

ite, exhibit a spectrum of structural disorder, and thus solubility, even though they have invariant compositions. Spósito uses the Gay-Lussac-Ostwald step rule to show that the composition of soil solutions can be related to this solubility spectrum. Fritz addresses the complexities that arise from the variable stoichiometry of smectites and vermiculites. Here the modeler is faced with choosing either the minimum number of independent end members with which to build a solid solution clay or the total number of structurally unique (but not stoichiometrically independent) end members. Fritz chooses the latter and, with the assumption that all the end members participate in precipitating the solid solution to the extent that their respective saturation indices increase during reaction, shows that the composition of the clay should vary during the course of reaction as well as with temperature. In a somewhat related paper later in the volume, Wilson and Nadeau demonstrate that random interstratification of illite-smectite in soils is in many cases more apparent than real, since it can be accounted for by an interparticle diffraction effect whereby the interfaces between thin randomly sedimented particles absorb ethylene glycol and therefore appear in x-ray diffraction to be a smectite component. Accordingly, from the thermodynamic point of view such clays should be treated as mixtures of two or more phases rather than as a single solid solution phase.

The three following papers present the results of recent laboratory dissolution experiments on pyroxene and olivine (Schott and Berner), albite (Wollast and Chou), and metal oxides in the presence of organic ligands (Stumm *et al.*). Each of these papers contains instructive interpretations of dissolution mechanisms and provides enlightening discussions of the importance of surface reaction relative to diffusion in controlling dissolution rates.

The middle portion of the volume contains two reviews (by Krumbein and Dyer and by Eckhardt) that emphasize the important role of organisms in weathering. Although stimulating and extensively referenced, neither paper offers any practical methodology or paradigm for evaluating the effects of organic activity on mineral dissolution under field conditions.

The final portion of the volume contains a pair of engaging papers, by Stallard and by Velbel, who attempt to relate the chemistry of streams to basin geology and geomorphology. Stallard's analysis of the Amazon Basin is based on the concept of "weathering-limited" versus "transport-limited" slopes proposed by Carson and Kirby. In transport-limited lowland sub-basins, river

chemistry roughly reflects bedrock chemistry (that is, the rock dissolves nearly congruently) even though denudation rates and total dissolved solids are low. Andean Basins on the other hand are weathering-limited, with high rates of denudation. Although high in dissolved solids, river water is relatively depleted in potassium and magnesium, reflecting incongruent dissolution and formation of cation-rich clays. Velbel shows that stream chemistry in the Coweeta Experimental Watershed (North Carolina) is controlled largely by the flushing rate of water through sparolite and by the quartz content of the bedrock.

Considering that English is not the native tongue of many of the authors, the papers are generally clearly written. However, there are occasional rough passages about which the editor might have made some tactful suggestions for improvement. The illustrations are generally adequate, and I found only a few typographic errors.

L. R. GARDNER  
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## Books Received

- Color Measurement.** Theme and Variations. D. L. MacAdam. 2nd ed. Springer-Verlag, New York, 1985. xiv, 230 pp., illus. Paper, \$29. Springer Series in Optical Sciences, vol. 27.
- Electronic Excitations in Condensed Rare Gases.** N. Schwentner, E.-E. Koch, and J. Jortner. Springer-Verlag, New York, 1985. viii, 239 pp., illus. \$34. Springer Tracts in Modern Physics, vol. 107.
- Empirical Foundations of Information and Software Science.** Jagdish C. Agrawal and Pranas Zunde. Eds. Plenum, New York, 1985. x, 415 pp., illus. \$69.50. From a symposium, Atlanta, GA, Oct. 1984.
- The EMPRINT Method.** A Guide to Reproducing Competence. Leslie Cameron-Bandler, David Gordon, and Michael Lebeau. FuturePace, San Rafael, CA, 1985. xvi, 334 pp. Paper, \$11.95.
- Endocoids.** Harbans Lal, Frank Labella, and John Lane. Eds. Liss, New York, 1985. xxiv, 541 pp. \$78. Progress in Clinical and Biological Research, vol. 192. From a symposium, Fort Worth, TX, May 1984.
- Endothelial Cell Vesicles.** F. Hammersen and D. H. Lewis. Eds. Karger, New York, 1985. x, 173 pp., illus. Paper, \$33.75. From a workshop, Oxford, Sept. 1984. Progress in Applied Microcirculation, vol. 9.
- Enzyme-Mediated Immunoassay.** T. T. Ngo and H. M. Lenhoff. Eds. Plenum, New York, 1985. viii, 489 pp., illus. \$69.50.
- Epidemiology and Quantitation of Environmental Risk in Humans from Radiation and Other Agents.** A. Castellani. Ed. Plenum, New York, 1985. x, 584 pp. \$95. NATO Advanced Science Institutes Series A, vol. 96. From an institute, San Miniato, Italy, Sept. 1984.
- Essential Oils and Aromatic Plants.** A. Baerheim Svendsen and J. J. C. Scheffer. Eds. Nijhoff/Junk, Dordrecht, 1985 (U.S. distributor, Kluwer, Hingham, MA). xiv, 246 pp., illus. \$31.50. From a symposium, Noordwijkerhout, Netherlands, July 1984.
- The Export of Hazard.** Transnational Corporations and Environmental Control Issues. Jane H. Ives. Ed. Routledge and Kegan Paul, Boston, 1985. xviii, 229 pp. \$19.95.
- Graph Theory with Applications to Algorithms and Computer Science.** Y. Alavi *et al.*, Eds. Wiley-Interscience, New York, 1985. xviii, 810 pp., illus. \$44.95. From a conference, Kalamazoo, MI, June 1984.

**Introduction to Computer Mathematics.** Russell Merris. Computer Science Press, Rockville, MD, 1985. x, 284 pp., illus. Student's text, \$27.95; teacher's edition, \$32.95. Computers and Math Series.

**Introduction to Detonation Theory.** Wildon Fickett. University of California Press, Berkeley, 1985. xvi, 249 pp., illus. \$29.95.

**Life with the Pneumococcus.** Notes from the Bedside, Laboratory, and Library. Robert Austrian. University of Pennsylvania Press, Philadelphia, 1985. xii, 168 pp. \$25.

**Linear Vibrations.** A Theoretical Treatment of Multi-Degree-of-Freedom Vibrating Systems. P. C. Müller and W. O. Schiehlen. Nijhoff, Dordrecht, Netherlands, 1985 (U.S. distributor, Kluwer, Hingham, MA). x, 327 pp., illus. \$65.50. Mechanics: Dynamical Systems. Translated by S. Swierczkowski.

**Lung Cancer.** Diagnostic Procedures and Therapeutic Management with Special Reference to Radiotherapy. Charles W. Scarantino, Ed. Springer-Verlag, New York, 1985. xii, 173 pp., illus. \$39.50. Medical Radiology.

**Macromolecules as Drugs and as Carriers for Biologically Active Materials.** David A. Tirrell, L. Guy Donaruma, and Anne B. Turek. Eds. New York Academy of Sciences, New York, 1985. x, 458 pp., illus. Paper, \$105. Annals of the New York Academy of Sciences, vol. 446. From a conference, New York, March 1984.

**Making Miracles.** In Vitro Fertilization. Nan and Todd Tilton and Gaylen Moore. Doubleday, Garden City, NY, 1985. xiv, 200 pp., illus. \$16.95.

**Manual of Radiographic Interpretation for General Practitioners.** P. E. S. Palmer *et al.* World Health Organization, Geneva, 1985 (U.S. distributor, WHO Publications Centre, Albany, NY). 216 pp., illus. Paper, \$11.50. WHO Basic Radiological System.

**Picosecond Electronics and Optoelectronics.** G. A. Mourou, D. M. Bloom, and C.-H. Lee. Eds. Springer-Verlag, New York, 1985. x, 258 pp., illus. \$29. Springer Series in Electrophysics, vol. 21. From a meeting, Lake Tahoe, NV, March 1985.

**Positive Operators.** Charalambos D. Aliprantis and Owen Burkinshaw. Academic Press, Orlando, FL, 1985. xvi, 367 pp. \$59. Pure and Applied Mathematics.

**Positron Emission Tomography.** Martin Reivich and Abbas Alavi, Eds. Liss, New York, 1985. xxii, 478 pp., illus. \$79.50.

**Practical Seismic Interpretation.** Michael E. Badley. International Human Resources Development Corporation, Boston, 1985. vi, 266 pp., illus. \$62.

**Presentations of Gender.** Robert J. Stoller. Yale University Press, New Haven, CT, 1985. xii, 219 pp. \$20.

**Preservation of Timber in the Tropics.** W. P. K. Findlay, Ed. Nijhoff/Junk, Dordrecht, Netherlands, 1985 (U.S. distributor, Kluwer, Hingham, MA). x, 273 pp., illus. \$49.50. Forestry Sciences.

**Proceedings of the Fourth World Congress on Pain.** (Seattle, 1984.) Howard L. Fields, Ronald Dubner, and Fernando Cervero, Eds. Raven, New York, 1985. xxviii, 923 pp., illus. \$139. Advances in Pain Research and Therapy, vol. 9.

**Prostaglandins, Leukotrienes, and Lipoxins.** Biochemistry, Mechanism of Action, and Clinical Applications. J. Martyn Bailey, Ed. Plenum, New York, 1985. xvi, 705 pp., illus. \$95. GWUMC Department of Biochemistry Annual Spring Symposium. From a symposium, Washington, DC, May 1984.

**Protein Transport and Secretion.** Mary-Jane Gething, Ed. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 1985. x, 215 pp., illus. Paper, \$30. From a symposium, Cold Spring Harbor, NY, Nov. 1984. Current Communications in Molecular Biology.

**Victimization in Schools.** Gary D. Gottfredson and Denise C. Gottfredson. Plenum, New York, 1985. xii, 250 pp., illus. \$29.50. Law, Society, and Policy, vol. 2.

**Vilhjalmur Stefansson and the Development of Arctic Terrestrial Science.** G. Edgar Folk, Jr., and Mary A. Folk, Eds. University of Iowa Department of Publications, Iowa City, 1984. xii, 240 pp., illus. Paper, \$15. From a symposium, Iowa City, May 1980.

**Virus Structure and Assembly.** Sherwood Casjens, Ed. Jones and Bartlett, Boston, 1985. viii, 295 pp., illus. \$45.

**The Weed Flora of Egypt.** Loutfy Boulos and M. Nabil el-Hadidi. Illustrated by Magdy el-Gohary. American University in Cairo Press, Cairo, 1985 (U.S. distributor, Columbia University Press, New York). xv, 178 pp., illus. Paper, \$12.50.

**Whitney's Star Finder.** A Field Guide to the Heavens. Charles A. Whitney. 4th ed. Knopf, New York, 1985. xiv, 107 pp., illus., + star finder. Paper, \$12.95.

## Products & Materials

### *Large-Scale Ultrasonic Liquid Processor*

The Sonicator model W-2500 processor is rated at 2500 watts continuous duty. New circuitry and a new converter design provide the intense sonic energy required for continuous flow operations. Higher pressures may be maintained in the flowing liquid to further enhance disruption, emulsification, and homogenization. The W-2500 is a step-up model to enable a laboratory to yield production quantities of treated materials. Smaller 800-, 1200-, 1600-, and 2000-watt versions are also available. Heat Systems-Ultrasonics. Circle 572.

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Unilab may serve as a clean room, isolation room, or controlled-environment chamber within a laboratory. It provides a well-lit, spacious, self-contained work area. Constructed of safety-tempered Thermopane glass and polished anodized aluminum framework, these modular units may be assembled within a laboratory. Solid walls are lightweight, chemical-resistant fiberglass. Unilabs may be custom-engineered to exact space and application requirements. They offer lighting, ventilation, and air-filtration systems or fume hood and case-work layouts. Hemco. Circle 573.

### *Gradient Formers*

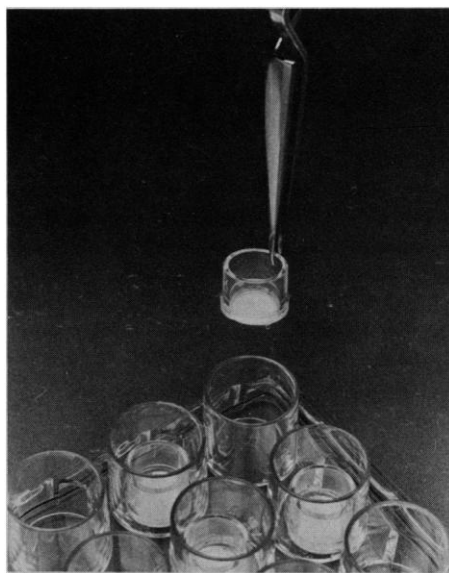
Four gradient formers are offered in 5-, 17-, 50-, and 200-ml capacities. They make continuous density gradients in less than 2 minutes. The closed system permits high-speed mixing. The dual-piston design dispenses the fluid in each chamber at an equal rate to form linear gradients independent of fluid viscosity and density. They may be used with or without a peristaltic pump to deliver flow. They are easy to set up. The 5- and 17-ml models feature a lead screw to advance the piston; this provides the accurate

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cy and control necessary for small-volume gradients. The gradient formers are useful in centrifugation, electrophoresis, and column chromatography. Jule. Circle 574.

### *Culture Plate Insert*

Millicell-HA is designed for epithelial cell culture applications where a microporous surface is required for cell attachment, growth, and differentiation. The 0.45- $\mu$ m membrane allows free diffusion of ions and macromolecules between cells and their serosal and mucosal surfaces. As a result, cells



more closely mimic in vivo structure and function. There are no surfactants to adversely affect cell growth and differentiation. Inserts are available in 12-mm and 30-mm configurations for use with standard 24-well and 6-well culture plates. They may also be used with culture dishes. They are individually packed and sterile. Millipore. Circle 571.

### *Immunoassay Washer*

Intiwash is a hand-held immunoassay washer for 96-well plates or for "strip" plates. It features visibility of the fluid path and the washing process and complete aspiration of well contents without scratching. It also offers resistance to clogging, ease of operation, and the ability to withstand repeated autoclaving. The clear amber color permits ease of viewing so that any air bubbles or obstructions that appear may be noticed and corrected for immediately. A holder supports the plate at an angle to provide a complete view during washing. Inti. Circle 569.

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### *Spectrum Analysis Probe*

The CE395 Spectroscan East Spectral Analyzer may be used with an oscilloscope or other display to yield immediate distribution of light from 375 to 725 nm. It may be used in reflection or transmission modes or directly on light sources. It measures changing and pulsed as well as continuous, constant sources. Light enters and is focused on a diffraction grating; the resulting spectrum is optically coupled to a 256-element photo diode array. The array is scanned, the signal is amplified, background is suppressed, and the signal is passed to the display. The scan rate is set at line frequency and an additional timing signal to trigger the oscilloscope is supplied through a second connector. Spectron Instrument. Circle 578.

### *Literature*

*Retention Times* features the 540/Ultrasonic trace gas analyzer, applications of the "universal" LC/FID detector for HPLC, and other articles for gas chromatographers and mass spectroscopists. Tracor Instruments Austin. Circle 579.

*Preparative Scale HPLC* is a bibliography of 351 references arranged in such categories as general topics, proteins, pharmaceutical, nucleic acids, biochemistry, natural products, and eight other headings. Price is \$10. Vorex. Circle 581.

*Reactors and Pressure Vessels* is an 88-page catalog with a selection guide for reactors, controllers, apparatus for high-temperature applications, and design specifications of new products. Parr Instrument. Circle 582.

*Lamps* presents hollow cathode and deuterium sources for Perkin-Elmer atomic absorption instruments and for ultraviolet spectrophotometers, respectively. Foxboro. Circle 583.

