

Guilfoyle blames the situation on a shortage of information (a pretty safe bet) and, as a substitute, treats us to animal examples. Plant scientists perennially hope to use discoveries made in animal systems as a shortcut to success. There is often a snare in a shortcut, in this case the ease with which it is possible to discover only and exactly what you expect to find. The hard evidence that  $\text{PIP}_2$  cleavage to  $\text{IP}_3$  and DAG takes place at all in plants is scant. If this process weren't so firmly documented in animals I doubt that it would still be pursued at all in plants.

Blowers and Trewavas blame the overwhelming complexity of biochemical interaction within a single cell and encourage us to gape at the range of subtleties of which this multidimensional cybernetic lacework might be capable. The approach can be extended to include all the states of all plant cells: the huge number of different plants, each with its own set of different cells, each cell type responding differently to each of a range of signals, and the pattern of response altering with time or in response to various signals. This versatility is amplified because plant cells are linked together interactively in transputer-type arrays without which responses like root gravitropism, solar tracking, and photoperiodic induction of leaves could not occur. In attempting to deal with signals and responses involved in just the reaction to pathogens, Thomas Boller gives us a glimpse of the bewilderingly rich variety of interaction and gently pokes fun at the inadequacy of the "second messenger" concept to cope with it.

No one can yet rule out the possibility that there exists some yet-to-be-discovered, single universal subroutine for signal transduction in plants, but the evidence collected in this book favors multifarity. So also would the haphazard nature of evolution. To bounce cells between homeostatically buffered, alternative states requires the temporary dislocation of homeostatic control—a miniature catastrophe. In evolution virtually all such catastrophes would be expected to be lethal, like mutations. Most of the non-lethal types would be resolved by the restoration of the original state. Of those few that result in a new order within the cell, only a minority will confer no selective disadvantage on the organism. Features common to more than one example of signal transduction may represent the equivalent of mutational "hot spots." On these grounds, precipitating a calcium crisis, by whatever means, seems to offer a safer dislocation than most.

Much of the evidence we have regarding events triggered by signal reception is based on correlation only. The possibility that many of these events are dead ends renders

such evidence useless. Take, for example, the induction of cell division in cultured soybean cotyledonary cells in response to the plant growth substance cytokinin. The rapidly ensuing stimulation of hydrogen ion extrusion, hyperpolarizing the plasma membrane, and recruitment of ribosomal subunits into polysomes have both been shown to be unrelated to the subsequent cell division (M. Bevan and D. H. Northcote, *Planta* **152**, 24–31 [1981]; A. Parsons, S. Blackford, and D. Sanders, *ibid.* **178**, 215–222 [1989]). To establish the mechanism of signal transduction in plant cells we must have evidence of causal connection between early biochemical events generated by the signal and the eventual physiological or developmental response.

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## Some Other Books of Interest

**Studies of High Temperature Superconductors.** ANANT NARLIKAR, Ed. Nova Science, Commack, NY, 1989. Vol. 1, xiv, 381 pp., illus. \$72. Vol. 2, xviii, 367 pp., illus. \$72. Vol. 3, xviii, 413 pp., illus. \$74.

**Physical Properties of High Temperature Superconductors I.** DONALD M. GINSBERG, Ed. World Scientific, Teaneck, NJ, 1989. x, 516 pp., illus. \$84; paper, \$48. Progress in High Temperature Superconductivity.

These volumes represent ventures to keep an advanced-level readership apprised of developments following on Bednorz and Müller's 1986 discovery of the occurrence of superconductivity at temperatures substantially higher than had previously been known.

First to appear was the *Studies* series, already comprising three volumes, with a fourth imminent. Each of the first volumes contains 15 chapters with a highly international authorship. Volume 1, for instance, opens with chapters on the oxygen hole mechanism of superconductivity by C. N. R. Rao and electronically driven instabilities in high-temperature superconductors by Kazushige Machida and includes chapters on the use of a strong coupling theory by Josef Rammner, twins in  $\text{YBa}_2\text{Cu}_3\text{O}_{7.8}$  superconductors by C. J. Jou and J. Washburn, and the role of Mott-insulation, non-stoichiometry, and altered valence by G. J. Hyland. Each volume includes a subject index, tables of contents of its predecessors, and a list of papers planned for future volumes.

