal, and bioprocessing research.

ISU invites applications for graduate and postdoctoral fellowships in its interdisciplinary program of agricultural biotechnology. Graduate stipends are \$15,000 per year. Postdoctoral salaries are \$22,000-\$26,000, plus an additional 21.7% in fringe benefits paid by the university.

Graduate and postdoctoral fellows will be a part of active and stimulating research programs; will use state-of-the-art instrumentation for nucleic acid, protein, cell, and fermentation research; and will interact with international leaders in biotechnology research through seminars, symposia, and workshops.

For research project descriptions and fellowship application forms, contact the Office of Biotechnology, 1301 Agronomy, Iowa State University, Ames, Iowa 50011. Closing date: January 1, 1988, or until positions are filled.

Iowa State University is an Equal Opportunity Employer. Women, minorities, and members of other protected groups are strongly encouraged to apply.

IOWA STATE UNIVERSITY
Ames, Iowa

BIOLOGIST

The Energy Conversion and Utilization Technologies (ECUT) Program of the Office of Energy Utilization Research in the U.S. Department of Energy (DOE) has an immediate opening for a Biologist. Experience is desired in research relevant to the energy efficient biocatalyzed conversion of feedstocks to chemicals and fuels. Applicants must possess a bachelor's or higher degree in biological sciences, agriculture, natural resources management, or allied disciplines pertinent to the position being filled. A Ph.D. degree is desirable in one of the biotechnology related disciplines such as Bioprocess Engineering, Fermentation Technology, Microbiology, Molecular Biology, Enzymology, Biochemistry or Quantum Biology. Applicants must also have at least three years of additional experience in some aspect of biotechnology R&D. The appointment is a permanent full time position at the GS-14 level, \$45,763 to \$59,488 per year depending upon education and experience.

Duties: The incumbent will be responsible for planning and managing an applied biotechnology research program of national scope which includes activities such as the design of (bio) catalysts, genetic engineering of high-productivity microorganisms and research on innovative bioreactor/separation concepts. Program implementation is accomplished through field organizations such as government laboratories, university grants or competitively selected industrial contracts.

Interested persons should submit a Standard Form 171 "Application for Federal Employment" (available at Federal Job Information Centers or from the address below) to:

Department of Energy
Office of Personnel, MA-205.2
Attn: Vacancy Announcement 87-CE-077
1000 Independence Ave., S.W.
Washington, D.C. 20585

For further information contact Jeffrey Dowell on 202-586-8563.

Applications must be received by the above office on or before October 31, 1987, in order to be considered. DOE is an equal opportunity employer and qualified women and minorities are encouraged to apply. United States Citizenship is required for employment in the Federal Government.

CYTOGENETICIST

The Cytogenetics Department of SmithKline Bio-Science Laboratories has an opening for a service oriented ABMC eligible or certified clinical cytogeneticist. The responsibilities of this position include karyotype interpretation and supervision of quality control, workflow, and personnel in a high volume laboratory that specializes in postnatal and hematological cytogenetics. Address resume to Susan Gates, Personnel Department, SmithKline Bio-Science Laboratories, 7600 Tyrone Avenue, Van Nuys, CA 91405.

SKBL



**SmithKline
Bio-Science
Laboratories**

Equal Opportunity Employer

Research Triangle Universities Plant Molecular Biology

Graduate and Postdoctoral Fellowships

Duke University, North Carolina State University, and the University of North Carolina at Chapel Hill formed a Consortium in 1983 to advance studies in molecular biology of green plants and other photosynthetic organisms. With support from RJR Nabisco, CIBA-GEIGY and the North Carolina Biotechnology Center, the Consortium will provide a limited number of graduate and postdoctoral fellowships in 1988 for study and research in plant molecular biology at the three Triangle universities. Candidates must be U.S. citizens. Each fellow must be based in a plant molecular biology laboratory at one of the universities, but will participate in activities involving faculty and students at all three institutions. The goal of the Consortium is to enhance the community of plant molecular biologists among universities and participating companies.

The graduate student stipend is \$10,000 plus tuition, with an allowance for supplies and travel. The award is renewable for an additional two years. The postdoctoral stipend is \$21,500, subject to university policies, with an allowance for supplies and travel. The postdoctoral award is renewable for an additional year.

Predoctoral candidates must apply directly to the departments and graduate schools of their choice. In addition, applicants must send copies of each application directly to the North Carolina Biotechnology Center, including 1) a brief statement of research and career interests, 2) copies of all transcripts and 3) copies of GRE scores. Applicants should also arrange to have copies of three letters of recommendation sent directly to the North Carolina Biotechnology Center. All materials are due by February 1. Acceptance at one or more of the three universities is a prerequisite of the Fellowship Program.