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## POSITIONS WANTED

**Biochemist, Entrepreneur, Ph.D.** (1969). Specialty, biotechnology. Experience in academia, industry, small business; internationally recognized. Many publications, patents, and products. Seeks position of responsibility in R&D, preferably with equity. Investment possible. Box 21, SCIENCE. X

**Biologist, Professor;** major university; teaching awards; administrator and research leader; funding \$10,600 per year; seeks undergraduate teaching: zoology, invertebrates, fishes, ecology, systematics, biometrics, and oceanography, etc. Box 13, SCIENCE. 2/7, 14

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**Bioorganic Chemist, Ph.D.** 1982. Drug metabolism, cytochrome P-450 mechanistic study, physical organic, and synthetic organic chemistry. Experience with HPLC, NMR, UV, and MS. Seeking research position in bioorganic/pharmaceutical chemistry, drug metabolism, or bioanalytical chemistry. Available immediately. Box 10, SCIENCE. X

**Bioorganic/Organic Chemist:** Ph.D. (Calcutta) 1962. Working on extraction, separation, isolations, and estimations of the major phospholipids from experimental lung-tissue samples. Enjoys writing of the chemical structures of organic molecules. Will prefer part-time research/teaching job in Manhattan. Available in May 1986. Dr. Ghosh, Apartment Number 7K, 60 East 12 Street, New York City, NY 10003. X

## POSITIONS WANTED

**Biotechnology/Business.** B.S. chemical engineering with biotechnology minor (1983), M.B.A. with finance, marketing, and operations concentrations (1986). Biotechnology research, engineering, and business experience. Seeks highly challenging position demanding innovative, analytical, and managerial talents. Box 16, SCIENCE. 2/7, 14, 21

**Freelance Photographer** seeks contracts or full-time position with field researchers, natural history museum, or expedition. Expertise in field/studio techniques, with 4x5 and 35 millimeter cameras. B.A. zoology/geology; postdoctoral B.A. in botany/ecology. Extensive research experience, SCUBA certified, mountaineering training, computer literate. Box 20, SCIENCE. 2/7, 14

**Immunologist.** Ph.D. Experienced research scientist with background in university and industrial R&D in cellular immunology, lymphokines, and hybridoma/monoclonal antibody technology. Expert tissue culturist with excellent publications and references. Seeking position in industry or academia. Box 17, SCIENCE. 2/7, 14, 21

**Immunologist/Entrepreneur.** Ph.D. Extensive research experience; immunology/immunochimistry, FDA/USDA regulatory affairs and patents. Seeks startup biotechnology company. Box 18, SCIENCE. 2/7, 14, 21

**Scientific Consultant.** Evaluation of biomedical preclinical and clinical studies for the pharmaceutical industry. Litigation support. Patent documentations. FDA applications. Biotechnology ventures. International experience. Foreign languages. Box 19, SCIENCE. 2/7, 21; 3/7

## POSITIONS OPEN

**ASSISTANT/ASSOCIATE PROFESSORS.** Applications are being accepted for two tenure-track positions available 1 July 1986. Applicants should possess a Ph.D. degree in physiology or pharmacology with previous teaching experience. Physiologist to teach muscle and neurophysiology to first-year medical students. Pharmacologist to teach core and systems pharmacology to first- and second-year medical students. Research is encouraged. Salary is competitive and commensurate with experience. Send curriculum vitae and names of three references by 1 April 1986 to: Dr. G. H. Nelson, Chairman, Physiology/Pharmacology Search Committee, College of Osteopathic Medicine of the Pacific, College Plaza, Pomona, CA 91766.

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**ASSISTANT PROFESSOR** position for investigator with training in immunology, physiology, or biochemistry. Must have experience in monoclonal antibody production and assay development (RIA, ELISA). Experience in protein chemistry desired. This is an exciting, multidisciplinary laboratory with opportunities for both clinical and basic research. Competitive salary and benefits. Send curriculum vitae, reprints, and three references to: Ray Quinto, Research Service (151), 11201 Benton Street, Loma Linda, California 92357.

**ASSISTANT PROFESSOR,** tenure-track position, available September 1986. Broadly trained individual in life sciences to teach cell biology, vertebrate embryology, vertebrate anatomy, and bacteriology (microbiology). Opportunity to take part in general education courses. Individualized study part of major enabling individual to pursue research. Liberal arts experience desirable. For more information, contact: Dr. D. C. Allison, Department of Biology, Monmouth College, Monmouth, IL 61462. *Affirmative Action/Equal Opportunity Employer.*

Seeking **INSTRUCTOR** with D.V.M./Ph.D. (with the Ph.D. in pathology and eligible for Board-certification within 2 years) to pursue research on the effects of environmental contaminants on the immune system. Will work with an established investigator for up to 2 years and then develop strong, grant-supported research programs (90 percent effort) and teach graduate trainees (10 percent effort). Send curriculum vitae, statement of research interest, and names of three references by 28 February 1986 to: Albert E. Munson, Ph.D., Department of Pharmacology and Toxicology, Box 613, MCV Station, Virginia Commonwealth University, Richmond, VA 23298. *Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

Seeking **ASSISTANT PROFESSOR** to pursue research on immunotoxicology of abused drugs and/or environmental chemicals. Must have a Ph.D., M.D., or D.V.M. and at least 2 years of productive postdoctoral research experience. Individual will develop grant-supported research programs and participate in graduate and postdoctoral education. Send curriculum vitae, statement of research interest, and names of three references by 28 February 1986 to: Albert E. Munson, Ph.D., Department of Pharmacology and Toxicology, Box 613, MCV Station, Virginia Commonwealth University, Richmond, VA 23298. *Equal Opportunity/Affirmative Action Employer.*

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Applications are invited for two tenure-track positions at the **ASSISTANT PROFESSOR** level. (i) **Culture and resources.** We are seeking applicants who are concerned with the relations of human societies to their biophysical environments. Incumbent will engage in research/teaching in the evolution of resource use and its cultural dimensions. Candidates must show evidence of excellence in teaching and research and hold a Ph.D. in anthropology, geography, economics, or related field. Refer to 23-845. (ii) **Environmental decision-making.** We are seeking applicants familiar with the decision-making process at all levels of government—local, national, and international—and with the history and operation of regulatory and administrative bodies. Incumbent will engage in research/teaching in environmental policy formulation and institutional change related to industrial regulation, public land management, agricultural systems, wilderness preservation, energy systems, development and conservation of natural resources, and so forth. Candidates must show evidence of excellence in teaching and research and hold a Ph.D. in political science or related field of public policy analysis. Refer to 22-834. Applicants for either position should send letter of application, representative research writing/publications, curriculum vitae, and names of three references to: **The Board of Environmental Studies, UC Santa Cruz, CA 95064.** Applications must be postmarked 1 March 1986. *The University of California is an Affirmative Action/Equal Opportunity Employer.*

### ASSISTANT/ASSOCIATE PROFESSOR GENETICS/DEVELOPMENTAL BIOLOGY

Tenure-track position for September 1986. Ph.D. required. Teaching duties to include lecture and laboratory course in genetics and developmental biology. The successful candidate will be expected to maintain an ongoing research program. Potential teaching opportunities at the graduate level exist in the new applied immunology program. The Biology Department consists of nine faculty and offers the B.A. in biology. Submit résumé, statement of teaching and research goals, and three letters of reference postmarked no later than 1 March 1986 and mail to:

Louis F. Gainey, Jr., Chairman  
Department of Biological Sciences  
University of Southern Maine (USM)  
96 Falmouth Street  
Portland, Maine 04103

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### TRANSPORT PHYSIOLOGIST DEPARTMENT OF PHYSIOLOGY UNIVERSITY OF KANSAS MEDICAL CENTER

A tenured appointment as **ASSOCIATE PROFESSOR OR PROFESSOR OF PHYSIOLOGY** with research interests in **epithelial transport** and ability to teach medical and graduate students in **gastrointestinal physiology** is available 1 July 1986. Preference will be given to candidates who can relate their research interests to aging phenomena. The successful candidate will have a well-established research program and sustained grant support at the national level. The appointee will have an M.D., Ph.D., or equivalent degree. The salary is open, depending on present rank and experience. Curriculum vitae and the names of three references should be sent to: Dr. Gilbert S. Greenwald, Department of Physiology, University of Kansas Medical Center, 39th and Rainbow Boulevard, Kansas City, KS 66103.

Evaluation of candidates will begin 1 February 1986. *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### ASSISTANT/ASSOCIATE PROFESSOR OF MICROBIOLOGY-MOLECULAR BIOLOGY

The Department of Microbiology, Loyola University Stritch School of Medicine, is inviting applications for the position of tenure-track assistant or associate professor in the area of molecular biology. This is a second position in addition to the one previously advertised for a molecular geneticist. Preference will be given to candidates with a strong background and research interest in the molecular aspects of microbial, pathogenesis, virology, immunology, or eukaryotic or prokaryotic cell biology. An earned doctorate and postdoctoral research experience are required. The successful candidate will be expected to establish an independent research program, direct graduate students, and obtain extramural research support. Individuals applying at the associate professor level should show demonstrable success in these areas. Teaching responsibilities include participation in a team-taught microbiology course for medical students and presentation every other year of an advanced graduate-level course in the candidate's research specialty. The applicant also will be encouraged to participate in the Interdepartmental Graduate Program in Molecular Biology. The target date for filling the position is the fall of 1986. Salary will be commensurate with qualifications and experience. Send curriculum vitae, a description of research interests, and the names of three references to: **Chairman, Faculty Search Committee, Department of Microbiology, Stritch School of Medicine, Loyola University of Chicago, 2160 South First Avenue, Maywood, IL 60153, by 15 March 1986. Affirmative Action/Equal Opportunity Employer.**

### ASSISTANT PROFESSOR

The Department of Microbiology and Immunology is seeking an individual to fill an opening at the assistant professor level. The successful candidate is expected to develop an independent research program supported by outside funds in basic aspects of the pathogenesis of infectious disease with particular attention to molecular and cell biology. He/she should be capable of teaching microbiology and immunology to medical students and developing courses for graduate students. Send curriculum vitae, description of career objectives and research plans, and names of three references to: **Dr. John M. Lehman, Professor and Chairman, Department of Microbiology and Immunology, Albany Medical College, 47 New Scotland Avenue, Albany, NY 12208. An Equal Opportunity/Affirmative Action Employer.**

### ASSISTANT PROFESSOR—TOXICOLOGY

A tenure-track position with primary responsibility to conduct research on the mode of action of organic toxicants. Specific area of research must be compatible with the aims of existing programs. Participation in graduate student training will be expected. Minimum qualification is the Ph.D. in toxicology or a related field. Postdoctoral experience is desirable. Applications will be accepted until 1 April 1986, or until a suitable candidate is selected. Submit curriculum vitae, transcripts, and Ph.D. thesis summary and have three letters of recommendation sent directly to: **Ernest Hodgson, Chairman, Toxicology Program, Box 7633, North Carolina State University, Raleigh, North Carolina 27695. North Carolina State University is an Equal Opportunity Employer and Operates Under Affirmative Action Policy. The University Strongly Encourages All Qualified Applicants.**

### BIOCHEMIST

**Biology Department** invites applications for a tenure-track appointment at the assistant scientist level in the area of biochemistry for an initial appointment of 2 years. Strong background in analytical biochemistry and cell biology with a demonstrated commitment to research on marine organisms required, with the goal of collaboration with other department members. Applicants with research experience in the biochemistry of metabolism, development, growth, or reproduction of marine animals or plants are particularly encouraged, since salary and set-up money can be guaranteed only for research in these areas.

Application deadline is 14 March 1986.

Apply to: **Personnel Manager, Box 54P, WOODS HOLE OCEANOGRAPHIC INSTITUTION, Woods Hole, MA 02543. An Equal Opportunity Employer, M/F/H.**

## POSITIONS OPEN

### ASSISTANT PROFESSOR—BIOCHEMISTRY

The Department of Biochemistry at Virginia Commonwealth University is seeking applicants for a tenure-track assistant professor appointment. The specific areas of research competence being sought are structure-function of proteins, including membrane assembly, with a strong basis in physical approaches. Other areas of interest are biocatalysis on solid supports or related aspects of biocatalysis and molecular/physical basis of neurobiology. The successful applicant will have demonstrated excellence in research and exhibit strong potential for establishing a superior research program complementary to existing research areas in the department. Candidates will also be judged on their ability to participate effectively in the teaching programs of the department including graduate, health professions, and undergraduate students. A doctoral degree and at least 2 years of postdoctoral experience in biochemistry, molecular biology, chemistry, or a related field is required. Applicants should submit curriculum vitae, a brief description of future research plans, and arrange to have letters of recommendation from three qualified scientists sent to the search committee. Applications should be sent before 1 May 1986 to:

**Search Committee  
Department of Biochemistry  
Box 614 Medical College of Virginia  
Virginia Commonwealth University (VCU)  
Richmond, Virginia 23298**

*VCU is an Affirmative Action-Equal Opportunity Employer.*

**UNIVERSITY OF PENNSYLVANIA**, Department of Medicine. The Cardiovascular-Pulmonary Division seeks an **ASSISTANT PROFESSOR OF MEDICINE**. Board-qualified or -certified in pulmonary medicine with particular interest in cell biology of the lungs and/or airways. Research to be conducted both on tissue cultures and experimental preparations. Background of research experience in cell and tissue culture essential. Available 1 July 1986. Salary commensurate with experience. *The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer, M/F.* Send reply to: **Mr. Richard W. McQuillan, Cardiovascular-Pulmonary Division, Department of Medicine, Hospital of the University of Pennsylvania, 874 Maloney Building, 3600 Spruce Street, Philadelphia, PA 19104.**

**ASSISTANT PROFESSORSHIP**, tenure track for a neuroscientist capable of developing and teaching upper-level undergraduate course in neurochemistry/neuropharmacology and neurophysiology, participating in other neuroscience and psychology courses, and advising senior theses. Ph.D. required. Teaching experience desirable. The neuroscience program is an interdisciplinary program involving the Psychology, Chemistry, and Biology Departments. A breadth of interests appropriate to a liberal arts college setting and continuing scholarly involvement are expected. Total compensation is highly competitive. Send curriculum vitae, graduate transcript, and three letters of recommendation to: **John Dovidio, Ph.D., Department of Psychology, Colgate University, Hamilton, NY 13346. Equal Opportunity/Affirmative Action Employer.**

### MARY BALDWIN COLLEGE BIOLOGY

Mary Baldwin College, a church-related liberal arts college for women combining liberal arts and career preparation, invites applications for a tenure-track faculty position in biology at the assistant professor level beginning September 1986.

We seek an individual who will teach a dynamic and creative course in introductory biology that will attract students to pursue further study in biology. In addition, she/he could teach courses in genetics or physiology; animal behavior; ecology and/or field biology. The person will have an opportunity to develop a course in his/her area of interest.

The person chosen for this position will be a student advisor and should be able to work in the interdisciplinary environment of a small college. Applicants should have a Ph.D. in biology and undergraduate teaching experience.

Please send résumé, three letters of recommendation, and graduate transcripts to: **Dean of the College, Mary Baldwin College, Staunton, Virginia 24401.** Applications will be accepted until 28 February 1986, or until appropriate candidate is identified.

*Affirmative Action/Equal Opportunity Employer*

### Faculty Positions

#### Biomolecular Structure and Function The Pennsylvania State University

Applications are invited for three tenure-track positions at any level as part of an expanded research concentration in the area of biomolecular structure and function. Candidates are being sought in each of the following areas: (i) protein crystal structure determination; (ii) nuclear magnetic resonance studies of proteins; and (iii) macromolecular computer graphics/energy calculations. The university has made a major commitment in this area including laboratory space and equipment necessary for the individual research programs such as high field NMR, x-ray diffractometer including area detector, and computer graphics system. The positions will be available in either the Department of Chemistry, the Department of Molecular and Cell Biology, or as joint appointments in these departments. Joint affiliation with the newly formed Penn State Biotechnology Institute is also a possibility. Faculty already in the area include Drs. S. J. Benkovic, G. A. Hamilton, W. DeW. Horrocks, Jr., K. A. Johnson, C. R. Matthews, G. A. Rose, D. I. Shalloway, and J. J. Villafranca. Applicants should have the background, motivation, and ability to develop vigorous, productive research programs and to be excellent teachers. Reply to: **Search Committees for Biomolecular Structure and Function, Department of Chemistry, 152 Davey Laboratory, Box P, University Park, PA 16802.** Please indicate the area for which you are applying. Include a detailed vitae, statement of research interests, and up to three recent representative reprints. In addition, the applicant should ask three individuals to send letters of reference directly to us. Review of applications will commence in February 1986. Deadline for receipt of applications is 8 March 1986, or until suitable candidates are identified.

*An Equal Opportunity/Affirmative Action Employer*

### POSITION ANNOUNCEMENT

#### Dean of the College of Natural Resources University of California, Berkeley

The University of California at Berkeley invites applications and nominations for the position of Dean of the College of Natural Resources. The position is available on July 1, 1986.

The College of Natural Resources consists of eight departments of instruction (Agricultural and Resource Economics, Conservation and Resource Studies, Entomological Sciences, Forestry and Resource Management, Genetics, Nutritional Sciences, Plant Pathology, and Plant and Soil Biology). The College has approximately 140 faculty members, 400 graduate students and 900 undergraduate students.

Much of the research of the College is conducted under the auspices of the California Agricultural Experiment Station. The Dean as Associate Director of the Experiment Station has administrative oversight of the organized research units of the College as well as the departments of instruction. Three Associate Deans of the College cover the areas of Academic Affairs, Research and Students Affairs.

The College's reputation as an educational and research institution stems from its outstanding achievements in biological, technical and social sciences and the fostering of these areas of knowledge within a single structure. We seek a Dean who will provide academic and administrative leadership in a multidisciplinary setting and who is eligible for appointment as a full professor.

Applications should include a statement of interest relative to the position, curriculum vitae, list of publications, and names and addresses of three or more referees. Review of applications will begin on April 1, 1986. Applications received after that date will be considered if a candidate has not yet been selected.