*Physical Properties of High Temperature Superconductors* joins a larger series that has

already included nine volumes, mostly conference proceedings. In the opening chapter of volume 1 Ginsberg gives a history and overview of the field. There follow seven chapters on more specific topics: thermodynamic and macroscopic magnetic properties (Salamon; Malozemoff), neutron scattering studies (Birgenau and Shirane), normal-state transport and elastic properties (Allen *et al.*), rare earth and other substitutions (Markert *et al.*), infrared properties (Timusk and Tanner), and Raman scattering (Thomson and Cardona). A subject index is included. In general, the papers give a bit more in the way of general background to their subjects than do those in the *Studies* series. Specific details of projected future volumes of the *Physical Properties* subseries are not given, but it is expected that some topics omitted from this one, such as nuclear magnetic and quadrupole resonance, microstructure, and photoemission, as well as further developments in the topics already treated, will be included.—K.L.

## Books Received

**The Child in the Physical Environment.** The Development of Spatial Knowledge and Cognition. Christopher Spencer, Mark Blades, and Kim Morsley. Wiley, New York, 1989. xiv, 302 pp., illus. \$97.95. NATO Advanced Science Institutes Series A, vol. 164. From a workshop, Keele, U.K., July 1988.

**Cochlear Mechanisms.** Structure, Function, and Models. J. P. Wilson and D. T. Kemp, Eds. Plenum, New York, 1989. xii, 506 pp., illus. \$97.50. NATO Advanced Science Institutes Series A, vol. 164. From a workshop, Keele, U.K., July 1988.

**Computer Simulation and Computer Algebra.** Lectures for Beginners. D. Stauffer *et al.* 2nd ed. Springer-Verlag, New York, 1989. xii, 155 pp. Paper, \$22.

**Drug Treatment of Cancer Pain in a Drug-Oriented Society.** C. Stratton Hill, Jr., and William S. Fields, Eds. Raven, New York, 1989. xx, 380 pp. \$86. Advances in Pain Research and Therapy, vol. 11. From a conference, Houston, TX, March 1988.

**L'Echec des Surrégénérateurs.** Autopsie d'un Grand Programme. Dominique Finon. Presses Universitaires de Grenoble, Grenoble, France, 1989. 327 pp. Paper, F 128.

**Functional Morphology of the Evolving Hand and Foot.** O. J. Lewis. Clarendon (Oxford University Press), New York, 1989. viii, 359 pp., illus. \$125.

**Gene Regulation by Steroid Hormones IV.** A. K. Roy and J. H. Clark, Eds. Springer-Verlag, New York, 1989. xii, 239 pp., illus. \$59. From a conference, Fall 1988.

**Genetics of Kidney Disorders.** Christos S. Bartsocas, Ed. Liss, New York, 1989. xvi, 218 pp., illus. \$58. Progress in Clinical and Biological Research, vol. 305. From a seminar, Rethymno, Greece, Oct. 1988.

**Genetics of Neuromuscular Disorders.** Christos S. Bartsocas, Ed. Liss, New York, 1989. xiv, 216 pp., illus. \$48. Progress in Clinical and Biological Research, vol. 306. From a seminar, Rethymno, Greece, Oct. 1988.

**Intestinal Metabolism of Xenobiotics.** A. Sj. Koster *et al.*, Eds. Fischer, Stuttgart, 1988 (U.S. distributor, VCH, New York). xvi, 338 pp., illus. Paper, \$96.50. Progress in Pharmacology and Clinical Pharmacology, vol. 7, no. 2.

**An Introduction to Metamorphic Petrology.** Bruce W. D. Yardley. Longman Scientific, Harlow, U.K., and Wiley, New York, 1989. xiv, 248 pp., illus. Paper, \$37.95. Longman Earth Science Series.

**Multipoint Magnetospheric Measurements.** C. T. Russell, Ed. Published for the Committee on Space Research by Pergamon Press, Elmsford, NY, 1989. viii, 464 pp., illus. Paper, \$120. Advances in Space Research, vol. 8, nos. 9–10. From a symposium, Espoo, Finland, July 1988.