Postdoctoral applications must be submitted by February 1 and should follow the format of NIH postdoctoral applications, complete with detailed research plan, and three letters of recommendation. Postdoctoral candidates must identify a suitable faculty sponsor at one of the three universities and develop a mutually acceptable research program with that sponsor. The applicant is responsible for the sponsor's submission of a statement to the North Carolina Biotechnology Center of what the sponsor will commit to the program.

All materials for both predoctoral and postdoctoral applications must be received at the North Carolina Biotechnology Center by February 1, 1987. Award announcements will be made by March 15, 1987.



North Carolina Biotechnology Center
P.O. Box 13547
Research Triangle Park, NC 27709-3547

It's What Made You Become A Scientist In The First Place.

The opportunity to do important research — work that really makes a difference. And at Cetus, you'll have that opportunity, because we're committed to pioneering work in pharmaceuticals and biotechnology. We offer you the resources to do that work — in a stimulating environment with the support of other dedicated, knowledgeable professionals. We currently seek a specialist in:

Autoimmunity Research

You may be involved in establishing relevant in vitro and/or in vivo models to investigate the cellular interactions of chronic synovitis in rheumatoid arthritis or allied chronic inflammatory responses.

A background in examining the mechanism of pannus formation as well as cartilage and bone destruction is desirable.

Alternately, you may establish relevant animal models for autoimmune diseases. In this case, your background should include working with spontaneous and antigen-induced models.

You should possess a PhD/MD/DVM and at least 2 to 3 years of relevant experience for either function.

Please send resume in confidence to:

Cetus Corporation
Box IBS2
1400 Fifty-Third Street
Emeryville, CA 94608

We are an equal opportunity/
affirmative action employer.



Manager of Clinical Research

At Cetus Corporation, we are accelerating our progress towards building a fully integrated, international pharmaceutical company. And we seek a Manager of Clinical Research to help optimize our success.

You will be responsible for coordinating the overall planning and execution of clinical trials. Additionally, you will facilitate the generation and quality assurance of all clinical reports used for FDA submission. This will include auditing raw data and reviewing/editing documents to meet FDA submission standards.

You should possess a BS/MS and at least 8 years experience in clinical/pre-clinical research coordination or project management within a pharmaceutical environment. This experience should include demonstrated technical writing and project coordination skills.

Please send your resume in confidence to:

Cetus Corporation
Box BIS
1400 Fifty-Third Street
Emeryville, CA 94608

We are an equal opportunity/
affirmative action employer.



Research Associates Protein Biochemistry

Genentech, Inc., a leader in the field of biotechnology, has openings for Research Associates to be responsible for isolation and characterization of natural product proteins and peptides.

Positions require an MS and 2 years' lab experience or a BS and 4 years' lab experience in biochemistry, physical chemistry, or related field. Experience in chromatography, HPLC and micro-analytical characterization techniques are also necessary. Purification of biologically active peptides or proteins and familiarity with biochemical assays is preferred.

Genentech, Inc. offers excellent salaries and benefits. Please send resume to: Genentech, Inc., Dept. SW2117, 460 Point San Bruno Blvd., South San Francisco, CA 94080. An equal opportunity employer.

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POSITIONS OPEN

SYSTEMATIC ENTOMOLOGIST

The Department of Ecology and Evolutionary Biology at the University of Connecticut seeks a systematic entomologist with research interest in evolutionary biology for a tenure-track assistant professorship. The position will begin in September 1988. Teaching responsibilities include a course in a specialty area and participation in the introductory biology program. Candidates are expected to show distinction in research. Send by 1 December 1987 a letter explaining background and research plans as well as curriculum vitae, reprints, and three letters of recommendation to: **Dr. Gregory J. Anderson, Chairman, Search Committee, c/o Ms. Burma Stelmak, The University of Connecticut, 75 North Eagleville Road, Room 312, U-43, Storrs, CT 06268.** We are an Affirmative Action/Equal Opportunity Employer, M/F. (Search #8A101)

THE UNIVERSITY OF CONNECTICUT

TEMPORARY FACULTY POSITIONS. The Department of Biological Sciences, University of Maryland Baltimore County (UMBC) invites applications for two **VISITING ASSISTANT PROFESSOR POSITIONS** to begin 1 January 1988 for 18 months. (i) To teach a project-oriented laboratory course in recombinant DNA techniques for graduate students. (ii) To teach a graduate lab course in hybridoma preparation. Possibility for research in the open semester and summer. Successful candidates may be considered subsequently for tenure-track appointments. Applicants should have a Ph.D. and research experience in the appropriate field. Submit curriculum vitae and names of three references to: **Dr. Michael C. O'Neill, Department of Biological Sciences, UMBC, Catonsville, MD 21228.** UMBC is an Affirmative Action/Equal Opportunity Employer. Qualified minorities and women are encouraged to apply.