Nominations and applications should be sent to:

**Professor William McKillop, Chair  
CNR Dean Search Committee  
145 Mulford Hall  
University of California  
Berkeley, CA 94720  
(415) 642-0469**

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

## POSITIONS OPEN

### BIOCHEMIST/MOLECULAR BIOLOGIST

Several grant-supported research positions are available to work with an interdisciplinary group interested in the area of hormonal regulation of gene expression. Ph.D. with experience/interest in recombinant DNA, cell culture, or immunochemistry is required. Rank and salary according to qualification and experience. Send curriculum vitae and names of three references to:

**Employment Office**  
140 North Foundation Hall  
Oakland University  
Rochester, MI 48063

*An Equal Opportunity/Affirmative Action Institution*

**BIOLOGIST** (potential chair) Winona State University (WSU) invites applications for a tenure-track position (September 1986) in the Department of Biology. The rank and salary are dependent on qualifications and experience; current salary range: \$22,976 to \$43,744, chair range to \$51,000. Will teach introductory and advanced (especially cellular or molecular biology) courses and engage in research using cellular/molecular techniques. **Qualifications:** Ph.D. in one of the biological sciences from an accredited graduate school required; 5 years of undergraduate teaching experience required; 2 years of experience as department chair preferred. WSU is in close proximity to major medical facilities such as the Mayo Clinic. Apply to: **Human Resources, Winona State University, Winona, MN 55987.** Deadline: 15 March 1986. *An Affirmative Action/Equal Opportunity Employer.*

### UNIVERSITY OF ABERDEEN CHAIR OF GENETICS

Applications are invited for the chair of genetics from candidates with a distinguished record in research and scholarship, particularly in the area of molecular genetics in science and medicine.

Further particulars and application forms from: **The Secretary, The University, Aberdeen, Scotland AB9 1FX**, with whom applications (two copies) should be lodged by 14 March 1986.

### UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT SAN ANTONIO, CHAIR OF DEPARTMENT OF BIOCHEMISTRY

Nominations and applications are invited for the position of **CHAIR AND PROFESSOR** with tenure. A starting date of September 1986 is preferred. Candidates should have a distinguished research record, experience in teaching students of medicine and/or other health science professions, and demonstrated leadership and administrative abilities. Applications with curriculum vitae or nominations should be sent by 15 March 1986 to: **Dr. Edward J. Masoro, Search Committee for Biochemistry Chair, Department of Physiology, University of Texas Health Science Center, San Antonio, Texas 78284-7756.**

*The University of Texas Health Science Center is an Affirmative Action/Equal Employment Opportunity Employer.*

**CHIEF, CONNECTIVE TISSUE BIOCHEMISTRY LABORATORY**—A Providence-based, nonprofit teaching hospital affiliated with a major university is, among other things, engaged in investigative orthopaedic research involving articular cartilage physiology, and has an immediate need for a highly skilled experimental biochemist/assistant professor to conduct and coordinate advanced orthopaedic research in the extracellular metabolism and assembly of proteoglycans in articular cartilage together with related teaching responsibilities within the Department of Orthopaedics. Minimum requirements include at least a Ph.D. degree in biochemistry, relevant postdoctoral training, and at least 2 years of subsequent experience, inclusive of relevant research, involving animal models of degenerative joint disease, control of link protein synthesis in chondrocyte cultures, and chondrocyte-mediated catabolism of proteoglycans in cartilage explant systems. Starting salary for the position is \$36,000 per year and also includes medical, life, and disability insurances, together with 4 weeks' vacation. Qualified applicants respond with comprehensive curriculum vitae and list of professional publications only to: **Tessie Salabert (Job Number 618558), Rhode Island Job Service, Department of Employment Security, 130 West Exchange Street, Providence, Rhode Island 02903.**

## POSITIONS OPEN

### CHAIRMAN BIOLOGICAL SCIENCES

Butler University plans to combine the current Departments of Botany and Zoology into a proposed Department of Biological Sciences and is seeking a chairman for the combined department of nine by 1 August 1986. A Ph.D. and qualifications appropriate for an appointment as associate professor or professor are required, as are administrative skills and a strong commitment to undergraduate teaching and research. The academic specialty is open, but a geneticist, vertebrate biologist, or evolutionary biologist will receive special consideration. Rank and salary are negotiable, benefits include TIAA/CREF. Applicants should send curriculum vitae, representative reprints, and the names of four references to: **Dr. James W. Berry, Biology Search Committee, Department of Zoology, Butler University, Indianapolis, IN 46208.** Applications should be received by 1 March. Butler University is a coeducational private university with 2000 full-time undergraduates enrolled in five colleges (Liberal Arts and Sciences, Pharmacy, Business, Education, and Fine Arts). Its 250-acre campus is located in a residential area 5 miles from downtown Indianapolis. *Butler University is an Equal Opportunity/Affirmative Action Employer.*

**CHEMIST, ORGANIC (RESEARCH ASSOCIATE).** Require Ph.D. in organic chemistry and background of graduate research or industrial experience using 1,3 dipolar nitron cycloadditions and amino acids and peptides to make natural products with medicinal applications. Position involves performance of experimental research chiral amino acids in development of phase transfer catalysts; use IR, UV, <sup>1</sup>H-NMR, <sup>13</sup>C-NMR, mass spectroscopy, polarimetry, and chromatography techniques. Submit three references from employers or organic chemistry professors familiar with applicant's research work. Salary: \$16,000 per year for 40-hour week. Send résumé and references to: **Dr. Arthur Schultz, 319A Cogswell, Rensselaer Polytechnic Institute, 110 8th Street, Troy, NY 12180.** *Affirmative Action/Equal Opportunity Employer.*

**THE DEPARTMENT OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS** at Louisiana State University (LSU) Medical Center in New Orleans invites applications for current and anticipated **FACULTY POSITIONS** at LSUMC. Under exceptional circumstances, appointments at more senior levels will be considered. All positions are tenure-track, state-salaried, and include generous start-up funds. Applications are encouraged from, but are not limited to, the following areas of pharmacology: cardiovascular, neuro, renal, pulmonary, and molecular. Candidates will be evaluated on the basis of research and teaching experience/potential. Successful candidates will be expected to develop and maintain funded research programs and to participate in the teaching of pharmacology throughout the medical center. Starting dates are negotiable. Send curriculum vitae, a brief description of research plans, and the names of three references to: **Dr. Lynn Wecker, Chairperson, Search Committee, Department of Pharmacology and Experimental Therapeutics, LSU Medical Center, 1901 Perdido Street, New Orleans, LA 70112-1393.** *Affirmative Action/Equal Opportunity Employer.*

### FACULTY POSITION DEPARTMENT OF MICROBIOLOGY

Applications are invited for a tenure-track faculty position at the assistant or associate professor level starting July 1986. Candidates must be capable of initiating an independent research program. The research area of interest is open. However, individuals using molecular or immunological approaches to investigate problems related to bacterial and viral pathogenesis are particularly encouraged to apply. Interested individuals should send curriculum vitae, a letter outlining their teaching experience and research interests, and the names of three references by 1 April 1986 to:

**Dr. Gary R. Pearson, Chairman**  
Department of Microbiology  
Georgetown University Medical Center  
3900 Reservoir Road  
Washington, DC 20007

*An Equal Opportunity/Affirmative Action Employer*

## POSITIONS OPEN

**COLOR VISION**—Postdoctoral position to study neural mechanisms of color vision in trained and alert macaque monkeys, using electrophysiological, histochemical, and behavioral techniques. Familiarity with computers, some background in neurobiology, and a strong interest in perception are recommended. Experiments currently in progress utilize color video display, search coil eye position monitoring, single unit recording. Salary is negotiable depending on experience. Starting date: June 1986. Send curriculum vitae, statement of interests and names of three references to:

**Dr. Bruce Dow**  
Division of Neurobiology  
State University of New York  
4234 Ridge Lea Road  
Buffalo, New York 14226

**CYTOGENETICIST M.D./Ph.D.**, pathologists preferred. Specialty certification (or equivalent training) and background in clinical diagnostic and research work important. Experience and a record of scholarship with a strong publication record are required. Demonstrated accomplishment in research. Minimum of 2 years of experience in human cytogenetics necessary. *Women and members of minority groups are encouraged to apply.* Please forward curriculum vitae to: **John E. Craighead, M.D., Department of Pathology, University of Vermont, Burlington, VT 05405.**

### DATA BASE PRODUCT MANAGER BIOCHEMISTRY

Major international publisher of scientific, technical, medical books, and journals is seeking a product manager on marketing/sales staff. Responsible for publishing concepts, marketing strategies, and development of online data bases. Requirements: working knowledge of EDP, chemical background, and general marketing orientation. Graduate degree in science, chemical engineering, or organic chemistry preferred. Pharmaceutical experience desirable. Must be willing to travel extensively. Salary commensurate with experience. Excellent benefit package. Send résumé and salary history to: **Box 22, SCIENCE.**

School for Field Studies seeks **FACULTY** for undergraduate 4- and 12-week courses combining academics and environmental field research at remote sites worldwide (including ecology courses in Ecuador, Alaska, Kenya, Switzerland, Panama, Saint John, and Israel). Qualifications: field leadership and research experience, outstanding undergraduate teaching skills, and an M.S. or Ph.D.; \$1000 to \$1600 per month, plus travel/field expenses. Send curriculum vitae, letter, and names of three references to: **Programs, SFS, 196 Broadway, Cambridge, MA 02139.**

### CENTER FOR GENE STRUCTURE AND FUNCTION FACULTY POSITIONS

A center for Gene Structure and Function has been newly established by the RCMI program of the NIH and Hunter College. The Department of Biological Sciences invites applications for tenure-track positions at all professorial levels for its expanding program in that area. The department is especially interested in candidates with research interests in immunology and/or molecular genetics but those in other areas of eukaryotic molecular/cell biology are also encouraged to apply. Appointees are expected to establish an independent research program and to participate in team-taught courses in their areas of expertise at the undergraduate and/or graduate level. Send curriculum vitae, future research interests, and names of three references to:

**Professor Harvey L. Ozer**  
Department of Biological Sciences  
P.O. Box 1221

Hunter College, City University of New York  
695 Park Avenue  
New York, NY 10021

*An Equal Opportunity/Affirmative Action Employer  
Minority candidates are encouraged to apply*



## FIRST ANNUAL ASM CONFERENCE ON BIOTECHNOLOGY

20-23 March 1986

Washington, D.C

The American Society for Microbiology is organizing a new meeting OF, BY and FOR scientists to discuss research at the cutting edge.

**MAJOR SESSIONS:** New Products (John Shine), New Processes (William Rutter), Setting Future Directions for Biotechnology (David Baltimore), Protein Engineering and Enzymes (Dale Oxender), Computers and Their Use (Stephen Kent), Plant Technology (Robert Schilperoort), Hybridoma Technology (Robert Nowinski)

**SPECIAL EVENTS:** Keynote Addresses by Joshua Lederberg and Francis Crick; Washington Public Affairs Forum (Joseph Perpich), Nobel Laureate Roundtable Discussion on Present Concerns and Future Directions for Biotechnology (Joshua Lederberg, Francis Crick, David Baltimore)

Attendance will be limited. Registration fee (includes most meals): ASM Member-\$80; Non-member-\$200; Student-\$25.

**APPLY NOW!** Contact: ASM Conference on Biotechnology, 1913 I St. NW, Washington, DC 20006, (202) 833-9680.

## Molecular Biologist/ Molecular Geneticist

The Molecular Genetics Department of Pfizer Central Research has an immediate opening for a highly motivated and skilled individual to perform advanced research in a project involving eukaryotic gene isolation and expression.

The position requires either a MS degree in molecular biology or biochemistry, or a BS with at least two years of relevant laboratory experience. Preference will be given to applicants who can demonstrate a wide range of molecular biological/biochemical skills, particular emphasis being placed on the following techniques: purification, analysis and manipulation of nucleic acids; cDNA and/or genomic cloning; bacterial and mammalian cell culture; bacterial and mammalian cell transformation; enzyme protein purification assay.

The position offers a stimulating professional environment in an attractive southeastern Connecticut shore area, complemented by a competitive salary/benefits package and relocation assistance. Forward your resume, description of research and references to: Charles P. Norris, Personnel Associate, Pfizer Central Research, Eastern Point Road, Groton, CT 06340.



An equal opportunity employer

## SUMMER 1986 TEN ENVIRONMENTAL SCIENCE AND ENGINEERING FELLOWSHIPS

### Applications invited.

The American Association for the Advancement of Science (AAAS) invites applications for ten environmental science and engineering fellowships available for summer 1986. The fellows will work closely with the Environmental Protection Agency (EPA), Office of Research and Development, and other program offices, in Washington, DC, and assist in identifying and assessing the significance of long-range environmental problems and opportunities. The 10-week appointments are scheduled for 9 June through 15 August 1986. The awards will be announced prior to the end of April 1986.

Postdoctoral to mid-career scientists, engineers, and other appropriate professionals are encouraged to apply. Candidates may be from the physical, biological, or behavioral sciences, or any field of engineering or other relevant professional fields. They are expected to be critical thinkers, articulate, adaptable, and able to work with a variety of people from different professional backgrounds.

The 1986 Environmental Fellows will receive a taxable stipend of \$630 per week and a nominal additional amount for temporary relocation expenses and travel in connection with the fellowships.

A detailed, future-oriented research project will be conducted by each fellow which is of mutual interest to him or her and the EPA. A project report will be submitted at the completion of the summer's work. Typical areas of research interest within EPA include: environmental risk assessment, biological pesticides, acid deposition, mobile source air pollution; oxidants, gases and particles, municipal waste water and spills; drinking water; hazardous waste; chemical testing and assessment; pesticides; radiation; and energy.

For further information and specific application requirements contact:

Patricia S. Curlin, Manager  
Environmental Science and Engineering Fellows Program  
American Association for the Advancement of Science  
1333 H Street, NW, Washington, DC 20005  
Telephone: 202-326-6600

Deadline for applications is 10 March 1986.

## NIH STAFF FELLOWSHIP Chemical Carcinogenesis National Institute of Environmental Health Sciences Laboratory of Molecular Biophysics

**WORKGROUP:** -Prostaglandins; Dr. Thomas E. Eling, Head

**RESEARCH:** -Prostaglandin hydroperoxidase and peroxyl radical mediated metabolism of chemical carcinogens.  
-Formation and identification of DNA-carcinogen adducts.  
-Metabolism of arachidonic acid to prostaglandins and leukotrienes in isolated cells.  
-Role of eicosanoids in cell proliferation and carcinogenesis.

**QUALIFICATIONS:** -Ph.D. in chemistry, biochemistry, or related field.  
-Background in free radical or analytical chemistry desired.  
-Less than 7 years of postdoctoral experience.  
-U.S. citizen or resident alien eligible for citizenship within 4 years.