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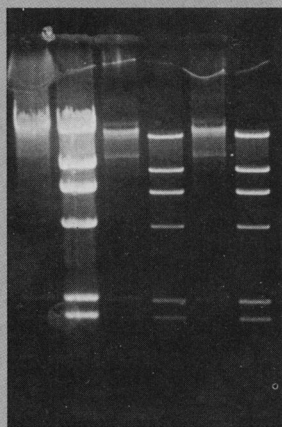
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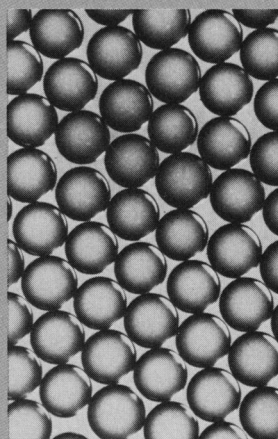
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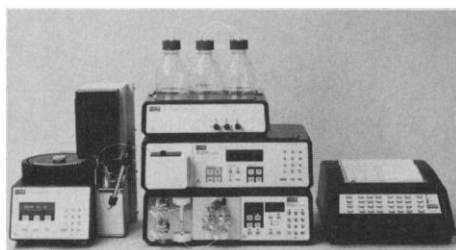
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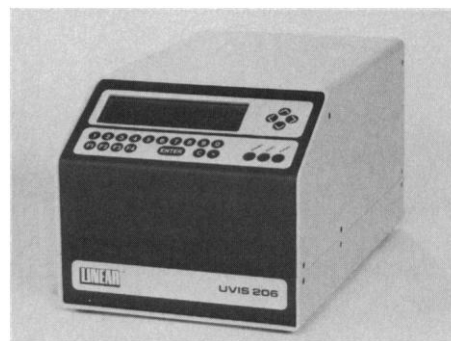
The 9.0 version of the METABOLEXPERT program is an advanced, artificial-intelligence-based expert system for metabolic predictions. The user simply enters an organic chemical, previously identified or newly synthesized, and METABOLEXPERT predicts its metabolic pathways. Among the enhancements included in version 9.0 are species selectivity with 35 choices such as human, rat, monkey, or dog; ranking of predicted metabolites according to conversion percentages calculated from excretion percentages; an expanded knowledge base capable of incorporating the user's own metabolic information into the program; and reasoning by analogy, which permits the use of known analogs of the candidate compound for the predictions. The program operates on an IBM PC/AT, PS/2, or compatibles, and Digital Equipment Co.'s VAX systems. CompuDrug USA. Circle 483.

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### **Literature**

A condensed eight-page, full-color catalog presents a comprehensive line of electrochemical instruments and systems for high-performance liquid chromatography detection, voltametric analysis, corrosion measurements, and electrochemical research. EG&G Princeton Applied Research. Circle 517.

Promega 1989/1990 Catalog contains 17 sections of comprehensive information on a line of molecular biology reagents. Promega Corp. Circle 519.

Shimadzu Scientific Instruments has published a new catalog describing the company's wide range of products for chromatography, environmental analysis, and test and measuring applications. Shimadzu Scientific Instruments. Circle 520.

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

# Personnel Placement

**SCIENCE** publishes each Friday, except the last Friday of the year. Advertising is accepted only in writing; no abbreviations. Any deadline in ad must be at least 2 weeks after date of issue in which ad appears. Also, personnel advertising is accepted only with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual preference. **SCIENCE** reserves the right, in its discretion, to decline to publish advertisements submitted to it.

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Thursday, 10 a.m., 2 weeks prior to issue date (mailed on issue date). For deadlines for display advertising, please contact Scherago Associates.

**POSITIONS WANTED:** 40¢ per word, plus \$4 for use of box number, per week. \$10 minimum, per week. Prepayment required. This rate is available only to individuals seeking jobs. After 1 January 1990, the rate will be 50¢ per word, \$5 for use of box number, \$15 minimum, per week.