UNIVERSITY OF PENNSYLVANIA

TWO TENURE-TRACK POSITIONS to begin at the assistant professor level are available in the Department of Human Genetics, University of Pennsylvania. Candidates (Ph.D. or M.D.) with training in molecular biology and a record of research in genetics are urged to apply. The Department of Human Genetics is seeking to expand its research program in molecular biology, with an emphasis on development. The positions are to be filled with researchers who can develop independent programs in the areas of gene regulation, development and differentiation, oncogenesis or neuroscience. Send résumé to: **Robert L. Nussbaum, M.D., Department of Human Genetics, University of Pennsylvania, Room 196 John Morgan Building, Philadelphia, PA 19104-6072.** An Equal Opportunity/Affirmative Action Employer.

TENURE-TRACK FACULTY POSITION IN PLANETARY SCIENCES, University of Colorado, Boulder. The University of Colorado is expanding and broadening its program of research and teaching in planetary sciences. The Department of Geological Sciences and the Laboratory for Atmospheric and Space Physics invite applications for a joint tenure-track faculty position in the field of planetary sciences. We seek a scientist with a record of independent research in one or more of the following areas: (i) photogeology, morphology and dynamic process of planetary surfaces; (ii) geochemical evolution of planetary surfaces; (iii) planetary surface-atmosphere interactions. Preference will be given to candidates at the assistant professor level, but applications from candidates at a higher level will be considered. The appointment will begin August 1988. Applicants should have a strong commitment to research, to working with graduate students, and to teaching at the graduate and undergraduate levels. To apply, please send curriculum vitae and arrange to have three letters of reference to: **Chairman, Planetary Sciences Search Committee, Department of Geological Sciences, Campus Box 250, University of Colorado, Boulder, CO 80309-0250.** Salary: Commensurate with qualifications. Application deadline: 31 October 1987. Applicants are responsible for making certain that the letters of reference arrive promptly. *The University of Colorado at Boulder has a strong institutional commitment to the principle of diversity in all areas. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including women, members of ethnic minorities and disabled individuals.*

POSITIONS OPEN

SENSORY NEUROPHYSIOLOGIST: Tenure-track possibility for position available at assistant professor level. Serious commitment to collaborative work within the Microsurgical Research Center. Expertise required to characterize electrophysiologically the properties of central axons which have regenerated along peripheral nerve implants. Preference given to applicants experienced in spinal cord neurophysiology and tract-tracing and histological techniques. Please send curriculum vitae with three letters of recommendation to: **Dr. Julia Terzis, Microsurgical Research Center, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, VA 23501.**

TOXICOLOGIST

The University of Texas-Houston, School of Public Health, has an opening in a tenure-track position for assistant professor of toxicology. A Ph.D. in toxicology and/or toxicology-related sciences with research/teaching experience in general toxicology is required. Responsibilities consist of teaching toxicology courses in the M.P.H., M.S., Dr.P.H. and Ph.D. programs and conducting research in environmental and/or industrial toxicology. Applicants should send a detailed résumé before 1 November 1987 to: **Dr. E. M. Davis or Dr. E. W. Fairchild, The University of Texas, School of Public Health, P.O. Box 20186, Houston, TX 77225.**

An Equal Opportunity Employer. Women and Minorities are Encouraged to apply.

TRAINING PROGRAMS

POSTDOCTORAL POSITIONS IN MOLECULAR BIOLOGY

A diversified, interdisciplinary Training Program in Molecular Biology with more than 20 research teams with excellent research support. Areas of research include:

TUMOR VIROLOGY

MMTV and B cell differentiation
Tumor cell surface glycoproteins in mammary cancer
SV40 and adenovirus gene expression
Molecular virology of AIDS

ONCOGENES

Adenovirus and heat-shock genes
Chromosomal mapping
Effect on cell-cell communication
Developmental expression of oncogenes

GROWTH FACTORS

in muscle cell development
Polypeptide hormones
Colony-stimulating factor, granulopoiesis and cell differentiation
Interleukin-2 receptor

This 3-year program is designed for Ph.D., Ph.D./M.D. or M.D. candidates with academic-research objectives. M.D.s may enter a combined molecular biology-residency program. Highly successful candidates will be encouraged to compete for independent research support and may be considered for future faculty positions. Salaries are competitive. Open only to U.S. citizens or permanent residents. Send curriculum vitae and references to: **Dr. Carlos Goldenberg, University of Miami School of Medicine, Department of Microbiology and Immunology, P.O. Box 016960 (R138), Miami, FL 33101.** Affirmative Action/Equal Opportunity Employer.