**SALARY RANGE:** \$17,000 to \$41,358

**DOCUMENTATION:** Curriculum vitae, bibliography, letters of reference (3)

**CONTACT:** Mr. Bruce Wiggins  
NIEHS Personnel Office Code: HN-V2K  
P.O. Box 12233 (MD-01)  
Research Triangle Park, NC 27709  
Telephone: 919-541-3317

NIEHS is an Equal Opportunity Employer

## POSITIONS OPEN

**EXERCISE PHYSIOLOGIST.** Assistant/associate professor tenure-track position. Develop a productive, externally funded research program in exercise biochemistry, intermediary metabolism, neuromuscular physiology and/or skeletal muscle physiology, and teach appropriate exercise science courses. Doctorate required. For position vacancy statement: **Chair, Department of Physical Education, Indiana University, Bloomington, IN 47405.** Review begins 1 March 1986. *Affirmative Action/Equal Opportunity Employer.*

The Department of Physics of the University of New Hampshire (UNH) anticipates two tenure-track **FACULTY APPOINTMENTS** at the **ASSISTANT/ASSOCIATE PROFESSOR** level, beginning September 1986. Outstanding applicants from all fields will be considered, although preference will be given to individuals who can begin a new experimental or theoretical research program in the department. New areas of interest include condensed matter, modern optics, nonlinear dynamical systems, biophysics, or other applied areas. It is possible that the two candidates will be selected from the same research field. Ph.D. required. The department currently has 20 faculty with strong research programs in space physics and astrophysics, nuclear physics, atomic and molecular physics, and theoretical physics. Teaching loads are appropriate for a faculty with strong research commitments. The university has 10,000 students and is located in a small colonial town near the seacoast, approximately 1 hour from both mountains and Boston. To apply, please submit curriculum vitae and have three letters of reference sent by 1 March 1986 to: **Professor Harvey Shepard, Chair, Search Committee, Department of Physics, DeMeritt Hall, University of New Hampshire, Durham, NH 03824-3568.** UNH is an *Affirmative Action/Equal Opportunity Employer.*

## FACULTY POSITIONS COLUMBIA UNIVERSITY DEPARTMENT OF ANATOMY AND CELL BIOLOGY

The Department of Anatomy and Cell Biology seeks applicants for tenure-track (assistant professor) or tenured positions (professor/associate professor) in the areas of cell biology, developmental biology, and cellular neurobiology. Suitable areas of research include, but are not limited to, receptors and signal transduction mechanisms, targeting and transport of intracellular proteins, the cytoskeleton, and extracellular matrix. Candidates should have an outstanding research record and will be expected to develop an innovative program of investigation. Teaching responsibility will include participating in both the graduate and medical teaching programs of the department, the areas to be determined by the background and skills of the candidate. Send curriculum vitae, statement of research goals, and names of three professional references to: **Dr. Michael D. Gershon, Chairman, Department of Anatomy and Cell Biology, Columbia University, College of Physicians and Surgeons, 630 West 168 Street, New York, NY 10032.** Columbia University is an *Affirmative Action/Equal Opportunity Employer.*

**FACULTY POSITION, ENVIRONMENTAL HEALTH CHEMIST:** The School of Public Health is accepting applications for a tenure-track position at the assistant professor level. The applicant must have a Ph.D. degree in chemistry, environmental health, or a closely related field; experience beyond the doctorate is required. The academic background must show strength in analytical chemistry with an environmental health orientation. Responsibilities include graduate level teaching, advising, and service in a major environmental health (EH) program; research in applicant's specialty area and in general EH as compatible with program needs; aggressive pursuit of research/training grants and contracts. Starting date for position is approximately 1 September 1986. Applications must be received by 1 April 1986. Submit current curriculum vitae, names and addresses of three references, and a brief statement of interests related to EH to: **Dr. Fay Thompson, Search Committee Chair, Division of Environmental Health, Box 197 Mayo, 410 Delaware Street SE, University of Minnesota, Minneapolis, MN 55455.**

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

## POSITIONS OPEN

**FACULTY POSITION—INDUSTRIAL HYGIENE** Department of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill. Applications are invited for a tenure-track position as assistant or associate professor. The position involves graduate level teaching, direction of graduate student research, and research in one of the following areas: industrial ventilation, ergonomics, control of physical agents such as noise or heat, or instrumentation. An appropriate doctoral degree is required; industrial experience and Board-certification are highly desirable. Applications should be received no later than 31 March 1986. Send curriculum vitae and the names and addresses of three references to: **Dr. David Leith, Chairman Search Committee, Department of Environmental Sciences & Engineering, University of North Carolina, Chapel Hill, NC 27514.** The University of North Carolina is an *Equal Opportunity/Affirmative Action Employer.*

## ICHTHYOLOGY SCIENTIFIC ASSISTANT

The Department of Ichthyology of The American Museum of Natural History is seeking a scientific assistant to participate in its research programs and activities. Responsibilities will include assisting in data collection, identification of specimens, preparation, of research materials and the management, preparation, and maintenance of the department's collection of preserved fishes, skeletons, and facilities. Qualified candidates must have a B.A./B.S. degree in the biological sciences, background in ichthyology, experience handling scientific collections and equipment, manual dexterity, and be detail-oriented. Salary is \$17,641 per annum. Excellent benefits. For consideration, please send résumés to: **Mr. Lee Viletsky, Personnel Department, The American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024.** An *Equal Opportunity Employer.*

## TRUDEAU INSTITUTE

A position is available for an **IMMUNOLOGIST** interested in establishing a program in basic cellular immunology, transplantation immunology, tumor immunology, or immunity to infectious diseases. The appointment will be made at the level of assistant or associate professor, depending on the amount of postdoctoral experience and publication record. Preference will be given to applicants interested in immunoregulation. No teaching is required. The successful applicant will be guaranteed 3 to 5 years of support, depending on the level of appointment, but will be expected to compete for outside funding. Campus housing is available.

The Trudeau Institute is a not-for-profit pure research institute that specializes in studying the immunology of host defense mechanisms. It is located on the shore of Saranac Lake, 8 miles from Lake Placid, New York.

Send curriculum vitae and the names of three references to:

**Robert J. North, Ph.D.  
Director  
Trudeau Institute, Inc.  
P.O. Box 59  
Saranac Lake, NY 12983**

## IN VITRO/IN VIVO NMR SPECTROSCOPY POSTDOCTORAL POSITION

Several postdoctoral positions are available for persons interested in the development and application of NMR spectroscopy to intact tissue metabolism and physiology. Projects include metabolic and physiological studies of the eye lens, and the development of techniques for the in vivo spatial localization of tissue metabolites. Minimum qualifications: a Ph.D. in chemistry or biochemistry and experience in NMR spectroscopy. Familiarity with tissue dissection techniques is desirable. For one of these positions experience in rf and digital electronics, and computer programming would be appropriate. Facilities include a GE wide-bore 7 T multinuclear spectrometer. Applicants should submit curriculum vitae and three letters of recommendation to: **Professor Thomas Schleich, Department of Chemistry, University of California, Santa Cruz, CA 95064.** An *Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**IMMUNOLOGY POSTDOCTORAL FELLOWSHIP.** Two years of research of human monocyte subsets and T-cell subsets in generation of suppressor circuits. Molecular immunology faculty and program involvement. Hybridoma-DNA methods experience would complement laboratory cellular techniques. Send curriculum vitae and three letters of reference to: **Dr. Carol Miller, Research Division, University of Massachusetts Medical Center, 55 Lake Avenue, North, Worcester, MA 01605.** *Equal Opportunity/Affirmative Action Employer.*

## INTERNAL MEDICINE/PULMONARY SPECIALIST

The Department of Medicine of the University of California, San Francisco, San Francisco General Hospital-Northern California Occupational Health Center is seeking a physician with training in internal medicine/pulmonary medicine and boards in pulmonary medicine. The candidate must have experience in occupational health clinic activities, teaching medical students and housestaff about occupational lung disease, and show research productivity in the field of occupational lung disease. The appointment will be at the assistant professor level beginning 1 July 1986.

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

Letters of inquiry and curriculum vitae should be sent to:

**Dr. Charles E. Becker, M.D.  
Northern California Occupational Health Center  
Building 30, 5th floor  
San Francisco General Hospital  
1001 Potrero Avenue  
San Francisco, CA 94110**

## MONASH UNIVERSITY Melbourne, Australia DEPARTMENT OF EARTH SCIENCES FIXED-TERM (3 to 5 YEARS) LECTURER/ SENIOR LECTURER

Scientist with research expertise in a field related to petroleum geology, including low temperature/organic geochemistry, invertebrate palaeontology, sedimentology, stratigraphy, marine geology, or petroleum geophysics. Appointee to establish research programs involving industry and government support, participate in undergraduate and postgraduate teaching, and supervise M.Sc. and Ph.D. students. Inquiries to: **Dr. I. A. Nicholls, Acting Chairman.** Salary: lecturer: A\$27,233 to A\$35,777 per annum. Senior lecturer: A\$36,541 to A\$42,588 per annum. Applications, including reference no. 41512A, curriculum vitae and three referees to: **The Registrar, Monash University, Clayton, Victoria 3168, Australia,** by 28 February 1986.

*An Equal Opportunity Employer*

**MICROSCOPIC ANATOMIST/ASSISTANT PROFESSOR** Ph.D. to teach veterinary microscopic anatomy and develop research program. Send résumé and names of three references to: **Dr. N. E. Hutton, Veterinary Medicine, Oregon State University, Corvallis, Oregon 97331,** before 31 March 1986. *Equal Opportunity/Affirmative Action Employer. Complies Section 504 Rehabilitation 1973.*

## TRUDEAU INSTITUTE

A **POSTDOCTORAL POSITION** is available to study the immune response to tumors as a model of immunoregulation. Candidates with training in cellular immunology, and interested in employing in vitro assays to analyze in vivo models of successful and unsuccessful immune responses should apply. A competitive salary and fringe benefits are offered and institute housing will be made available. Future employment is possible, depending on performance.

The Trudeau Institute is a not-for-profit pure research institute that specializes in studying the immunology of host defense mechanisms. It is located on the shore of Saranac Lake, 8 miles from Lake Placid, New York.

Send curriculum vitae and the names of three references to:

**Robert J. North, Ph.D.  
Director  
Trudeau Institute, Inc.  
P.O. Box 59  
Saranac Lake, NY 12983**

# SENIOR CELL BIOLOGIST

BURROUGHS WELLCOME CO., an innovative pharmaceutical company, in Research Triangle Park, North Carolina, is seeking an experienced Cell Biologist to apply recombinant DNA technology within a range of research programs related to metabolism of nucleic acid precursors.

The successful candidate will have Ph.D. or equivalent with a strong background in biochemistry, demonstrated ability in both recombinant DNA technology and vertebrate cell culture, and be able to interact effectively with scientists from a variety of disciplines.

BURROUGHS WELLCOME CO. offers a competitive salary, a comprehensive company-paid benefit package and stimulating environment for scientific research. Qualified minority, female, veteran and handicapped individuals are encouraged to apply. Candidates should submit curriculum vitae with salary requirements to:

Employment Supervisor, BURROUGHS  
WELLCOME CO., 3030 Cornwallis  
Road, Research Triangle Park,  
NC 27709.



**BURROUGHS  
WELLCOME CO.**



**Wellcome**

An Equal Opportunity/Affirmative Action Employer

## RESEARCH SCIENTISTS

### *Biotransformation And Drug Disposition*

Battelle-Columbus, a division of one of the world's leading R&D organizations, is seeking scientists to join our growing Toxicology and Health Sciences Section. Position requirements are as follows:

#### **SENIOR RESEARCH SCIENTIST —**

A PhD in a Pharmacological or Biochemical Science plus a minimum of 4 years' post-graduate experience in isolation and identification of drug metabolites, pharmacokinetic modelling and tissue distribution, and disposition of radioactivity following the administration of radiolabelled chemicals are required. Will lead Biotransformation and Drug Disposition group.

#### **POSTDOCTORAL RESEARCHER —**

A PhD in a Pharmacological or Biochemical Science with 0-2 years' of postdoctoral experience. Academic training and research experience in drug metabolites and disposition are desirable, as is experience with radiolabelled materials and chromatographic equipment.

Both positions require excellent oral and written communications skills.

Battelle offers excellent benefits, a competitive salary, and opportunities for professional advancement. Qualified candidates should send a complete resume to: **Virginia Tyler, Employment Dept. F-1, Battelle Columbus Division, 505 King Avenue, Columbus, Ohio 43201-2693.** An Equal Opportunity/Affirmative Action Employer M/F/H.



**Battelle**

Columbus Division

## WHO HAS A CORNER ON PLASMA FRACTIONATION TECHNOLOGY

When it comes to projects in plasma fractionation, look to Armour Pharmaceutical. We're a world leader in this field and a variety of other highly advanced scientific areas. And we have been for over 100 years.

### SR. DEVELOPMENT SCIENTIST

Responsible for planning and carrying out experiments in new product development, product improvement and cost reductions. You will also evaluate new methodologies and work with R&D and Operations personnel in bringing new products to market. The ideal candidate will have a Ph.D. in Biochemistry with extensive experience in protein fractionation. Knowledge of coagulation, fibrinolysis and protein chemistry would be highly desirable, as is Post-doctoral research and industrial experience in handling human therapeutic fractions.

Our advanced manufacturing facility is located within easy access to Downtown Chicago and less than 30 minutes from some of Chicago's finest suburbs. In addition to an excellent salary and benefits package we offer a fast-growth, yet relaxed environment. For confidential consideration, send a resume with salary history to: **John S. Daviantes/Manager, Personnel Administration, Dept. SM2.**



**Armour Pharmaceutical Co.**  
P.O. Box 511, Kankakee, IL 60901

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## ONCOGENES

### • DIRECTOR OF PROJECT DEVELOPMENT and • SENIOR SCIENTISTS

**Applied bioTechnology** is a growing company specializing in:

- genetically engineered vaccines for the veterinary and human markets
- novel products for cancer diagnostics and therapeutics based on oncogene technology

We are seeking highly-qualified Senior Scientists with expertise in the analysis of gene structure and function to assume major roles in the direction and development of our cancer program.

If you are qualified and are interested in a stimulating environment and scientific challenge, combined with competitive salary and benefits plus equity participation, submit your curriculum vitae with the names of three references and a list of publications to: **Director of Technology, Applied bioTechnology, Inc., 80 Rogers Street, Cambridge, MA 02142.**

An Equal Opportunity Employer

*Applied bioTechnology Inc.*



## POSITIONS OPEN

### MAMMALIAN CELL TECHNOLOGY

Two postdoctoral research positions are anticipated in fundamental studies involving high density mammalian cell systems used for production of human vaccines, monoclonal antibodies, and other cell products. Previous experience in cell culture technology is not required. Applicants with backgrounds in nutritional biochemistry, cell and organ physiology, or molecular genetics would be suitable.

Inquiries to:

**Professor William G. Thilly**  
Department of Applied Biological Sciences  
Massachusetts Institute of Technology  
77 Massachusetts Avenue, Room E18-666  
Cambridge, MA 02139  
Telephone: 617-253-6221

*An Equal Opportunity/Affirmative Action Employer*

### MICROBIOLOGY

Macdonald College of McGill University, Faculty of Agriculture, invites applicants for the position of assistant professor (tenure track) in the Department of Microbiology in the area of molecular genetics. Qualifications include a Ph.D. and responsibilities include teaching and advising both at the undergraduate and graduate levels. The successful candidate will develop a research program in molecular genetics with emphasis on microbial biotechnology. The base salary for an assistant professor is \$30,169. Closing date for applications is 15 May 1986, or until a suitable candidate is found. Applicants should submit a résumé and arrange for three letters of reference and one official copy of all university transcripts to be sent to: **Dr. J. M. Ingram, Acting Chairman, Department of Microbiology, Macdonald College of McGill University, 21,111 Lakeshore Road, Ste. Anne de Bellevue, Quebec, Canada H9X 1C0.** *In accordance with Canadian immigration requirements, priority will be given initially to Canadian citizens and permanent residents of Canada.*

### TWO POSITIONS: MOLECULAR BIOLOGIST BIOTECHNOLOGIST

The School of Applied Biology, Georgia Institute of Technology, announces two tenure-track position openings at the assistant or associate professor level. Applications are invited from candidates with an active background of research at the molecular level in one of the following areas: plant biology, cell biology, microbiology, immunology, genetics, and toxicology. Applications are also invited from individuals with expertise in mechanisms of pathogenesis, eukaryotic microbiology, biomass production, identification of organics with commercial potential, agricultural microbiology, whole cell immobilization, or immunochemistry. The successful candidates will join a department actively engaged in pure and applied research on both eukaryotic and prokaryotic systems. The appointees will be expected to contribute to the teaching of the school's undergraduate and graduate programs. Send curriculum vitae, description of proposed research, and the name of three references to: **T. G. Tornabene, Director, School of Applied Biology, Georgia Institute of Technology, Atlanta, GA 30332.** Closing date 30 March 1986. *The Georgia Institute of Technology is a unit of the University System of Georgia and is an Equal Opportunity/Affirmative Action Employer.*

**MOLECULAR BIOLOGY/VIROLOGY.** The Department of Veterinary Parasitology, Microbiology, and Public Health, College of Veterinary Medicine, Oklahoma State University, invites application for a position of molecular biology/virology. Requirements are a Ph.D. in molecular biology, microbiology, or biochemistry and ability to develop research program in animal health using one or more of the contemporary technologies of recombinant DNA, gene cloning and expression, protein synthesis, hybridomas, and/or molecular structure and function. The person will advise graduate students and develop graduate course in appropriate discipline. Salary and rank commensurate with qualifications and experience. Send application including curriculum vitae, statement of professional goals, and names of three references to: **Dr. R. W. Fulton, Department of Veterinary Parasitology, Microbiology and Public Health, Oklahoma State University, Stillwater, OK 74078; telephone: 405-624-6737.** Applications must be received by 1 April 1986 to ensure full consideration. *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**NEUROPHYSIOLOGIST.** The Department of Psychology and the Department of Zoology and Physiology at the University of Wyoming invite applications for a tenure-track joint position in neurophysiology at the rank of assistant professor, beginning in August 1986. Postdoctoral experience and evidence of a productive research program is required. It is expected that the successful candidate will be a major contributor to the interdepartmental Graduate Neuroscience Program and have research interests which will augment on-campus research in comparative vertebrate physiology and neurobiology. Teaching will be divided between the two departments and will periodically include a course in neurophysiology, a course from the basic psychology curriculum, and part of a course in general physiology. A description of professional objectives, curriculum vitae, representative publications, and three letters of reference should be sent to: **Dr. James D. Rose, Department of Psychology, Box 3415 University Station, University of Wyoming, Laramie, WY 82071.** Application deadline is 1 March 1986. *Equal Opportunity/Affirmative Action Employer.*

### U.S. DEPARTMENT OF INTERIOR (USDI) FISH AND WILDLIFE SERVICE (FWS) DENVER WILDLIFE RESEARCH CENTER (DWRC) DENVER, COLORADO PHARMACOLOGIST (TOXICOLOGIST)

DWRC has a permanent position available for a pharmacologist (toxicologist), GS-11 (\$26,381), to plan, develop, and conduct toxicological studies of pesticides and other agricultural chemicals such as physiological markers, chemosterilants, and repellents to selected wildlife species under both laboratory and field conditions. The work involves handling of coyotes, rodents, and birds and close cooperation with wildlife biologists, chemists, and physiologists. Applications will be accepted from 10 February 1986 to 28 February 1986. For information on qualifications and application procedures, contact: **Dick Walsh, FWS; telephone: 303-236-4733.** Application forms may be obtained from: **The Office of Personnel Management, 12345 West Alameda Parkway, Lakewood, CO 80225, or by telephone: 303-236-4159.** *USDI is an Equal Opportunity Employer.*

**PHYSICAL OCEANOGRAPHER.** The Graduate School of Oceanography at The University of Rhode Island invites applications for a research faculty position in physical oceanography. We are primarily interested in candidates with theoretical and/or numerical modeling experience at the assistant professor level, but the level of the appointment will depend on the qualifications of the applicant. Applicants must have a Ph.D. degree and have shown excellence and independence in their research. Some start-up funds are available, but within a reasonable period of time the candidate is expected to develop their own program of funded research. Our department is actively involved in studies of western boundary currents, stability properties of frontal systems, eddy transport processes in energetic and quiet ocean regions, equatorial oceans, and ocean-atmosphere exchange processes. Please send application including curriculum vitae, a statement of research interests, and names of three references by 21 March 1986 to: **Professor Thomas Rossby, Physical Oceanographer (090325) Position, THE UNIVERSITY OF RHODE ISLAND, P.O. Box 357, Kingston, RI 02881-0357.** *An Affirmative Action/Equal Opportunity Employer, M/F.*

**PHYSIOLOGIST:** Southern Illinois University (SIUE) School of Dental Medicine invites applications for a full-time faculty position in the Department of Biomedical Sciences, Section of Physiology. Ph.D. or equivalent in human physiology with demonstrated research ability is required. The individual filling this position will be responsible for teaching medical physiology to dental and graduate students and actively pursue research of own choice. Salary and rank commensurate with experience.