**LINE CLASSIFIED (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth):** \$40.00 per line; \$400 minimum, per week, until 31 December 1989; for ads to appear after 1 January 1990, \$41 per line, \$410 minimum. Minimum charge covers one inch on a single column; one inch equals 10 lines of 52 characters and spaces per line. No charge for use of box number. No agency commission for ads less than 4 inches. No cash discount. Prepayment required for all foreign ads. Purchase orders required for all other advertising.

## To ESTIMATE ad cost:

Structure ad copy on a separate page, on lines of 52 characters and spaces. Include any desired heading. Each line of heading, and/or extra line spaces, and all partial lines (including centered reply information) are counted as full lines. Ad titles located within the text are printed in boldface caps and are only 32 characters per line. In ESTIMATING the cost, multiply total lines  $\times$  \$40 = approximate cost of ad. For ads to appear after 1 January 1990, multiply total lines  $\times$  \$41. (This is an approximate cost ONLY. Allow for variation between estimated lines and actual typeset lines and the resulting final cost. Purchase orders must allow for some degree of flexibility and/or adjustment.)

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NOTE: Ad cancellations made after Thursday, TWO weeks prior to issue date incur a 10% production charge. Final deadline for cancellations is 12 p.m. Tuesday, ONE week prior to issue date. Cancellations must be in writing.

Send copy for all **Positions Wanted** ads and **Line Classified** ads less than 1/6 page in size (39 lines) to:

**SCIENCE Classified Advertising**  
1333 H Street, NW, Room 940  
Washington, DC 20005  
Telephone: 202-326-6555  
FAX: 202-682-0816

Send copy for **Fractional Display** ads, 1/6 page and larger, and all **Marketplace** ads to:

**Scherago Associates, Inc.**  
1515 Broadway  
New York, NY 10036  
Telephone: 212-730-1050  
FAX: 212-382-3725

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**Food Scientist, R&D, QA, or Production.** New Ph.D., cereal chemistry. Resourceful, friendly, persistent. Ronald B. Malouf, 2131 Prairie Field, Manhattan, KS 66502. Telephone: 913-539-0852.

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**Ph.D. 1980, Biochemistry.** Toxicology, molecular pharmacology/biology, chemical carcinogenesis. Six years experience in U.S.A., visa H1. Position desired in academia or industry. Write: Raza, 1497 Maple Road, Cleveland Heights, OH 44121. Telephone: 216-791-3800, ext. 5105.

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**Toxicologist/Pharmacologist, D.V.M., M.S., Ph.D.,** with excellent publications record in whole animal research wishes to continue same. Desire position with institution or company that will fund dose-response lethal or convulsive end point studies for discovery of proper doses of poisons or drugs in studies approved by institutional animal use committees. Team and mission-oriented research part of background. Believe medical research eventually must prove applicable to whole animals or people. For curriculum vitae, references, and detail contact: **Dr. Roger Hatch, Department of Physiology and Pharmacology, The University of Georgia, Athens, GA 30602.**

## POSITIONS OPEN

### ANALYTICAL CHEMIST

To work in hypertension research program. Applicant must have experience with protein purification and characterization, HPLC-EC analysis of catecholamines and metabolites, and molecular biology techniques, and in the supervision of laboratory personnel. Beginning salary \$20,000 to \$25,000. Send curriculum vitae to: **Hypertension Program of the Division of Cardiovascular Diseases, University of Alabama at Birmingham, UAB Station, Birmingham, AL 35294, Attention: Donna Cline.** An Equal Opportunity/Affirmative Action Employer.

**ASSISTANT CHAIRMAN:** Department of Chemistry, University of Pittsburgh. Major administrative position with responsibility for fiscal coordination and grants administration (total about \$8 million per annum). Directly or indirectly manages support staff of 34. Provides administrative support for undergraduate and graduate teaching and research programs. Assists faculty and chair with long-range development and industrial relations. Demonstrated administrative skills essential. Degree in chemistry or related area required. Doctorate desirable. Send résumé and three references to: **Professor N. John Copper, Chair, Department of Chemistry, University of Pittsburgh, Pittsburgh, PA 15260.** The University of Pittsburgh is an Equal Opportunity/Affirmative Action Employer.