TRAINING IN NEUROENDOCRINOLOGY

An informal group in neuroendocrinology offers postdoctoral training in the Departments of Physiology and Medicine at the University of California, San Francisco. Neuroendocrine training leading to the Ph.D. degree in endocrinology, neuroscience or physiology is also available. Research in the group is focused primarily on regulation of the renin, angiotensinogen, and ANP genes, tissue renin-angiotensin systems, and regulation of the secretion of renin, ACTH, LH, and vasopressin. Pre- and postdoctoral fellowships supported by a training grant from the National Institutes of Health (DK07265) are available and are open to qualified U.S. citizens or permanent residents of the United States. Other postdoctoral fellowships are available and often can be arranged for noncitizens. For further information write: **William F. Ganong, M.D., Department of Physiology, University of California, San Francisco, CA 94143-0444.** An Equal Opportunity Employer.

POSITIONS OPEN

TWO TENURE-TRACK FACULTY POSITIONS SCHOOL OF BASIC LIFE SCIENCES UNIVERSITY OF MISSOURI—KANSAS CITY

Applications are invited from individuals employing biochemical or biophysical methodologies, and from molecular or cellular biologists experienced in recombinant DNA technology. We seek qualified applicants across all ranks and areas of research to complement existing programs in macromolecular structure and virus assembly. Successful candidates must have demonstrated research potential through postdoctoral experience and recent publications, and are expected to maintain a vigorous research program through extramural funding and participate in training of health science professional and graduate students. Send curriculum vitae, statement of research goals, and names of three references to:

**Dr. George J. Thomas, Jr., Head
Division of Cell Biology & Biophysics
School of Basic Life Sciences
University of Missouri—Kansas City
Kansas City, MO 64110**

Screening of applicants will begin 1 November 1987 and continue until positions are filled.

UMKC is an Equal Opportunity/Affirmative Action Employer.

PROGRAM

ROBERT H. FELIX SCIENCE ASSOCIATES PROGRAM DEPARTMENT OF HEALTH AND HUMAN SERVICES PUBLIC HEALTH SERVICE ALCOHOL, DRUG ABUSE AND MENTAL HEALTH ADMINISTRATION (ADAMHA)

ADAMHA is seeking applicants for the Robert H. Felix Science Associates Program. This program will provide a limited number of basic and clinical research scientists from outside the Federal Government with the opportunity to participate in program administration or policy development for the extramural research programs in one of the three ADAMHA Institutes—National Institute on Alcohol Abuse and Alcoholism (NIAAA), National Institute on Drug Abuse (NIDA), National Institute of Mental Health (NIMH), or the ADAMHA Office of the Administrator (OA).

Positions in the program may be filled by a variety of special temporary appointments lasting from 6 months to 2 years. Persons interested in this program should contact:

**Lana R. Skirboll, Ph.D.
Office of Science, ADAMHA
Telephone: 301-443-4335**

**Eugenia Broumas
Office Director, NIMH
Telephone: 301-443-2940**

**Jean Paul Smith, Ph.D.
Office of Science, NIDA
Telephone: 301-443-0441**

**Mark Green, Ph.D.
Office of Scientific Affairs, NIAAA
Telephone: 301-443-4375**

A Science Scholars Program is available to senior scientists by invitation only.

ADAMHA is an Equal Opportunity Employer.

TRAINEESHIPS

POSTDOCTORAL TRAINEESHIP IN MATERNAL AND CHILD NUTRITION. Position is available immediately on a NIH training grant. Biomedical, epidemiological, and/or behavioral research projects can be developed on basic or applied topics that utilize animal models or human subjects living in the United States or in other countries. Applicants must be U.S. citizens or permanent residents and have completed the requirements for the doctoral degree in nutrition or other relevant field. Send curriculum vitae and names of three references to: **Dr. K. M. Rasmussen, Program Director, Savage Hall, Division of Nutritional Sciences, Cornell University, Ithaca, NY 14853-6301.** Equal Opportunity/Affirmative Action Employer.

**DIRECTOR, DIVISION OF VIRAL DISEASES
CENTERS FOR DISEASE CONTROL
ATLANTA, GEORGIA**

Applications and nominations are invited for a scientist to serve as Director, Division of Viral Diseases (DVD), Center for Infectious Diseases. This position involves responsibilities for leading one of the most diverse units at the Centers for Disease Control. The mission of the DVD is to conduct integrated epidemiologic and laboratory investigations of viral and rickettsial diseases of national and international importance. The staff of the Division comprises over 190 professional, technical, and administrative personnel, including over 60 doctoral level scientists. The facilities of the Division include laboratories and equipment for all virologic and rickettsial technologies. A new virology building to be completed in 1988 will house the most advanced maximum and high containment virus/rickettsia laboratories in the world.