Applications will be received until 1 March 1986. *SIUE School of Dental Medicine is an Equal Opportunity Affirmative Action Employer.* Send curriculum vitae to:

**Dr. Herbert C. Butts, Dean**  
Southern Illinois University/Edwardsville  
School of Dental Medicine  
2800 College Avenue  
Alton, IL 52002

## POSITIONS OPEN

**NEUROBIOLOGY POSTDOCTORAL RESEARCH POSITION** available immediately to study factors that influence regeneration and inhibit retrograde cell death following injury to the adult mammalian CNS. Techniques employed include intracerebral transplantation, cell culture, neuroanatomical tracing, immunocytochemistry, protein isolation, and computer morphometry. Send curriculum vitae and letters of reference to: **Dr. Lawrence Kromer, Department of Anatomy, Georgetown University, Schools of Medicine-Dentistry, 3900 Reservoir Road NW, Washington, DC 20007.**

**POSTDOCTORAL FELLOW.** Research will entail studies in renal biochemistry with emphasis on cellular transport. Four-year appointment. Salary: \$24,000 to \$26,000 per year. Start April 1986. Send curriculum vitae and three letters of reference to: **Dr. Mani Menon, Division of Urology, University of Massachusetts Medical Center, 55 Lake Avenue North, Worcester, MA 01605.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION**—Immediate opening for a protein biochemist to isolate and characterize tubulin and microtubule-associated proteins from higher plants grown at suboptimal temperatures. Results will contribute to understanding how cold acclimation enhances MT cold stability in hardy plants. Send curriculum vitae, transcripts, and have three reference letters sent, before 25 March 1986, to: **Dr. John V. Carter, Department of Horticultural Science, University of Minnesota, St. Paul, MN 55108.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

### UNIVERSITY OF PENNSYLVANIA POSTDOCTORAL POSITION

Postdoctoral position (2 to 3 years) available September 1986 on research concerning the biological and pathophysiological role of human mast cell proteinases. Work includes studies on the release of these proteinases from mast cells and their interaction with components of connective tissue, for example basement membranes. It will in part require the development of immunohistochemical techniques with specific antibodies to detect the proteinases in tissue sections at the light and electron microscope level. Antiserum to a human mast cell chymotryptic proteinase has been produced in this laboratory. Background in immunocytology and biochemistry necessary. References to past work are in *Journal of Biological Chemistry* [258, 8619 (1983)] and *Journal of Experimental Medicine* [160, 1027 (1984)]. Please contact: **N. M. Schechter, Ph.D., or G. S. Lazarus, M.D., Department of Dermatology, 229 Medical Education Building, University of Pennsylvania, PA 19104.**

*An Affirmative Action/Equal Opportunity Employer.*

### POSTDOCTORAL POSITION HARVARD MEDICAL SCHOOL

Available 1 July 1986. Organic chemistry will synthesize radionuclide carrier molecules as part of a multidisciplinary program studying the toxic effects of internal emitters in cancer radiotherapy. Salary contingent on experience (NRSA Guidelines). U.S. citizenship or permanent residency status required. 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** available immediately to study radiolabeled monoclonal antibodies for in vivo tumor imaging and therapy in tumor-bearing nude mice and patients with B-cell lymphoma or colorectal cancer. Determine stability affinity, immunoreactivity, and biodistribution of radiolabeled antibodies and antibody fragments. Applicants should have a strong background in biochemistry, biology, immunology, or immunochemistry. Experience in immunological methods of protein purification and modification, cell culture, hybridoma production, radiolabeling, and handling radioactivity also desirable. Send curriculum vitae, reprints, and names and addresses of three references to: **Donald J. Buchsbaum, Ph.D., Department of Radiation Therapy, The University of Michigan Medical School, Room X3003, Box 56, Ann Arbor, Michigan 48109.** *The University of Michigan is a nondiscriminatory Affirmative Action Employer.*

**AUSTRALIA**  
**The University of Adelaide**  
**WAITE AGRICULTURAL RESEARCH**  
**INSTITUTE**  
 invites applications from both men and  
 women for the following position.  
**WAITE CHAIR OF AGRICULTURAL**  
**BIOCHEMISTRY**  
**(TENURABLE)**

(Reference: 1058) The chair is in the Department of Agricultural Biochemistry which was founded in 1924 and is currently concerned principally with plant and microbial biochemistry pertaining to agriculture.

The chair will become available upon the retirement of Professor Nicholas in December 1986.

**SALARY:** A\$57,036. The University of Adelaide is a participant in the Superannuation Scheme for Australian Universities, membership of which is obligatory.

**FURTHER INFORMATION:** Statements setting out the formal terms and conditions of appointment and providing details of research and facilities at the University of Adelaide, the Waite Agricultural Research Institute, and the Department of Agricultural Biochemistry are obtainable from the registrar of the university. Any further information about conditions of appointment or about the university should be sought from the registrar. Further information about research and facilities at the Waite Agricultural Research Institute and in the Department of Agricultural Biochemistry may be obtained from the institute's director, Professor J. P. Quirk, A.O., F.T.S., F.A.A.

*It is university policy to encourage women to apply for appointment to tenurable academic positions.* Holders of full-time tenured or tenurable academic appointments have the opportunity to take leave without pay on a half time basis for a specific period of up to 10 years where this is necessary for the care of children.

**APPLICATIONS, IN DUPLICATE,** quoting reference number 1058 and giving full personal particulars (including whether candidates hold Australian permanent residency status), details of academic qualifications, and names and addresses of three referees should reach: **The Senior Assistant Registrar (Personnel) at the University of Adelaide, G.P.O. Box 498, Adelaide, South Australia, 5001, Telex UNIVAD AA 89141,** not later than 31 March 1986.

The university reserves the right to make inquiries of any person regarding any candidate's suitability for appointment, not to make an appointment or to appoint by invitation.

**DIRECTOR, ARNOLD O. AND**  
**MABEL M. BECKMAN**  
**INSTITUTE FOR ADVANCED SCIENCE**  
**AND TECHNOLOGY**

Applications and nominations are invited for this position at the University of Illinois at Urbana-Champaign. The institute is a new interdisciplinary venture made possible by a \$40-million gift augmented by another \$10 million from the State of Illinois—this amount to be devoted to a building to house the institute, plus state commitment for continuing operational support. The Beckman Institute will consist of two centers: a center for materials science, computers, and computation; a center for biology, neuroscience, and cognition. There will be continuous transition from research on the atomic and molecular levels to systems of increasing complexity and higher levels of organization. The ultimate objective: to focus on "intelligence." Although the opening date for the physical facility is 3 years away, it is important that the director be found as soon as possible so that early planning and development will reflect this individual's vision. The director should be a strong leader, widely recognized for both intellectual accomplishment and demonstrated ability to administer a complex, research-oriented organization; have the ability to think in terms of multi-investigator interdisciplinary research activities; be familiar with the academic environment with experience in administration; be broadly recognized and respected both in academic institutions and by peers in government and industry. Salary open. Position available immediately. Nominations/applications with curriculum vitae should be submitted by 28 February 1986 to: William F. Prokasy, Chair, Search Committee for the Director of the Beckman Institute, c/o Chancellor's Office, University of Illinois at Urbana-Champaign, Swanlund Building, 601 East John Street, Champaign, IL 61820; telephone: 217-333-1350.

*Affirmative Action/Equal Opportunity Employer*

# MOLECULAR BIOLOGIST

The Molecular Biology Research group at Upjohn has an opening for a molecular biologist to study gene expression in mammalian cells. Molecular Biology Research is part of Upjohn's growing Biotechnology program, which has as its goals: (1) to bring state-of-the-art research in new areas of molecular and cellular biology to Upjohn, and (2) the integration of these new technologies into research programs throughout Upjohn. As part of this group, the successful applicant for this position will be expected to implement a research program on some aspect of gene expression in mammalian cells. There will also be the opportunity to participate in collaborative studies with scientists involved in drug discovery research, as well as with other scientists in the Biotechnology group.

This position requires a Ph.D. with postdoctoral experience that includes significant research accomplishments. Candidates with research interest in any aspect of the molecular biology of mammalian cells are encouraged to apply. Appointment at any level of the Scientist career path is possible for this position, so applications from individuals with established scientific reputation are welcome.

Kalamazoo is a medium-sized Southwestern Michigan community with immediate access to a mix of excellent cultural, educational and recreational pursuits, including numerous lakes and a four-season climate.

**For confidential consideration, please call outside Michigan toll-free 1-800-253-8600, Extension 3-6767, (or inside Michigan collect 616-323-6767) to request an employment application be sent to you immediately.** Please refer to Ad Number 18934-F when calling.

**Upjohn**

**A century of caring**

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# Scientific EDP Management

Smith Kline & French Laboratories, an international leader in the health care industry, has an opening for a senior biological scientist with experience in computing to plan and oversee the application of advanced computer technology to the area of Biological Research. The role of this position is to work with senior managers in Biological Sciences and Biopharmaceutical R&D to develop a broad-based computer strategy for the area, and to propose and coordinate the implementation of associated projects in the Information Sciences (EDP) department. Together with analogous positions in the Chemical, Pre-Clinical, Clinical, and Operations area, this position will have major influence on the overall direction of R&D computing.

As interaction with scientists and appreciation of both scientific and computing issues are crucial, strong experience in scientific computing is mandatory, and an advanced degree (Ph.D.) is highly desirable. Supervisory skills and project management experience are strongly preferred. This is a senior position in rapidly growing department, and offers considerable growth potential for qualified candidates.

Our research and computing resources are centered at a new R&D campus located just outside of Philadelphia. Current computing opportunities span the full range of biological science, including pharmacology, enzymology, immunology, and a major commitment to molecular biology and biopharmaceuticals. Scientific publication is strongly encouraged. Computing resources include a central and distributed facility (VIX Cluster and a proposed IBM mainframe), several high-resolution graphics systems, networked workstations (PCs), and a diverse set of scientific and business management tools encompassing real-time data collection/analysis, LIMS, modeling, robotics, and expert systems.

We offer excellent compensation and benefit program and a stimulating work atmosphere in a technologically advanced environment. Interested, qualified candidates should send CV with salary requirements to: M. O'Neill, Manager Personnel Relations, Smith Kline & French Laboratories, 1558 Spring Garden Street, Philadelphia, PA 19101. We are an Equal Opportunity Employer, M/F/H/V.

**SK&F**  
 A SmithKline Beckman Company

## FIVE RESEARCH ASSISTANT POSITIONS

The Armed Forces Radiobiology Research Institute (AFRRI) is seeking candidates for positions to assist principal investigators study the effects of ionizing radiation and tissue injury on various biologic functions and systems. The institute, a command of the Defense Nuclear Agency, is the principal radiobiology research laboratory for the Department of Defense. Three of the positions are located in the Experimental Hematology Department, which studies radiation effects on the hematopoietic system. Successful applicants for these positions (announcement Number 39A) will be able to apply knowledge of the principles of hematology, immunology, bacterial infection, and cell structure in performing tissue and cell culture techniques, and in independently developing/modifying experimental protocols. Computer literacy is desired. The other two positions are in the Behavioral Sciences Department, which conducts research studying mechanisms underlying behavioral decrements induced by ionizing radiation. Successful applicants for these positions (announcement Number 40A) will be able to apply knowledge of electrophysiology, biochemistry, and/or pharmacology in performing intracellular recording, isolating membranes from tissues, and other techniques relevant to the study of neuronal structures. These civil service positions are available immediately, are 1 to 4 years in length, and range in salary from \$18,000 to \$28,000. To apply, send curriculum vitae and/or SF-171, and reprints of representative research to: **The Armed Forces Radiobiology Research Institute, Civilian Personnel Office, Bethesda, Maryland 20814-5145** by 28 February 1986. Indicate announcement Number 39A or Number 40B. Direct inquiries to: **Vince Ackermann, Personnel Management Specialist; telephone 202-295-1426. The AFRRI is an Equal Opportunity Employer.**

**Tenure Track FACULTY POSITION—BIOCHEMISTRY/ORGANIC: ASSISTANT PROFESSOR**, beginning August 1986. Ph.D. in biochemistry required, with strong background in organic chemistry. Postdoctoral research and teaching experience required. Successful applicant will carry a standard load of 60 percent teaching, 20 percent research, and 20 percent service; instructional duties will involve teaching three 3-hour courses (or equivalent) per semester; supervision of undergraduate research will be expected. The University of Alaska, Anchorage, is a growing institution with a dynamic faculty, located in the major metropolitan area of Alaska. The greater Anchorage area has a population of approximately 240,000 people, and provides most of the student population of about 4,000 students at the university, though a growing number of students from bush communities are attending. Anchorage provides a living environment second to none with a wide variety of artistic, theatrical, and sporting activities available, plus ample shopping, restaurant, and other business facilities. Recent statistics show the cost of living in Anchorage to be comparable to other major cities in the United States. Climate is very enjoyable, with winter weather moderated by the Pacific Ocean to the south and the Alaska Range of high mountains to the west and north. Winter temperatures average between  $-5^{\circ}$  to  $25^{\circ}\text{F}$ , with summer temperatures between  $50^{\circ}$  to  $70^{\circ}\text{F}$ . The Chemistry Department consists of four full-time faculty with a wide range of research interests, and currently offers a bachelor's degree in chemistry, with a biochemistry option. Plans are being developed to begin a master's degree program in chemistry in the near future; currently the faculty work with some of the graduate students in the biology program who pursue advanced chemistry courses. Besides the degree program, the department supports a growing Engineering School and a School of Nursing and Health Sciences.

Send curriculum vitae, statement of teaching and research goals, and arrange for three letters of recommendation, plus graduate transcripts to be sent to: **Personnel Services, University of Alaska, Anchorage (UAA), 3211 Providence Drive, Anchorage, Alaska, 99508**. Closing date, 21 February 1986. Continuation of this position is subject to the availability of funds 15 for fiscal year 1987.