### ASSISTANT PROFESSOR BIOCHEMISTRY AND MOLECULAR BIOLOGY SUNY HEALTH SCIENCE CENTER AT SYRACUSE

We invite applications for a tenure-track assistant professor position. Outstanding candidates in all areas of biochemistry and molecular biology, including macromolecular structure and function, will be considered. Applicants must have a Ph.D. in biochemistry or related field, postdoctoral experience, demonstrated research productivity, and a commitment to excellence in teaching medical and graduate students. Send letter of application (with curriculum vitae and summary of research plans) and have three letters of reference forwarded to: **Dr. Harvey S. Penefsky, Chair, Search Committee, Department of Biochemistry and Molecular Biology, State University of New York Health Science Center at Syracuse, 750 East Adams Street, Syracuse, NY 13210.** Deadline for receipt of résumés: 5 January 1990.

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## POSITIONS OPEN

**ANATOMY ASSISTANT PROFESSOR:** A tenure-track position is available as assistant professor of anatomy. Needed are: Ph.D. ability to develop a strong and creative research program in cellular and/or molecular biology. Candidates expected to have experience in teaching gross anatomy. Send curriculum vitae and three letters of reference to: **Dr. Marilyn L. Zimny, Head, Department of Anatomy, Louisiana State University Medical Center, 1901 Perdido Street, New Orleans, LA 70112-1393.** LSUMC is an Equal Employment Opportunity/Affirmative Action Employer.

**ASSISTANT PROFESSOR—Insect Population Geneticist.** Twelve-month tenure-track position, to teach and conduct research in the Department of Entomology. Ph.D. degree in entomology or related biological discipline and demonstrated proficiency in population genetics required. Salary commensurate with qualifications and experience. Applicants should send a letter of application, a résumé, transcripts, papers or reprints, and a statement of research/teaching interests and have four letters of reference forwarded to: **B. C. Pass, Department of Entomology, University of Kentucky, Lexington, KY 40546.** Deadline is 15 December 1989. Equal Opportunity/Affirmative Action Employer.

Applications are invited for two tenure-track positions available for September 1990. The positions are at the **ASSISTANT PROFESSOR** level. We are particularly interested in candidates who specialize in

- a synthetic and experimental approach to the study of vertebrate reproductive biology
- molecular biology of the nervous system and behavior, with strong developmental and/or genetic components

Please submit curriculum vitae (including biographic data), short statement of research objectives, names of at least five referees, and selected reprints to: **The Chairman, Department of Zoology, University of Texas, Austin, TX 78712-1064,** before 1 January 1990.

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**ASSISTANT PROFESSOR—IMMUNOLOGY—**Department of Veterinary Microbiology and Immunology, School of Veterinary Medicine, University of California, is seeking a highly qualified applicant to fill a tenure-track position in immunology. Qualifications include the Ph.D. degree and advanced training in cellular and/or molecular biology with demonstrated research productivity and interest in immunology. The successful candidate will be expected to contribute to the department's and the school's immunology teaching commitments and to establish independent and collaborative-type research programs. Apply in writing and include curriculum vitae, list of publications, and names of three references. Send to: **Dr. Jeffrey L. Stott, Chairperson Search Committee, Department of Veterinary Microbiology and Immunology, University of California, Davis, CA 95616.** Applications accepted through 15 January 1989 or until a suitable candidate is identified.

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### THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL ASSISTANT PROFESSOR IN INVERTEBRATE BIOLOGY

The Department of Biology invites applications for a tenure-track appointment effective 1 July 1990 or later. The area of research interest is broadly defined to encompass comparative physiology, functional morphology, and neuroethology. Applicants should provide evidence that they will develop a strong, independent research program and that they possess a broad knowledge of invertebrates. Graduate teaching is in the area of research specialization; undergraduate teaching is in any of the following areas: biology of invertebrates, comparative physiology, neurobiology. Send curriculum vitae, reprints of publications, a statement of present and future research plans, and four letters of recommendation to: **Invertebrate Biologist Search Committee, Department of Biology, CB# 3280, Coker Hall, University of North Carolina, Chapel Hill, NC 27599-3280.** Priority will be given to applications received before 1 December 1989. Applications from minority groups and women are strongly encouraged. The University of North Carolina at Chapel Hill is an Equal Opportunity/Affirmative Action Employer.