This position is in the Federal Government and may be filled by a candidate appointed to the Civil Service, Commissioned Corps of the U.S. Public Health Service, or Senior Executive Service. Salary may range up to \$73,400 per year depending upon the pay system and qualifications of applicants. (Physicians may be entitled up to an additional \$10,000 allowance).

Candidates must have an earned doctoral degree (M.D., Ph.D. or equivalent) and a record of distinguished achievement in virology/viral diseases.

Interested individuals are invited to submit a curriculum vitae, list of publications, and names of 3 references to **Ms. Shariyn L. Wilkinson, Personnel Management Office, Mail Stop D01, Centers for Disease Control, Atlanta, GA 30333**, no later than October 31, 1987. Further information about the position can be obtained from Dr. Stephen A. Morse, Centers for Disease Control, Mail Stop C12, Atlanta, GA 30333, Tel. (404) 329-3222.

CDC is an equal opportunity employer. CDC provides for a smoke-free work environment.

**POSTDOCTORAL FELLOWSHIPS
THE GOLDA MEIR
FELLOWSHIP FUND**

**The Hebrew University
of Jerusalem**

JERUSALEM, ISRAEL

The Hebrew University of Jerusalem invites applicants for Postdoctoral Fellowships in Humanities, Social Sciences, Natural and Applied Sciences, Agriculture and Medicine for the 1988-89 academic year.

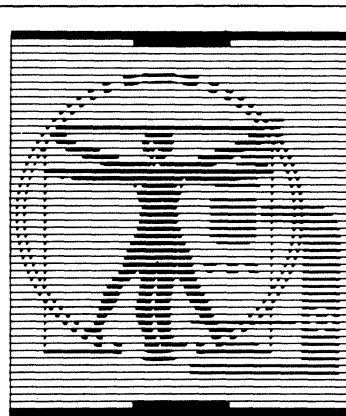
Candidates may apply at an early stage of their professional career (not later than 3 years after completion of their doctoral dissertation).

The fellowships are tenable for one academic year and may be extended for another year.

The fellowship provides a 12-month stipend (with COL adjustments), rent allowance and a return ticket to Israel.

Application forms can be obtained from the Office of University Funds, P.O. Box 1255, Jerusalem, 91904, Israel.

Completed application forms must be returned by December 1, 1987.



**MOLECULAR
BIOLOGISTS**

Program Resources, Inc. (PRI) is at the forefront of biomedical research, paving the way for new programs and discoveries at the National Cancer Institute-Frederick Cancer Research Facility, Frederick, MD. We have immediate opportunities available in the Laboratory of Cell and Molecular Structure, a multidisciplinary laboratory with programs in molecular genetics, virology, immunology, and cell biology, as well as ongoing commitments to AIDS and related retrovirus research.

STAFF SCIENTISTS

Two staff positions exist for scientists with a PhD in Molecular Biology or a related field of study and two or more years of postdoctoral experience in recombinant DNA technology. Candidates should have interests in gene structure/function and expression, and demonstrated skills in DNA sequencing, molecular cloning, restriction enzyme mapping, preparing and screening genomic and cDNA libraries, prokaryotic and eukaryotic expression vectors, and modern computational methods for DNA sequence analysis.

Responsibilities will include participating in new and ongoing research projects, and providing expertise and assistance in DNA/RNA characterization to various research teams. The abil-

ity to teach, devise suitable protocols, and function as a team member is essential.

POSTDOCTORAL SCIENTISTS

These positions require a PhD in Molecular Biology, Virology, or Biochemistry, and a strong record of achievement. Appointments are for one year, but may be considered for renewal on a yearly basis for up to three years.

Selected candidates will work with senior staff scientists in conceiving, developing, and solving a variety of research problems in contemporary virology. Emphasis will be placed on AIDS, human immunodeficiency virus, and related retrovirus (lentivirus) research. We will provide training in recombinant DNA technology in state-of-the-art labs that stress technology development. Opportunities to publish and attend meetings will be available.

RESEARCH TECHNICIANS

We are looking for individuals with a BS or MS degree in the Biological Sciences and at least one year of experience with recombinant DNA technology. Candidates must be skilled in DNA sequencing, cloning, restriction enzyme mapping, blotting, and propagating and purifying plasmids and phage.