*UAA is an Equal Opportunity/Affirmative Action Employer and Educational Institution.*

## POSITIONS OPEN

**POSTDOCTORAL ASSOCIATE.** Department of Chemistry. To design and implement computer software to model the sequence of events occurring during reactions generated by photolysis of organic single crystals and to correlate the results with EPR, Raman, and FTIR spectroscopic observations. Candidates must have a thorough knowledge of organic solid state chemistry, prior expertise in designing and applying optimization algorithms to crystal packing techniques, as well as proven skill in crystallography and application of crystallographic program packages. Ph.D. or equivalent in physical chemistry required. Full-time position with salary of \$20,000 per year. Interested applicants should submit their résumés to: **S. Peters, Department of Chemistry, Yale University, 225 Prospect Street, New Haven, CT 06511. Yale University is an Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE.** Position in major Harvard teaching hospital. Studies focus on stimulus-secretion coupling in exocrine pancreas. Will include hormone receptor binding, G-protein measurements, calcium fluxes, phospholipid metabolism, secretion, endocytosis, and intracellular trafficking. Position available immediately and supported by NIH grant. Send curriculum vitae and names of three references to: **Dr. Michael Steer, Department of Surgery, Beth Israel Hospital, 330 Brookline Avenue, Boston, MA 02215.**

**POSTDOCTORAL POSITIONS** available immediately in molecular biology and immunology of human leukemias and lymphomas. Expertise in molecular immunogenetics, recombinant DNA technology, and/or protein chemistry are essential. Send curriculum vitae, description of research experience, and three letters of recommendation to: **Dr. Benjamin Koziner, Director, Bone Marrow and Cell Marker Laboratory, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021. An Equal Opportunity Employer.**

**POSTDOCTORAL POSITION IN MUSCLE PHYSIOLOGY** is available for 2 years to study sodium channel gating (utilizing microelectrodes and a loose-patch voltage clamp) and single skinned fiber contractility in skeletal muscle from normal and thyrotoxic adult rats. Knowledge of electrophysiological techniques and minicomputer skills is desirable. Please send résumé and two letters of reference to: **Dr. Robert Ruff, Department of Neurology, Case Western Reserve Medical School, 2074 Abington Road, Cleveland, Ohio 44106-5000.**

**POSTDOCTORAL POSITIONS (2):** Isolation, purification, and characterization of the nitrogen-fixing enzyme, nitrogenase. Background in protein isolation and/or physical biochemistry helpful. Appointments available immediately, but may start anytime. Initial appointment for 1 year, with possible extension up to 3 years. Send curriculum vitae and three letters of recommendation to: **Professor Brian J. Hales, Department of Chemistry, Louisiana State University, Baton Rouge, LA 70803. LSU is an Equal Opportunity Employer.**

**POSTDOCTORAL POSITIONS.** Two or more positions beginning between 1 February 1986 and 1 September 1986 to study molecular aspects of pathogenesis in *Escherichia coli*, *Corynebacterium diphtheriae*, and *Vibrio cholerae*. Projects use recombinant DNA and monoclonal antibody technologies to analyze bacterial toxins and other bacterial virulence factors. Background in microbial genetics, molecular biology, or biochemistry preferred; knowledge of bacterial pathogenesis helpful. Submit curriculum vitae and names of three references to: **Dr. Randall K. Holmes, Chairman, Department of Microbiology, c/o Personnel/Manpower Division, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, MD 20814-4799.** Curriculum vitae will not be returned. *Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available immediately at Baylor College of Medicine for Ph.D. with background in cellular/molecular immunology. General area of research will be systemic and pulmonary immunoregulation with emphasis on sarcoidosis and solid organ transplantation. Experience in clinical laboratory also helpful. Position is for a minimum of 1 year; salary will be competitive. Send curriculum vitae and three letters of reference to: **Dr. E. Clinton Lawrence, 6535 Fannin, F-907, Houston, TX, 77030.**

## POSITIONS OPEN

**POSTDOCTORAL POSITION** funded by a 12-month federal grant available for microbiologist/biochemist, to grow and examine "unusual" microorganisms, such as halophiles, thermophiles, and possibly protozoa with respect to coding sequences in their DNA molecules. Candidates should have experience in DNA sequencing. Send curriculum vitae and names of three references by 21 February 1986 to: **Dr. Thomas H. Jukes, University of California, Berkeley, Space Sciences Laboratory, 6701 San Pablo Avenue, Oakland CA 94608. The University of California is an Equal Opportunity/Affirmative Action Employer.**

### POSTDOCTORAL POSITION

Areas of investigation include: (i) studies of protein kinases and cyclic nucleotide phosphodiesterases and cloning of the cDNA's and genes for these proteins and (ii) regulation of processes by cAMP and cGMP in intact heart, liver, and fat cells. Please send curriculum vitae and references to: **Dr. Jackie D. Corbin, Ph.D., Department of Molecular Physiology and Biophysics, Howard Hughes Medical Institute, Vanderbilt University Medical School, Nashville, TN 37232.**

**POSTDOCTORAL POSITION** is available spring 1986 to study the nature of the differentiation block which causes human leukemia. Research focuses on how specific protein kinases (serine/threonine) modulate the transcription of oncogenes. Ph.D. experience in protein biochemistry/molecular biology is preferred. Send curriculum vitae and three references to: **Dr. Andrew S. Kraft, University of Alabama at Birmingham, Cancer Center, 513 THT, 1900 University Boulevard, Birmingham, AL 35294.**

**POSTDOCTORAL POSITION IN BACTERIAL MEMBRANE MOLECULAR BIOLOGY** available August 1986 to study membrane structure and function in a methane-producing archaeobacterium. Background in microbiology and membrane biochemistry is desirable. Salary based on experience. Send curriculum vitae and name of three references to:

**Dr. Jordan Konisky  
Department of Microbiology  
University of Illinois,  
131 Burrill Hall  
407 South Goodwin Avenue  
Urbana, IL 61801**

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

### POSTDOCTORAL RESEARCH ASSOCIATE

Seek recent Ph.D. to join physical chemistry program to study the interaction of active oxygen species (superoxide radical,  $\text{OH}^{\cdot}$ , and so forth) with cell membranes and membrane components. Experience with membranes is a prerequisite. Appointment for 1 year, renewable, with minimum salary \$22,000 per year, available immediately. Apply to: **Dr. B. Bielski, Department of Chemistry, Brookhaven National Laboratory, Associated Universities, Inc., Upton, Long Island, NY 11973. Equal Opportunity Employer, M/F.**

**POSTDOCTORAL RESEARCH ASSOCIATE** available immediately for physiologist-biomedical engineer to study the interaction between the right and left hearts and the effects of prosthetic ventricular support on the heart. Ph.D. or M.D., with experience in ventricular function desired. Send curriculum vitae and names of three references to: **David J. Farrar, Ph.D., Medical Research Institute, Department of Cardiovascular Surgery, Pacific Presbyterian Medical Center, 2200 Webster Street, San Francisco, CA. 94115. Equal Opportunity Employer.**

**PRE- AND POSTDOCTORAL** training in viruses, nucleic acids (including molecular cloning), growth, and cancer. Applications are invited for positions in an NCI interdepartmental (biochemistry, microbiology, and molecular biology) training grant program. The primary areas of study (and faculty) include epidermal growth factor (S. Cohen); mechanism of vitamin A action (F. Chytil); molecular biology of herpesviruses (T. Ben-Porat and A. S. Kaplan); poxviruses (R. Moyer); rhabdoviruses (S. Moyer); adenoviruses (C. Tibbetts); bacteriophage T4 (G. Mosig); regulation of cell proliferation (D. Friedman); ribonucleoprotein particles (W. LeStourgeon); and membrane proteins and transmembrane signaling (J. Staros). Citizens or permanent residents are eligible. Write: **Dr. Albert S. Kaplan, Department of Microbiology, Vanderbilt University School of Medicine, Nashville, Tennessee 37232.**

## NATIONAL INSTITUTE ON AGING NATIONAL INSTITUTES OF HEALTH

The Biomedical Research and Clinical Medicine Program is seeking applicants for the position of Health Scientist Administrator (Biological Sciences) to serve as a program director for the Genetics Program with contributing responsibilities to Cell Biology, Molecular Biology, and Theoretical Biology. Specific responsibilities include developing, managing, coordinating and monitoring a program of research grants, training grants, fellowships, and contracts. Applicants should have completed all requirements for a Ph.D. (or equivalent doctoral degree) in the biological or allied health sciences. Additionally, applicants must have experience which clearly demonstrate ability to work independently in planning, organizing, and conducting genetic research as well as to administer a research program; demonstrated expertise in some area of molecular genetics is preferred. The position will be filled through the Civil Service or Commissioned Corps of the U.S. Public Health Service. The grade of the position is a GS-12/13/14 with a salary range of \$31,619-\$44,430 p.a., depending on the qualifications of the applicant selected. Benefits include a retirement plan, health and life insurance, sick and annual leave. Duty Station — Bethesda, Maryland. U.S. Citizenship required.

Any applicant not currently employed in the Federal Government as a Health Scientist Administrator will be required to obtain an eligible notice of rating. Submit application (SF-171), curriculum vitae, and bibliography to: Ms. Sara Benesch, Personnel Office, National Institute on Aging, Building 31-Room 2B63, National Institutes of Health, 9000 Rockville Pike, Bethesda, Maryland 20892. Applications must be received or postmarked by March 31, 1986. Call Ms. Benesch at (301) 496-5347 for further information.

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EMPLOYER

## DIRECTOR WATER RESOURCES LABORATORY

### UNIVERSITY of LOUISVILLE

Director of Water Resources Laboratory, College of Arts and Sciences, will be a senior faculty member tenured in Biology Department, beginning summer 1986, and will manage the laboratory, which conducts research in aquatic biology, hydrology, and water chemistry. Director will be an aquatic biologist with expertise in a suitable subdiscipline (for example, invertebrate zoology, biological limnology, aquatic toxicology, and so forth). Ability to obtain grants and contracts for research is required. Teaching responsibilities in aquatic biology will include one course/semester and supervision of graduate (M.S. and Ph.D.) students in Biology Department. Applications must be received by 14 March 1986. Submit curriculum vitae, list of publications, and names, addresses, telephone numbers of at least four references to:

Dr. Burt L. Monroe, Jr.,  
Chair, Search Committee,  
Department of Biology,  
University of Louisville,  
Louisville, KY 40292.

Equal Opportunity Employer/Affirmative Action.

## CAREER OPPORTUNITIES

### Center of Marine Biotechnology

The University of Maryland, located in the Baltimore/Washington D.C. Metropolitan area, is currently seeking seasoned professionals to fill the following positions:

### DIRECTOR

We invite applications and nominations for the position of Director of the Center of Marine Biotechnology. Candidates must possess an earned doctorate; an outstanding record of scholarship and research in a marine science; administrative experience and a demonstrated ability to function effectively in a complex institutional setting; the ability to work cooperatively and creatively in program development and management. The successful candidate will be expected to provide leadership to develop the Center into an internationally recognized research program. Compensation will be commensurate with background and experience. Send letters of application and nominations to the address below.

### RESEARCH SCIENTISTS

Individuals with a record of excellence in research who can apply state of the art techniques in chemistry, biochemistry, molecular biology, and cell biology to developing innovative research programs in marine biotechnology are encouraged to apply for Staff Scientists positions. Candidates with expertise in any of the following fields are being sought: marine natural products chemistry; biofouling; biosensing; biodegradation; and molecular genetics of fish and shellfish. Salary will be commensurate with qualifications and experience. Send (i) curriculum vitae, (ii) an outline of research interests, and (iii) names and addresses of three references to:

Dr. Fred Singleton, Center of Marine Biotechnology, c/o Office of the Vice President for Academic Affairs Central Administration, University of Maryland, Adelphi, Maryland 20783.

Applications received by March 1, 1986 will be given preference, however, others will be accepted until all positions are filled.



THE UNIVERSITY OF MARYLAND

EOE

## RESEARCH SCIENTISTS EXPERIMENTAL HEMATOLOGY

Amgen, an established biotechnology company with a broad technological base, is seeking **Research Scientists**. Qualified candidates will have a Ph.D. or M.D. degree and at least three years postdoctoral or equivalent experience involving *in vitro* and *in vivo* hematopoietic and immunological assays. Amgen currently has several major programs addressing the biological roles of **Human Lymphokines** and **Cytokines**. Our recent advances with **Interleukin-2**, **Erythropoietin** and a **Pluripotent Colony-Stimulating Factor** have made us a leader in the field of **Biological Response Modifiers**.

Amgen offers a stimulating research environment and maintains close association with academic institutions through research collaborations and its Scientific Advisory Board. Research activity at Amgen will lead to health care and industrial chemical products based on recombinant DNA and hybridoma technologies.

We offer an excellent salary and benefits package as well as equity participation. Applications, including a curriculum vitae and the names of three references, should be sent to:

Personnel Department.

**AMGEN**

1900 Oak Terrace Lane,  
Thousand Oaks, CA 91320



An Equal Opportunity Employer

## Benefit from our Reputation

Syntex has earned its reputation in the pharmaceutical industry for superior research — our research is thorough and our equipment is the most sophisticated available. We currently have two outstanding opportunities available for experienced professionals to join us:

### Sr. Clinical Veterinarian

Serve as Sr. Clinical Veterinarian and Department Head for our Department of Laboratory Animal Services, Institute of Toxicologic Sciences, Syntex Research. Your primary responsibilities will include all aspects of laboratory animal care — diagnostic, preventive and therapeutic medicine. Managing the professional and technical staff of the department as well as playing an instrumental role in providing scientific and technical advice to research investigators are integral parts of this position. Requires a DVM or equivalent and 5-7 years experience as a Clinical Laboratory Animal Veterinarian in a large laboratory animal research facility. You must also have strong organizational, management and communication skills. Certification as a diplomate in the American College of Laboratory Animal Medicine is highly desirable.

### Toxicologist

You will be responsible for implementing, monitoring and reporting pre-clinical toxicology studies. These studies will be used to support national and international regulatory findings for new drug registrations. Strict adherence to established SOPs and GLPs is required. You should possess a PhD in Toxicology or related discipline and 0-3 years post doctoral training or industrial toxicology experience, especially in a pharmaceutical or contract firm. Familiarity with regulatory requirements, good interpersonal and communication skills, and the ability to work in a team structure are essential.



To apply, send your resume and salary history to Syntex, Professional Employment, Dept. PS, 3401 Hillview Avenue, Palo Alto, CA 94304. Principals only, please. We are an equal opportunity employer.

## RESEARCH TRIANGLE UNIVERSITIES PLANT MOLECULAR BIOLOGY Graduate and Postdoctoral Fellowships

Duke University, North Carolina State University at Raleigh, and the University of North Carolina at Chapel Hill together with the North Carolina Biotechnology Center have formed a Consortium to advance studies in plant molecular biology. With support from CIBA-GEIGY, R.J. Reynolds Industries, and the Biotechnology Center, the Consortium will provide a limited number of graduate and postdoctoral fellowships in 1986 for study and research in plant molecular biology at the three Triangle universities. Each fellow will be based at one of the institutions, but will participate in activities involving faculty and students at all involved institutions. The goal of the Consortium is to enhance the community of plant molecular biologists among universities and participating companies. Graduate and postdoctoral fellows appointed in 1984 and 1985 are already in place.

The graduate student stipend is \$8,000 plus tuition, with an allowance for supplies and travel. The award is renewable for up to three years. The postdoctoral stipend is \$21,500, subject to university policies, with an allowance for supplies and travel, renewable for up to two years.

Candidates must apply directly to departments or postdoctoral sponsors at the universities, and must notify them of their interest in the Plant Molecular Biology Program. Acceptance at the institution is a prerequisite of the Fellowship Program.

**Contacts:** Frank Armstrong, NCSU [(919) 737-7876]; Ann Matthyse, UNC-CH [(919) 962-6941]; and John Boynton, Duke [(919) 684-3046].

Graduate student application materials must also be received at the NCBC by March 3 and must include: (1) a *brief* statement of research and career interests; (2) the departments of NC universities receiving applications; (3) transcripts and GRE scores; and (4) three letters of reference. A copy of a letter sent to the department(s) clearly granting permission to release (3) and (4) to the NCBC is acceptable. Postdoctoral applications must be submitted by March 10 and should follow the format of NIH postdoctoral applications, complete with research description, and three letters of reference. The applicant is responsible for the sponsor's submission of a statement of what he/she will commit to the program.



**NORTH CAROLINA  
BIOTECHNOLOGY CENTER**

Box 13547 • RESEARCH TRIANGLE PARK, NC • 27709

## Research Assistants/ Technicians

Agracetus, a world leader in agricultural biotechnology, seeks innovative and self-motivated individuals to join our plant genetic engineering group. They will be part of an exciting program directed towards understanding and developing gene transfer and expression in plants. Candidates must have a B.S. or M.S. degree with one or more years of experience in molecular biology. Letters of application should include a detailed description of experience in recombinant DNA techniques.

We offer a competitive salary, a comprehensive benefits package and advancement opportunity.

Please send your resume to: **Personnel Department, Agracetus, 8520 University Green, Middleton, WI 53562.** We are an Equal Opportunity Employer.

**Agracetus**



**NATIONAL INSTITUTES OF HEALTH  
NATIONAL INSTITUTE OF ARTHRITIS,  
DIABETES, AND DIGESTIVE AND  
KIDNEY DISEASES (NIADDK)  
DIVISION OF KIDNEY, UROLOGIC,  
AND HEMATOLOGIC DISEASES**

Academic Nephrologist—BC/BE with interest in administering grant programs and continuing an active basic research program. Full-time position. Includes developing, monitoring, and evaluating kidney and urology problems. Adequate time available to pursue research interests. Salary is negotiable, commensurate with qualifications and experience. How to apply: submit a Personal Qualifications Statement, (SF-171), curriculum vitae, bibliography, and names of three references to:

**Mr. Clifford Moss  
Personnel Officer, NIADDK  
Building 31, Room 9A34  
9000 Rockville Pike  
Bethesda, Maryland 20892  
Phone (301) 496-4231**

*NIH is an equal opportunity employer; women and minorities are encouraged to apply.*

**NIGERIAN UNIVERSITIES**

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

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

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

**QUALIFICATIONS**

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

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



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

\*APPLICATIONS ARE ALSO WELCOME FROM UNIVERSITY PERSONNEL WHO WOULD LIKE TO SPEND THEIR SABBATICAL LEAVES IN NIGERIAN UNIVERSITIES.