## POSITIONS OPEN

**ASSISTANT PROFESSOR OF BIOLOGY:** Full-time, tenure-track position begins August 1990. Ph.D. required. Strong biochemical/molecular orientation preferred. A commitment to undergraduate teaching and involving undergraduates in faculty research. By 11 December 1989, send applications and references to: **Dr. G. L. Vertrees, Department of Biology, Texas Wesleyan University, P.O. Box 50010, Fort Worth, TX 76105.** *Affirmative Action/Equal Opportunity Employer.*

### ASSISTANT PROFESSOR EXTENSION SPECIALIST

The Department of Fisheries and Allied Aquacultures, Auburn University, invites applications for a tenure-track, 12-month appointment (50% research; 50% extension) in Mobile, Alabama. Applicants must have an earned doctorate in fisheries science and experience in extension or continuing education, and will be responsible for conducting research in marine fisheries, and extending appropriate technology to the fishing industry. Application materials may be requested from: **Dr. E. W. Shell, Head, Department of Fisheries and Allied Aquacultures, Swingle Hall, Auburn University, AL 36849. Telephone: 205-844-3594.** *Auburn University is an Equal Opportunity/Affirmative Action Employer. Minorities and women are encouraged to apply.*

### ASSISTANT PROFESSOR THEORETICAL CHEMISTRY— BIOPOLYMERS BOSTON UNIVERSITY

Applications are invited for a tenure-track position at the assistant professor level starting September 1990. The candidate is expected to establish a vigorous research program in an area of theoretical chemistry. We are particularly interested in applicants who will focus on computational approaches to understand protein folding and related biopolymers dynamics, molecular modeling, simulations of macromolecular environments, biopolymer-small molecule interactions, molecular recognition, or related areas that will complement current faculty interests in protein structure and function or other biopolymer research. The candidate should be committed to quality teaching at both undergraduate and graduate levels. State-of-the-art computing facilities are available on a campus-wide network, including a Silicon Graphics 4D/220 GTX workstation, an IBM 3090-200 VF mainframe, and a 32,000 processor Connection Machine. Extensive protein crystallographic instrumentation is also available. A curriculum vitae, three letters of recommendation, and a detailed description of proposed research should be sent to: **Dr. Guilford Jones, Chairman, Department of Chemistry, Boston University, Boston, MA 02215.** *An Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT PROFESSORS TENURE TRACK

#### DEPARTMENT OF PHARMACOLOGY THE UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE

The University of North Dakota invites applications and nominations for three tenure-track faculty positions in the Department of Pharmacology at the rank of Assistant Professor. The positions are full-time 12-month appointments completely funded by state-appropriated monies to the University of North Dakota Medical Center. A competitive start-up package is available. Candidates should have an M.D. and/or Ph.D. in Pharmacology or a related area. He/she should present evidence of strong teaching credentials and the ability to initiate or transfer a vigorous and extramurally funded research program in an area of pharmacology suitable toward graduate education within the Department and the University. Candidates should provide a letter of application, curriculum vitae, a comprehensive statement of research plans and objectives, representative publications, and the names, addresses, and telephone numbers of three individuals from whom the candidate has requested letters. The application materials and reference letters should be sent to: **Dr. David W. Hein, Professor and Chairman, Department of Pharmacology, University of North Dakota School of Medicine, 501 North Columbia Road, Grand Forks, ND 58203.** Review of the completed applications will begin 15 December 1989 and continue until the three positions are appointed. The positions are available immediately and should be filled no later than 1 July 1990. *The University of North Dakota is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**ASSISTANT PROFESSOR.** The Massachusetts Institute of Technology Department of Chemistry seeks one assistant professor for July 1990. Outstanding candidates in the area of biological chemistry are invited to send curriculum vitae, publication list, research plan, and statement of teaching interests to:

**Professor Mark S. Wrighton  
Department of Chemistry  
18-399**

**Massachusetts Institute of Technology  
Cambridge, MA 02139**

Please also arrange to have three letters of recommendation sent to the same address.

While the preferred level of appointment is at the assistant professor level, outstanding, experienced candidates will be considered at the associate- or full-professor level. Applications should be received no later than 15 December 1989.