In addition to the exciting professional challenges you'll find at PRI, we provide a competitive salary and excellent benefits, including a tax-deferred savings plan, a health and dental plan, educational assistance, a credit union, and more. Relocation assistance is available at the PhD level.

Find out what the future holds for you at NCI-FCRF. Please send your resume to: Program Resources, Inc., Personnel Department, NCI-Frederick Cancer Research Facility, P.O. Box B, Building 244, Frederick, MD 21701. An Equal Opportunity Employer, M/F.



**PROGRAM
RESOURCES, INC.**

TRAINEESHIPS

POSTDOCTORAL TRAINEE M.D./Ph.D.

To obtain 2 years in specialized training in molecular biology and cell biology related to dermatology research. Research programs include: control mechanisms of epidermal proliferation, development in human fetal skin, regulation of gene expression in human epidermis, characterization of cytokeratins and basement membrane protein in normal epidermis and those with genetic disease. Applicants must meet NRSA U.S. citizenship requirements. Available 1 November 1987. Send curriculum vitae, brief description of research interests, and names and addresses of three references to:

Lowell A. Goldsmith, M.D.
Professor and Chairman
University of Rochester
Department of Dermatology
601 Elmwood Avenue, P.O. Box 697
Rochester, NY 14642

COURSE

MOLECULAR ENDOCRINOLOGY AND TECHNIQUES FOR HORMONE ACTION 21 to 26 February 1988

This course will consist of lectures in methodology with comprehensive syllabus covering receptors, gene transcription, mRNA and protein synthesis, recombinant DNA, protein hormones, and cyclic nucleotides.

Co-directors: W. T. Schrader and B. W. O'Malley
Fee: \$365 (\$245: fellows and students)
For further information contact:

Bonnie Cuthbert
Department of Cell Biology
Houston, Texas 77030
Telephone: 713-799-6200
Deadline—29 January 1988

FELLOWSHIPS

CANCER RESEARCH POSTDOCTORAL FELLOWSHIPS—Positions available for postdoctoral research training in oncology. Ph.D. or M.D. Program areas: carcinogenesis, clinical immunology, clinical research, endocrinology, epidemiology, immunology, molecular genetics, and radiobiology. Contact: Norris Cotton Cancer Center Administration, Dartmouth-Hitchcock Medical Center, Hanover, NH 03756. *Affirmative Action/Equal Opportunity Employer.*

FELLOWSHIP THORACIC ONCOLOGY

A position is available (starting January 1988) in the Department of Thoracic Surgery and Oncology at the Roswell Park Memorial Institute, Buffalo, NY.

The core of the training will be centered around diagnosis, treatment, and research in the intrathoracic malignancies, especially lung cancer. Areas of interest include chemotherapy, immunotherapy, research in lung cancer immunology, and lung transplantation.

The fellow must have had at least 3 years of approved residency training in the U.S.

Interested candidate should contact: H. Takita, M.D., D.Sc., F.A.C.S., Chief, Department of Thoracic Surgery and Oncology, Roswell Park Memorial Institute, 666 Elm Street, Buffalo, NY 14263. Telephone: 716-845-2300.

HERBERT H. JASPER POSTDOCTORAL RESEARCH FELLOWSHIP IN NEUROSCIENCE available. Position provides 1 year's salary and use of the exceptional facilities of the Center for Research in Neurological Sciences. Recipient works closely with investigator of choice, within a large group currently studying a wide range of topics in the vertebrate nervous system. Further information and application forms available from: Fellowship Committee, Centre de recherche en sciences neurologiques, Faculté de médecine, Université de Montréal, C.P. 6128, Succ. A, Montréal, Québec, Canada H3C 3J7. Deadline: 31 December 1987.

FELLOWSHIPS

GENETIC APPROACHES TO AGING RESEARCH

Pre- and postdoctoral training positions available via faculty of pathology, genetics, biochemistry, biological structure, physiology and biophysics, neurology and medical genetics. **George M. Martin, M.D., Director.** Department of Pathology SM-30, University of Washington, Seattle, WA 98195. *Equal Opportunity/Affirmative Action Employer.*

FELLOWSHIPS IN FREE RADICAL BIOLOGY. Research opportunities in a multidisciplinary program dealing with biochemical, cellular, physiological, and clinical aspects of free radical injury to the CNS, lung, and GI system. Current research includes study of production and modulation of free radical injury in cell culture, organ, and animal models. Send curriculum vitae to: **Bruce Freeman, Ph.D., Sadis Matalon, Ph.D., or Dale Parks, Ph.D.,** Department of Anesthesiology, University of Alabama at Birmingham, Birmingham, AL 35233. Telephone: 205-934-4111.