PLEASE NOTE THE SALARY SCALE AND EXCHANGE RATE OF:

FULL PROFESSOR	USS 15	₦14,280-15,720
READER	USS 14	₦12,732-15,372
SENIOR LECTURER	USS 13	₦11,364-14,820
LECTURER I	USS 11	₦ 9,000-10,080
LECTURER II	USS 9	₦ 7,550- 8,162

RATE: ₦1 = US \$1.15

**VIROLOGIST**

The Hyland Therapeutics Division of Travenol Laboratories has an immediate opening for a virologist with a PhD and a minimum of 2 years' past doctoral experience in the molecular biology of viruses.

The successful applicant will develop an ongoing program of basic research on human viruses and will also support several mission-oriented projects. The latter will include removal or inactivation of viruses or viral nucleic acids from therapeutic products produced from human plasma, from human hybridoma cultures and from cultures of other mammalian cells modified by our DNA techniques.

Candidates should have demonstrated skills in nucleic acid chemistry and a working knowledge of mutagenesis and oncogenesis. Salary and responsibility are commensurate with skills and experience.

For consideration, send your resume and the names of 3 references to: Dr. John A. Hooper.



1710 Flower Ave., Duarte, CA 91010  
An equal opportunity employer

**VACANCY ANNOUNCEMENT**

**U.S. ENVIRONMENTAL PROTECTION AGENCY**

The Environmental Protection Agency invites applications for the potential opening of the position of Deputy Director, Health Effects Research Laboratory (HERL). This is a Civil Service position located at the Research Triangle Park, NC, with an annual salary at the GM-15 level (presently \$52,262-\$67,940).

The HERL conducts research to evaluate the effects of the environment on human health. This involves in vitro and in vivo toxicology, human clinical, and epidemiology studies of air and water pollutants, non-ionizing radiation, bio pesticides, and water-borne microbes. The HERL has a multi-disciplinary staff of about 300, 100 of whom hold doctoral level degrees. The laboratory is organized into Divisions in the Research Triangle Park (Inhalation Toxicology, Genetic Toxicology, Experimental Biology, Neurotoxicology, Developmental Biology, and Biometry) and Cincinnati (Toxicology and Microbiology). The principal duties of the position are to assist the Director in the scientific management of HERL and direct the administration of the Laboratory.

The candidate must have the following proven scientific and managerial qualifications:

An M.D. or Ph.D./D.Sc. in a biological discipline or toxicology, at least 10 years of experience in environmental/occupational toxicology research as evidenced by publications in the peer-reviewed literature, national and international recognition in toxicology.

At least 5 years of experience in managing a multidisciplinary toxicological research organization having an annual budget in excess of two million dollars. Previous responsibilities shall have included: supervision (including supervision of other supervisors); interpretation and application of higher level policy to the local organization; development of local policies; development of goals and management of achieving and reviewing goals; development and enactment of program priorities; management of resources (funds, personnel, facilities); administration as related to budget, personnel and facilities; coordination of programs; and communication of programs within and outside the organization.

Forward curriculum vitae and the names of three persons we can contact for references to: **Dr. Gordon Hueter, Director, Health Effects Research Laboratory, c/o Personnel Management Division (MD-29), Research Triangle Park, North Carolina 27711, by March 7, 1986.**

## POSITIONS OPEN

### POSTDOCTORAL RESEARCH

Postdoctoral research position available immediately to study the effect of new antiparkinsonian drugs on MPTP-treated primates. Current work includes the measurement of local cerebral glucose metabolism, receptor autoradiography, and HPLC for catecholamines in brain. Stipends consistent with NIH guidelines. Send curriculum vitae and three letters of reference to: **Robert J. Schwartzman, Chairman, Department of Neurology, Jefferson Medical College, 1025 Walnut Street, Philadelphia, PA 19107. Equal Opportunity Employer.**

### POSTDOCTORAL RESEARCH ASSOCIATES

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

### POSTDOCTORAL RESEARCH ASSOCIATE

Recent Ph.D. to carry out research on the mechanisms of action on various nucleic acid substrates of several kinetically distinct forms of a nuclease (BAL 31 nuclease) and to work on cloning/sequencing of the nuclease gene(s). Some supervisory responsibility. Position available immediately for 21 months at \$20,700 per year. Send curriculum vitae and names of three references to: **Dr. Horace Gray, Jr., Department of Biochemical and Biophysical Sciences, University of Houston, Houston, TX 77004. Deadline: 28 February 1986. An Affirmative Action/Equal Opportunity Employer.**

### POSTDOCTORAL RESEARCH FELLOW

Three-year appointment, preferably beginning 1 July 1986, with training in cell biology and/or biochemistry (Ph.D. or M.D. with laboratory experience). Research on assembly and structure of normal and diabetic basement membranes using biochemical, immunochemical, and molecular morphological techniques. Send curriculum vitae to: **Dr. Peter D. Yurchenco, Department of Pathology, University of Medicine and Dentistry of New Jersey-Rutgers Medical School, Piscataway, NJ 08854. An Equal Opportunity/Affirmative Action Employer, M/F/H/V.**

POSTDOCTORAL RESEARCH POSITION available now. Recent Ph.D. in biochemistry or molecular biology to conduct structure-function studies of eukaryotic mRNA using chimeric mRNA's or role of 5'-cap in RNA splicing. Experience in recombinant DNA techniques and RNA chemistry helpful but not necessary. Salary is \$18,000 to \$20,000 per year, depending on experience, with possibility of renewal. Send curriculum vitae and names of three references to: **Dr. Stanley M. Tahara, Department of Microbiology, University of Southern California School of Medicine, 2011 Zonal Avenue, Los Angeles, CA 90033.**

### RESEARCH ASSOCIATE/RESEARCHER (NEUROPHARMACOLOGY)

Department of Internal Medicine has a position for a research associate/researcher to work in neuropharmacology of Parkinson's disease and movement disorders. Qualifications include a Ph.D. or master's degree, with experience in laboratory research. Preference will be given for experience in the following areas: neuropharmacology, biochemistry, neurochemistry, and familiarity with the operation of HPLC. Resumes accepted through 21 February 1986, or until the position is filled. Send resumes to: **Bala V. Manyam, M.D., Department of Internal Medicine, School of Medicine, Southern Illinois University, P.O. Box 3926, Springfield, Illinois 62708. An Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### HARVARD MEDICAL SCHOOL PROFESSOR OF MICROBIOLOGY AND MOLECULAR GENETICS

Applicants are invited for the position of **PROFESSOR OF MICROBIOLOGY AND MOLECULAR GENETICS**, Harvard Medical School. Candidates should have strong credentials in the area of fundamental mechanisms of bacterial pathogenesis. Major responsibilities will include supervision of an active research program and teaching in the area of bacterial pathogenesis. Applicants should submit current curriculum vitae and bibliography to: **Dr. Priscilla A. Schaffer, Chairman of the Search Committee, Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115.**

*Harvard Medical School is an Equal Opportunity/Affirmative Action Employer. Qualified female and minority applicants are encouraged to apply.*

**PROGRAM SPECIALIST—PUBLICATIONS.** Responsible for writing, editing, scheduling, and coordination of design and production of print materials complementing and promoting educational and exhibition programs. Involves maintaining project budgets, developing marketing strategies, and editing label copy. Requires participation in extensive natural history and anthropological exhibit renovation program. Qualifications include an M.A. in English/journalism and 3 years of experience in print production, including technical or natural history editing. Natural history background preferred. Base salary of \$18,000, plus benefits is adjustable based on experience. Send resume and three references by 15 March 1986 to **Judith Bobenage, Chairman, Division of Education, Carnegie Museum of Natural History, 4400 Forbes Avenue, Pittsburgh, PA 15213. Affirmative Action/Equal Opportunity Employer.**

**RESEARCH ASSOCIATE.** Position available now for Ph.D. neuroscientists to join laboratory studying pharmacogenetics of alcohol and other CNS drugs in selectively bred lines of mice. Prefer experience in neuropharmacology or neurochemistry of seizures, but all areas will be considered. Potential for Oregon Health Sciences University faculty appointment. Send letter and 1 to 3 relevant publications to: **John Crabbe, Ph.D., Research Service (151), VA Medical Center, Portland, OR 97201.**

**STREAM ECOLOGIST. UNIVERSITY OF KANSAS, KANSAS BIOLOGICAL SURVEY.** Assistant scientist. Ph.D. in biology, ecology, environmental science, or related area required. Full-time appointment. Responsibilities include development and maintenance of active research program. Suitable research could include interaction of lotic and lentic systems, stream flow analysis, and modeling; physical, chemical and hydrological properties of lotic, and lentic systems. Postdoctoral research experience preferred. Send curriculum vitae, publications, statement of goals, and three letters of recommendation by 14 March 1985, 5:00 p.m. to: **Dr. Frank deNoyelles, Jr., Chairman, Search Committee, Kansas Biological Survey, 2291 Irving Hill Drive, Campus West, University of Kansas, Lawrence, KS 66045-2969.**

**VISION SCIENTIST.** A junior research position for a Ph.D. experimental psychologist is available in the Department of Research at the Lighthouse (the New York Association for the Blind). Research interests should include psychophysical studies of low vision and the aging human visual system. Send curriculum vitae, three letters of recommendations, and reprints of recent publications to: **Search Committee, Department of Research, New York Association for the Blind, 111 East 59 Street, New York, NY 10022.**

**ZOOLOGIST.** Continuing appointment available August 1986 in the Department of Biology, The Pennsylvania State University, Berks Campus, Reading, Pennsylvania. Duties include teaching general biology/zoology and basic human anatomy and physiology for allied health majors. Genetics or ecology background desirable. Continuing scholarly activity, including research and publication, will be required. Salary and rank commensurate with qualifications. Application deadline: 15 March 1986. Send curriculum vitae, transcripts, and three letters of reference to: **Dr. William H. Neff, Box G, 208 Mueller Building, University Park, PA 16802. An Affirmative Action/Equal Opportunity Employer.**

## POSITIONS OPEN

**PROTEIN CRYSTALLOGRAPHER.** Postdoctoral research associate position available immediately. Will participate in NIH-funded theoretical studies on protein folding. Opportunity also for structural investigations within the Biology Department and at the protein crystallography station at the National Synchrotron Light Source. Send curriculum vitae and names of at least three references to: **Dr. Robert M. Sweet, Biology Department, Brookhaven National Laboratory, Associated Universities, Inc., Upton, Long Island, NY 11973. Equal Opportunity Employer, M/F.**

**RESEARCH BOTANIST:** The Systematic Botany, Mycology, and Nematology Laboratory, U.S. Department of Agriculture, Agriculture Research Service, Biosystematics and Beneficial Insects Institute, Beltsville, Maryland, is seeking a research botanist specializing in the systematics of grasses to coordinate and contribute to a revision of the Manual of Grasses of North America. Additional duties include research on the systematics of grasses relevant to agriculture. A Ph.D. in botany and knowledge of computerized methods of constructing keys and descriptions is desirable. Must be a U.S. citizen. Salary at GS-11/12 (\$26,381 to \$31,619). Call Dr. Amy Rossman for position information (301-344-3364). Send a statement of research goals, curriculum vitae, OPM Standard Form 171 (available on request), and names of three references to: **R. Cunningham, USDA, Agricultural Research Service, Personnel Operations Branch, Room 107, B 003, BARC-West, Beltsville, MD 20705; telephone 301-344-3954.** Applications in response to this advertisement should be marked 5E028. Deadline for application is 30 March 1986. *An Equal Opportunity Employer.*

### HUDSON RIVER FOUNDATION

The Hudson River Foundation, a privately endowed nonprofit institution that seeks to foster knowledge of the Hudson River watershed, river, and estuarine regions through funding and coordinating research and educational programs, invites applications for two positions.

**SCIENCE OFFICER.** Individual will supervise the processing of grant applications and awards. Primary responsibility is to work with science panel and panel chairman in developing research, education, and information programs. We seek someone with a Ph.D. in a field relevant to the research objectives of the foundation, research experience, and the ability to interact with private and public groups interested in the knowledge and well-being of the Hudson River ecosystem. Salary negotiable.

**INFORMATION MANAGEMENT SPECIALIST.** We seek an individual skilled in data management and analysis and in communicating a wide range of information to a broad scientific and lay audience. Background in science desirable, but not essential. Salary will be commensurate with training and experience.

Send application, curriculum vitae, and a short statement of qualifications and interest, and arrange to have three letters of reference sent by 31 March 1986 to:

**Ross Sandler, Executive Director  
Hudson River Foundation  
122 East 42nd Street  
New York, New York 10168**

*The Hudson River Foundation is an Affirmative Action/Equal Opportunity Employer.*

**STRATIGRAPHY-INVERTEBRATE PALEONTOLOGIST.** The Department of Geology is soliciting applications for a faculty position in stratigraphy-invertebrate paleontology to begin in the academic year 1986 to 1987. The position will be filled at the assistant professor rank in a nontenure track, but with the possibility of becoming tenure-track. The Ph.D. is required by the time of appointment. The successful applicant is expected to teach graduate courses in his/her specialty, supervise graduate research, and help teach undergraduate courses in historical geology, stratigraphy, and paleontology. He/she is expected to pursue a vigorous research program and should have demonstrated research experience in stratigraphy-paleontology with an interest in geobiology. Curriculum vitae, list of publications, a brief statement of research interests and goals, and the names of three referees should be sent to: **F. R. Siegel, Chairman, Department of Geology, The George Washington University, Washington, DC 20052. The George Washington University is an Equal Opportunity/Affirmative Action Employer and encourages applications from all qualified scientists.**

# RESEARCH SCIENTISTS

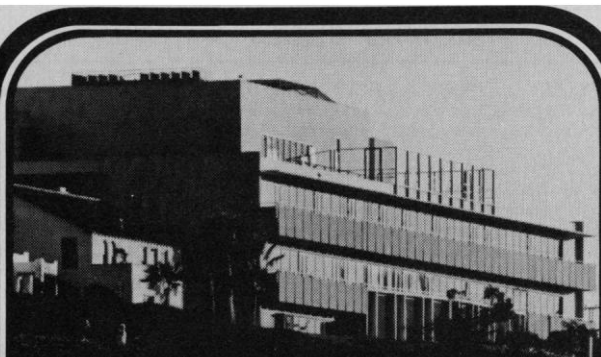
The R&D division of a major Italian conglomerate is expanding the staff in its laboratories in Rome and Milan, Italy devoted to research activities in the following areas:

- \*Biotechnology
- \*Homogeneous and heterogeneous catalysis
- \*Advanced Materials
- \*Solid-state Physics
- \*Advanced Chemical Engineering

Ideal candidates are highly motivated individuals who possess Ph.D. degrees and have had post-doctoral experience or 2-5 years of productive research in the above mentioned areas. They will work in a multidisciplinary team of scientists for the development of new research lines. We offer competitive salaries commensurating with experience, excellent benefits, and opportunities for professional growth.

Qualified applicants should send curriculum vitae and references to:

**Box 286  
SCIENCE**



SIBIA is an established biotechnology company involved in a wide spectrum of innovative research programs. SIBIA, with a staff comprised of leading scientific members and with close ties to very senior academic consultants, provides an exceptional scientific research environment in which to work plus a modern laboratory located near the ocean on Coast Boulevard in La Jolla. The broad range of research programs encourages multidisciplinary interaction.

*Applications are requested for the following positions:*

## STAFF RESEARCH SCIENTISTS/ SENIOR RESEARCH SCIENTISTS

### MOLECULAR CELL BIOLOGY

Ph.D. in Molecular Biology with 2-7 years of research experience in Molecular and Cellular Biology, including recombinant DNA and nucleic acid hybridization techniques as well as familiarity with gene regulation and expression in procaryotic and eucaryotic systems. Positions available for scientists with recombinant DNA and gene expression research experience in:

- ANIMAL VIRUS SYSTEMS,  
ESPECIALLY RETROVIRUSES
- YEAST SYSTEMS
- MAMMALIAN SYSTEMS

### BIOCHEMISTRY

Ph.D. in Biochemistry with 3-7 years experience in protein and peptide chemistry and enzymology. Experience in modern Biochemistry and an interest in establishing interactive research programs in Molecular and Cellular Biology and Microbiology desirable.