*MIT is an Equal Opportunity/Affirmative Action Employer and encourages applications from minorities and women.*

### ASSISTANT PROFESSOR PHARMACOLOGY

The division invites applications for two tenure-track positions at the assistant professor level. Must have the Ph.D. degree and be a U.S. citizen or have the legal right to work in the U.S. Preference will be given to applicants with postdoctoral experience. Responsibilities include graduate and undergraduate pharmacology/toxicology instruction and maintenance of an independent, externally funded research program. Send curriculum vitae, statement of research interests, recent publications, and the names of three references to: **Mostafa Z. Badr, Ph.D., Chairman, Search Committee, Division of Pharmacology, University of Missouri-Kansas City, 2411 Holmes Street, M3-115, Kansas City, MO 64108.**

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

**ASSISTANT PROFESSOR COMMUNITY ECOLOGY/CONSERVATION BIOLOGY.** Tenure-track position in the wildlife department. Ph.D. required at time of appointment. Some university-level teaching skill required. Candidate must have expertise in community ecology and preferably also in conservation biology, as related to wildlife populations, as well as expertise on both consumptive and non-consumptive use of wildlife populations. Candidates with professional wildlife experience and/or strong quantitative skills will be given preference. Ornithology background preferred, but outstanding candidates working with other vertebrates also may be considered. Demonstrated research experience in appropriate specialties is essential. Submit curriculum vitae (including reprints), transcripts of academic work, and three letters of reference to: **Dr. Richard L. Ridenhour, Dean, College of Natural Resources, Humboldt State University, Arcata, CA 95521. Telephone: 707-826-3561.** Closing date is 15 December 1989. *Humboldt State University is an Equal Opportunity/Affirmative Action Title IX Employer.*

### ASSISTANT PROFESSOR TENURE TRACK

The Section of Nuclear Medicine, Department of Radiology at the University of Nebraska Medical Center, is seeking a tenure-track assistant professor interested in being a major participant in a project concerned with the molecular biology of radiation resistance. The project involves cloning, characterization, and transfer of genetic elements responsible for radiation resistance in microorganisms and mammalian cells in culture. A recent Ph.D. with training in microbiology/molecular biology would be desirable. A joint appointment in the appropriate basic science department will be available. Salary will be commensurate with experience. Interested candidates should send curriculum vitae and the names of three references by 1 January 1990 to:

**Thomas J. Imray, M.D.  
Professor and Chairman  
Department of Radiology  
University of Nebraska Medical Center  
42nd and Dewey Avenue  
Omaha, NE 68105-1065**

*The University of Nebraska Medical Center is an Equal Opportunity/Affirmative Action Employer M/F/H/V.*

## POSITIONS OPEN

### ASSISTANT/ASSOCIATE PROFESSOR MEDICAL COLLEGE OF OHIO

The Department of Surgery, Medical College of Ohio, is searching for a G.I. (preferably hepatic) physiologist. Tenure-track position with opportunity for independent research program. Address inquiries (please include curriculum vitae) to: **Neil R. Thomford, M.D., Chairman, Department of Surgery, Medical College of Ohio, P.O. Box 10008, Toledo, OH 43699-0008.** *The Medical College of Ohio is an Equal Opportunity Employer.*

### ASSISTANT/ASSOCIATE PROFESSOR TENURE TRACK

#### DEPARTMENT OF ENVIRONMENTAL HEALTH COLLEGE OF PUBLIC HEALTH UNIVERSITY OF OKLAHOMA AT OKLAHOMA CITY HEALTH SCIENCES CENTER

#### POSITION AVAILABLE UNTIL FILLED

Minimum qualifications include an earned doctorate in environmental health or a closely related discipline, primary expertise in environmental planning/policy-making and/or risk analysis, demonstrated competence or evidence of outstanding promise in research, and proficiency in computer applications to environmental health. Additional consideration will be given to candidates having postdoctoral training, teaching, and/or field experience. Applicants should submit a résumé and the names of four references to:

**Charles H. Lawrence, Ph.D.  
Chair, Environmental Health Search Committee  
College of Public Health  
Department of Environmental Health  
Post Office 26901  
Oklahoma City, OK 73190**