MOUNT DESERT ISLAND BIOLOGICAL LABORATORY 1988 MARKEY SUMMER FELLOWSHIPS

The MDI Biological Laboratory, an internationally renowned research institute for comparative physiology and marine biology, offers summer research fellowships sponsored by the Lucille P. Markey Trust. Applications are invited from postdoctoral investigators in the biological/biomedical sciences who are in the early phase of their careers and have a record of productive independent research. Fellowships include laboratory space, housing and supply allowances, depending on individual needs. The MDIBL emphasizes the use of marine organisms as tools for basic and applied biological research, including pharmacology and toxicology. Applications may be obtained by contacting the office or Associate Director, **Dr. Donald A. McCrimmon**, at P.O. Box 35, Salsbury Cove, ME 04672 or telephone: 207-288-3605. Deadline for completed applications is 1 December 1987.

POSTDOCTORAL POSITION. A postdoctoral fellowship position is available immediately to study the bacterial enzyme system responsible for the reductive inactivation of digoxin and other cardiac glycosides by *Eubacterium lentum*. The project involves the use of immunoassays, hybridoma methodology, and will involve the use of molecular biology; experience in one or more of these areas would be useful. A Ph.D. degree or its equivalent is required. Send curriculum vitae and letters of reference to: **Dr. Vincent P. Butler, Jr.,** Department of Medicine, Columbia University College of Physicians & Surgeons, 630 West 168th Street, New York, NY 10032. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOWSHIP

Postdoctoral fellowship funded opening in molecular and cellular biology of human proteinase inhibitors and hepatic acute phase genes. Send curriculum vitae, including references to: **Dr. David Perlmutter, Departments of Pediatrics and Cell Biology, Washington University Medical School, 660 South Euclid, Box 8116, St. Louis, MO 63110.**

POSTDOCTORAL FELLOWSHIP, CELL BIOLOGY: one position is available to study enhancement of healing, in cell culture, using collagen-based artificial skin, in collaboration with a surgeon. Requirement: Ph.D. in cell biology. Salary \$20,000. Send résumé, three letters of recommendation, graduate transcript, and research experience to: **Dr. Semih Erhan, Director, Center for Protein Research, Albert Einstein Medical Center, York and Tabor Roads, Philadelphia, PA 19141.**

POSTDOCTORAL FELLOWSHIP RESEARCH ASSOCIATE

Studies of cell-mediated immune response to and molecular biology of HIV. Ph.D. or equivalent required. Send three letters of reference to: **Edgar G. Engleman, M.D.,** Department of Pathology-L235, Stanford University School of Medicine, Stanford, CA 94305. *Stanford is an Equal Opportunity/Affirmative Action Employer.*

FELLOWSHIPS

Available immediately **TWO M.D./Ph.D. FELLOWSHIPS IN REHABILITATION RESEARCH**, funded by National Institute on Disability and Rehabilitation Research, awarded by Department of Rehabilitation Medicine, Medical College of Virginia, Virginia Commonwealth University. Fellowships will support physiatrists in 3-year Ph.D. programs in neurobiological sciences with faculty of investigators with established research programs in pain and neural injury. Special consideration given Physical Medicine and Rehabilitation Residency/Ph.D. program candidates. Stipend is \$35,000 with cost of living increases year two and three. Send curriculum vitae and two recommendations to: **H. Stonnington, M.D., Chair, Rehabilitation Medicine, MCV Station, Box 677, MCV/VCU, Richmond, VA 23298-0677.**

THE UNIVERSITY OF SYDNEY AUSTRALIA PROFESSOR HARRY MESSEL RESEARCH FELLOWSHIPS IN PHYSICS

Applications are invited for the above postdoctoral fellowships available from January 1988 for research in physics in the University of Sydney. The following fields of research are pursued in the School of Physics: plasma physics (Tokamak, gyrotron), solar energy (thermal, photovoltaics), astrophysics (synthesis radio-telescope), astronomy (Michelson stellar interferometer), high energy physics (neutrino physics), environmental physics (radio telemetry), and theoretical physics (pertaining largely to the foregoing experimental topics). Further information may be obtained by writing to the **Head of the School of Physics.**

The annual stipend shall be within the range for University of Sydney postdoctoral research fellowships (currently A\$24,535 to A\$27,330 per annum). The fellowships are tenable for 1 year but may be renewed from year to year.

The University reserves the right not to proceed with any appointment for financial or other reasons.

Application forms or further information may be obtained from the Registrar (Scholarships Office), University of Sydney, N.S.W. 2006, Australia. Closing: 1 November 1987.