We offer a comprehensive benefits package and competitive salaries. For confidential consideration, please submit your curriculum vitae, a statement of research interests and goals, a list of publications, if applicable, and the names of three professional references to:



**SIBIA**

THE SALK INSTITUTE  
BIOTECHNOLOGY/INDUSTRIAL ASSOCIATES, INC.  
Department 4048, 505 Coast Boulevard South  
La Jolla, CA 92037  
An Equal Opportunity Employer

## POSITIONS OPEN

**RESEARCH ASSISTANT-ECOLOGIST.** Biological weed control and the regulation of plant populations by herbivores. Requires strong background in population ecology of plant/insect interactions and M.S. or Ph.D. degree in a biological science, with an emphasis in ecology. Application deadline is 1 March 1986. Starting date is 1 April. Two-year, full-time appointment. Salary: \$15,000 per year. Send résumé, statement of qualifications, transcripts, and three letters of reference to: P. B. McEvoy, Department of Entomology, Oregon State University (OSU) Corvallis, OR 97331. OSU is an Affirmative Action/Equal Opportunity Employer, and complies with Section 504 of Rehabilitation Act of 1973.

**RESEARCH ASSOCIATE:** A position is available immediately at the Surgical Oncology Laboratory, East Orange VA Medical Center, East Orange, New Jersey, to study in vitro and in vivo activity of anticancer agents against human tumors. Candidates with experience in cell biology, tissue culture, and nucleic acid biochemistry preferred. Salary GS-11 level. U.S. citizenship required. Send curriculum vitae and names of three references to: Dr. Karimullah Zirvi, Department of Surgery (G507), University of Medicine and Dentistry of New Jersey-New Jersey Medical School, 100 Bergen Street, Newark, New Jersey 07103.

**RESEARCH ASSOCIATE,** biochemistry, molecular biology, or allied science Ph.D.; to study heme biosynthetic enzymes using monoclonal antibody technology. Initial 1-year appointment, possible renewal. Résumé to: M. B. Poh-Fitzpatrick, Department of Dermatology, Columbia University College of Physicians and Surgeons, 630 West 168 Street, New York, NY 10032. Affirmative Action/Equal Opportunity Employer.

**RESEARCH FELLOW/RESEARCH ASSOCIATE** position. Biochemist/immunochemist to join a multidisciplinary laser-medicine group working on the application of chromophore-conjugated monoclonal antibodies to cancer therapy. Must have experience in isolation and purification of monoclonal antibodies and fragments, immunochemical characterization, immunoassays, and be familiar with protein modification chemistry. Knowledge of hybridoma techniques is desirable. Send curriculum vitae and three letters of reference to: Professor John A. Parrish, Director, Wellman Laboratory, Photomedicine Research, Harvard Medical School/Massachusetts General Hospital, Boston, MA 02114.

## NSERC—UNIVERSITY RESEARCH FELLOWS

The University of Saskatchewan, Department of Biology, invites applications for research professorships in the following fields: forest ecology, vertebrate zoology, limnology, and plant pathology. Candidates who succeed in the NSERC open competition will be appointed at the assistant professor level. Remuneration will be based on the current salary scale at the University of Saskatchewan (1 April 1986: \$29,501 to \$38,009).

Applicants must hold the Ph.D. degree and have at least 2 years of postdoctoral experience. Only those who have a demonstrated ability to carry out productive and independent research of a high calibre will be considered. NSERC fellowships are open only to Canadian citizens or permanent residents of Canada.

Qualified individuals should send their curriculum vitae, a brief description of their research objectives, and the names of three referees before 15 April 1986 to: Dr. John King, Head, Department of Biology, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0.

**RESEARCH PHYSICIST** (D.O.T. Number 015.061-018). Conducts research into problems of atomic energy systems; designs, develops, and monitors atomic and molecular equipment. Primarily deals with research concerning low-energy experimental electron scattering. Designs and constructs electrostatic optics for focusing and performs energy analysis of low-energy electron beams, computer interfacing, and/or electronics. Extracts, collects, and records pertinent data. Prepares technical reports. Must be experienced with low-energy electron-scattering techniques. Ph.D. in physics required. If Ph.D. pending, will consider candidates who will complete degree by or before May 1986. Must have 1 year of experience in the job offered or 2 years of experience as a research assistant-physicist. Salary: \$22,000 per year, 40 hours per week, 8 a.m. to 5 p.m.

Apply at the Texas Employment Commission, Denton, Texas, or send résumé to: The Texas Employment Commission, TEC Building, Austin, Texas 78778, job order No. 4422827. Ad paid by an Equal Employment Opportunity Employer.

## POSITIONS OPEN

### RESEARCH FELLOW

Postdoctoral position suitable for recent Ph.D. supported by NIH training program immediately available for cellular immunologist to study the migration and regulation of B cells in the mucosal immune system of mice. Opportunity to work with T-cell clones that help IgA responses. Applicant must be U.S. citizen, noncitizen national, or have been admitted for permanent residence at the time of application. Send curriculum vitae and the names, addresses, and telephone numbers of three referees to: Dr. Julia M. Phillips-Quagliata, Department of Pathology, New York University Medical Center, 550 First Avenue, New York, NY 10016.

**POSITION OPENINGS: SENIOR SCIENTISTS (2) AND PLANT CELL BIOLOGIST RESEARCH.** Del Monte Corporation is seeking effective plant cell biologists to fill challenging positions in its Corporate Biotechnology Research Center. This newly established facility is located at Del Monte Corporation's Agricultural Research Center in San Leandro, California. The two Ph.D.-level senior scientists will be responsible for novel and creative scientific thought, for effective decision-making in project planning, management, and execution, and for active participation in cell culture research. They also will be responsible for interfacing cell biology with plant breeding and molecular biology, as well as for bridging these disciplines.

Appropriate areas of background, experience, and expertise include, but are not restricted to, cell biology, physiology, biochemistry, or cellular genetics. Additional knowledge/experience in molecular biology, protein biochemistry, enzymology, biochemical/molecular pathology, cytogenetics, computer science, statistics, or anatomy/microscopy will strengthen an application.

The open and progressive management style at Del Monte's Agricultural Research Center is people oriented. You will be encouraged to contribute your ideas and to take initiative and realize them. You will be encouraged toward individuality in a team environment.

Applications, inclusive of college transcripts, and the name, address, and telephone number of four references, should be sent to: Jack Yarbrough, Personnel Officer, Del Monte Corporation, Agricultural Research Center, P.O. Box 36, San Leandro, CA 94577.

Del Monte is an Equal Opportunity/Affirmative Action Company.

### STAFF CLINICAL/RESEARCH POSITION

The Clinical Investigations and Patient Care Branch of the National Institute (NIH) of Dental Research is seeking applicants for a staff position available 1 May 1986. The successful individual must be licensed to practice dentistry in the United States and have advanced research training and experience. The position includes a combination of direct patient care (general inpatient hospital dentistry; ~30 percent) and conducting clinical/laboratory research studies (in the area of salivary glands/oral soft tissues; ~70 percent). Salary and rank will be commensurate with experience. Interested individuals should submit curriculum vitae, bibliography, and the names of three references to: Dr. Bruce J. Baum, Clinical Director and Chief, Clinical Investigations and Patient Care Branch, National Institute of Dental Research, Building 10, Room 1A-06, Bethesda, Maryland 20892. NIH is an Equal Opportunity Employer.

### TOXICOLOGY

Applications are invited for two tenure-stream positions in toxicology/pharmacology, one senior and the other at junior rank. Major responsibilities will be in toxicology and pharmacology in the pharmacy program, with lesser duties in new toxicology graduate program.

Successful candidates will be expected to develop independent research in toxicology in relation to drugs, drug residues, and toxic chemical metabolism in collaboration with Departments of Biochemistry, Chemistry, and Medicine.

Applicants must have a Ph.D. in an area relevant to toxicology and a background in pharmacy or pharmaceutical sciences would be useful. Evidence of successful teaching and established research, particularly for the senior position, will be required. Appointment subject to final budgetary approval. Salary negotiable.

In accordance with Canadian immigration requirements, (priority will be given to) Canadian citizens and landed immigrants. Applications, with curriculum vitae and the names of three referees should be directed to: Dr. Gerald R. Duncan, Director, School of Pharmacy, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3V6.

## POSITIONS OPEN

**RESEARCH ASSOCIATE:** Position available to conduct research on sensory transduction in microorganisms and the physical and chemical characterization of human milk proteins and their interaction products. Suitable candidates will have extensive experience in microbial genetics, bacterial chemotaxis, and protein purification and characterization, as well as the ability to write computer programs to analyze physico-chemical data. Candidates must have a Ph.D. in biochemistry and 2 to 3 years of postdoctoral experience in the areas mentioned above; \$413 weekly salary. Only U.S. citizens may apply. Send this ad and a résumé to: Job Number DA6204, P.O. Box 9560, Sacramento, CA 95823-0560, not later than 28 February 1986. Interview and job site: Loma Linda, California.

### RESEARCH POSITION

#### Project Associate/Assistant Scientist

Project associate/assistant scientist position open for candidates with a Ph.D. in immunology. Major areas of research include heart and limb transplantation. Expertise in the biology of endothelium, dendritic cells, and lymphocytes preferable. Salary commensurate with experience. Apply to: Venkat Rao, M.D., Department of Surgery, Clinical Science Center, 600 Highland Avenue, Madison, WI 53792. The University of Wisconsin is an Affirmative Action/Equal Opportunity Employer.

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## FELLOWSHIPS

### POSTDOCTORAL FELLOWSHIPS IN CELL AND DEVELOPMENTAL BIOLOGY

The Department of Zoology at Arizona State University announces availability of two postdoctoral positions, each having research and teaching responsibilities. Fellows are expected to maintain an active research program in the laboratory of Dr. Douglas E. Chandler or Dr. David G. Capco and to apply for extramural research support. Preference will be given to candidates with interests in early development, fertilization, the cytoskeleton, or in control of exocytosis. Teaching duties will be limited to one course each semester in cell, developmental, or general biology. Both positions start 16 August 1986, include an academic year salary, and are renewable for 3 to 4 years. To apply, send curriculum vitae, list of publications, three letters of reference, and a statement of research interests to: Dr. David Capco, Cell/Developmental Search Committee, Department of Zoology, Arizona State University, Tempe, AZ 85287.

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**POSTDOCTORAL FELLOWSHIP IN MOLECULAR BIOLOGY/IMMUNOLOGY OF PARASITES:** University of Pennsylvania. Program seeks to apply molecular biological and immunologic techniques to the study of immunopathology and resistance induced by exposure to schistosoma, trichinella, and malaria. Opportunities exist for both basic laboratory and applied clinical studies. Please send curriculum vitae, descriptive letter of interests, and names of three references to: S. Michael Phillips, M.D., Geographic Medicine, Immunology, 519 Johnson Pavilion, University of Pennsylvania, School of Medicine, Philadelphia, PA 19104.

### HARVARD SCHOOL OF PUBLIC HEALTH POSTDOCTORAL FELLOWSHIPS



Interdisciplinary Programs in Health (IPH) invites applications from promising graduates of advanced degree programs in the natural or social sciences interested in turning to research in environmental health and public policy. The program focuses on the scientific and analytical foundations for environmental decisions. In addition to individual research, recent group projects include monographs on the molecular and cellular basis of toxicity, and the susceptible individual and environmental regulation. Further studies will be adapted to interests of fellows. Studies on groundwater contamination and risk analysis are under consideration.

Fellows will be appointed for a term of 1 year starting September 1986. Award may be renewed. Application deadline: 7 March 1986. Decisions announced in May.

For information, write to:

Professor Donald F. Hornig  
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Harvard School of Public Health  
665 Huntington Avenue  
Boston, MA 02115

**MOLECULAR NEUROBIOLOGY POSTDOCTORAL FELLOWSHIPS.** To join a group studying early development of the nervous system we require (i) a molecular biologist experienced in hybridoma technology or nucleic acid hybridization (ii) an electron microscopist experienced in immunocytochemistry. Apply to: Marcus Jacobson telephone: 801-581-6720, Department of Anatomy, University of Utah Medical School, Salt Lake City, UT 84132. The University of Utah is an Equal Opportunity Employer.

**POSTDOCTORAL FELLOWSHIP/RESEARCH ASSOCIATE** available for an individual with experience in biochemistry, enzymology, and/or gene cloning. Laboratory is interested in cyclic GMP, guanylate cyclase, and hormone receptor coupling mechanisms. Send curriculum vitae and three letters of recommendation to: Dr. Ferid Murad, Departments of Medicine and Pharmacology, Stanford University, VAMC, 3801 Miranda Avenue, Palo Alto, CA 94304. An Equal Opportunity Employer.

## FELLOWSHIPS

### CALIFORNIA INSTITUTE OF TECHNOLOGY THE CHAIM WEIZMANN POSTDOCTORATE FELLOWSHIP FOR SCIENTIFIC RESEARCH IN GEOLOGICAL AND PLANETARY SCIENCES

Fellowships will be awarded for postdoctoral studies in geological and planetary sciences at the California Institute of Technology. These fellowships carry annual stipends of \$28,000 from fall 1986, and in addition offer a research-expense fund of \$1,000 per year. The duration of fellowships will normally be for 2 years. Applicants must be U.S. citizens.

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Geophysics and Seismology

Application forms may be obtained from: Professor Peter J. Wyllie, Division of Geological and Planetary Sciences, 170-25, California Institute of Technology, Pasadena, CA 91125. Completed applications with references should arrive at Caltech before 1 April 1986.

Fellowship candidates will automatically be considered for other available postdoctoral positions at Caltech in their fields of interest.

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## CONVENTION

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## PROGRAMS

**JOINT GRADUATE PROGRAM IN TOXICOLOGY, RUTGERS UNIVERSITY/UMDNJ-RUTGERS MEDICAL SCHOOL.** We are conducting a national search for scholars who wish to earn the M.S. and/or Ph.D. in toxicology. Our internationally recognized faculty will provide an opportunity for you to conduct research in cellular/molecular toxicology, immunotoxicology, hepatotoxicology, carcinogenesis, inhalation/respiratory toxicology, neurotoxicology, environmental and aquatic toxicology, and metabolism of environmental chemicals. We strive to couple the results of basic toxicological research with health risk assessment. We have available graduate teaching or research assistantships which include tuition and stipends, which for the most highly qualified candidates will be in the range of \$10,000. For further information, please contact: Dr. Robert Snyder, Director, Joint Graduate Program in Toxicology, Rutgers University, P.O. Box 789, Piscataway, NJ 08854. Telephone: 201-932-3720.

### CAREER CHANGE OPPORTUNITY

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## PROGRAMS



### HARVARD SCHOOL OF PUBLIC HEALTH DOCTORAL PROGRAM IN THE LABORATORY SCIENCES IN ENVIRONMENTAL HEALTH Division of Biological Sciences in Public Health

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### GRADUATE PROGRAM DOCTORAL TRAINING IN ENVIRONMENTAL BIOLOGY- PUBLIC POLICY

The Department of Biology at George Mason University offers a Ph.D. in Environmental Biology-Public Policy to train environmental biologists for involvement in public policy issues. A limited number of assistantships and fellowships are available for outstanding applicants. Write for brochure and application materials. Closing date for application is 1 March 1986. Contact: Doctoral Coordinator, Program in Environmental Biology-Public Policy, Department of Biology, George Mason University, Fairfax, VA 22030. George Mason University is an Affirmative Action/Equal Opportunity Employer.

## TRAINING PROGRAM

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

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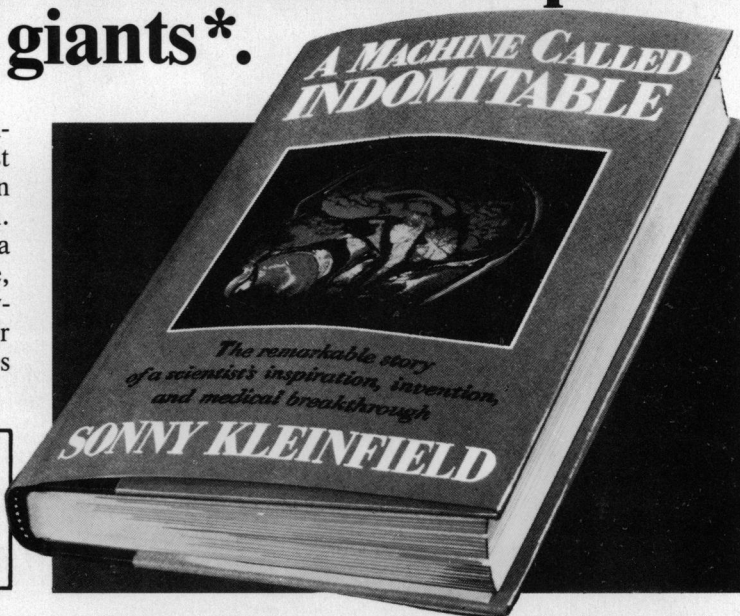
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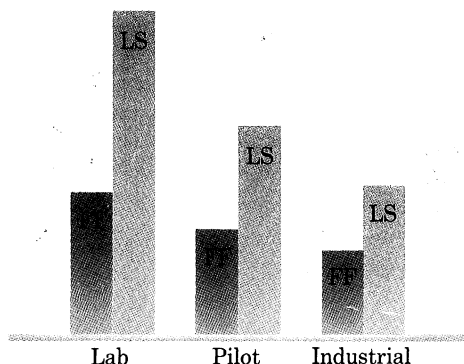
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