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Graduate student, pre-, post-, and senior postdoctoral fellowships in American history and material culture, anthropology, biological sciences, earth sciences, history of art, history of science and technology. Tenable in residence at the Smithsonian and its research facilities. Stipends and tenures vary.

Deadline: 15 January annually.

Contact: **Office of Fellowships and Grants, Smithsonian Institution, Desk S, L'Enfant Plaza, Suite 7300, Washington, DC 20560.** Telephone: 202-287-3271.

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LOCATIONS AND DATES

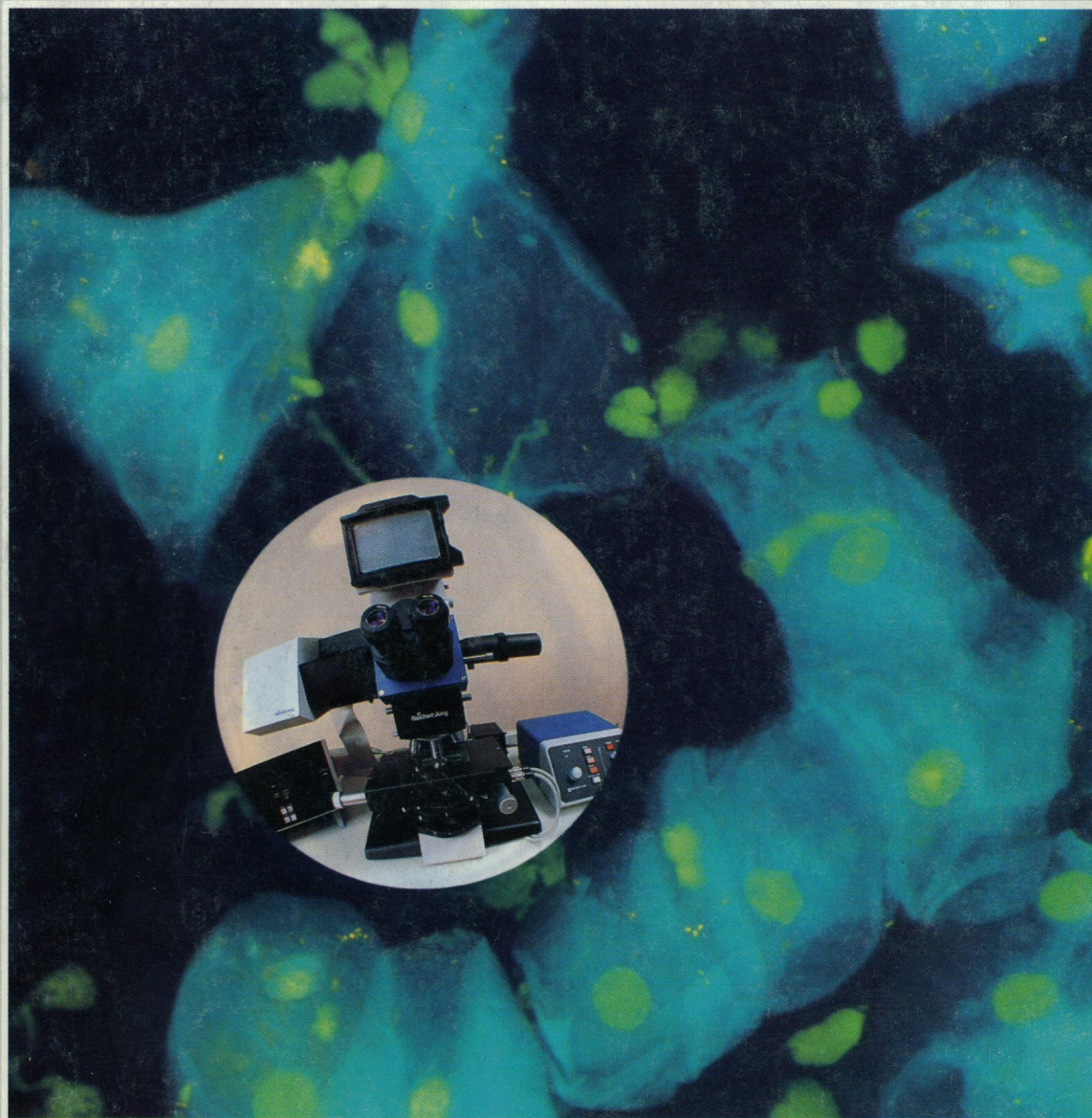
New York	Monday, September 28, 1987
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Baltimore	Tuesday, October 13, 1987
Research Triangle Park	Thursday, October 15, 1987
Houston	Tuesday, October 20, 1987
Los Angeles	Monday, October 26, 1987
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