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

### ASSISTANT/ASSOCIATE PROFESSOR PHARMACOLOGY AND TOXICOLOGY

The Department of Pharmacology and Toxicology at the University of Maryland School of Pharmacy is seeking applicants for a tenure-track faculty position. Ideal candidate should have primary interests in pharmacology or toxicology with research experience in the areas of molecular pharmacology, molecular biology, immunopharmacology, or biochemical pharmacology. Laboratory space and start-up funds will be provided. Applicants should submit curriculum vitae, a summary of research interests and future plans, and the names of three references before 24 December 1989 to:

**Esam E. El-Fakahany, Ph.D.  
Chairman of Search Committee  
Department of Pharmacology and Toxicology  
University of Maryland School of Pharmacy  
20 North Pine Street  
Baltimore, MD 21201**

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

The Departments of Surgery and Microbiology and Immunology invite applications for a tenure track position at the level of **ASSISTANT/ASSOCIATE/FULL PROFESSOR.** Candidates should have a strong background in tumor immunology, with a special interest in cellular or molecular immunology. Emphasis will be placed on those individuals with experience with tumor immunotherapy and cytokines. The applicant will join an active group of immunologists and clinicians associated with the Lucille Parker Markey Cancer Center. Applicants must hold M.D., Ph.D., or D.V.M. degree and have at least 2 years of postdoctoral experience. An attractive start-up package is available and the salary is competitive and commensurate with experience. Applicants should submit their curriculum vitae, a statement of research interests, and the names of three references to:

**Dr. Alan M. Kaplan, Chairman  
Department of Microbiology and Immunology  
University of Kentucky  
Chandler Medical Center  
800 Rose Street  
Lexington, KY 40536-0084**



**GLAXO INSTITUTE FOR  
MOLECULAR BIOLOGY S.A.**

The Geneva biotechnology research unit of the largest U.K. pharmaceutical group has the following positions:

## **ELECTROPHYSIOLOGIST**

The qualified scientist (PhD level) will join an expanding neurobiology research group which is involved in the application of new technology to study the biochemistry and physiology of pharmacologically important neurotransmitter receptors and their second messenger systems. The scientist will set up and direct an innovative research program and have responsibility for several technicians.

The ideal candidate will have 3 to 5 years of relevant experience in the following areas: voltage clamp analysis on single cells (or oocytes), patch clamp analysis and neuronal cell culture techniques.

## **PROTEIN CHEMIST**

### **Head of the Department of Analytical and Recombinant Protein Chemistry**

The qualified scientist (PhD level) will lead a group of 8 to 10 scientists and technicians involved in the purification and characterization of recombinant proteins, synthesis and purification of peptides and microsequence analysis of proteins.

The ideal candidate will have at least 5 years of relevant academic or industrial postdoctoral experience in the area of micro-analytical protein chemistry.

We offer an excellent salary and benefits package, with opportunities for career development in one of the most attractive parts of Europe.

If you are interested in either of these positions, please send your curriculum vitae with a list of publications and the names of three references to: Rita Gloor, Personnel Manager, GLAXO IMB S.A., 46, route des Acacias, 1211 Geneva 24, Switzerland.

# **Research Scientists**

## **San Francisco Bay Area**

TRITON BIOSCIENCES INC., an emerging pharmaceutical and diagnostics company, is focused on product development opportunities in the areas of cancer, AIDS and other serious diseases. We currently have the following excellent opportunities in our Research and Development areas:

### **Tumor Studies**

You will coordinate research efforts involving animal models and ascites production, and work cooperatively with other scientists to design and implement in vivo studies required to support R&D programs in the areas of therapeutic antibodies, oncogene products and growth factors. You should have a PhD in Immunology, Pharmacology or a related area, and experience in tumor model systems and pharmacokinetic analysis. Excellent communication skills are essential. Refer to Job #880RM.

### **New Cancer Marker Scientist**

Requires a PhD in Biology or equivalent experience with expertise in the evaluation of cancer markers. Duties include effective interaction with a multidisciplinary team in evaluating new cancer markers for diagnostic use. Refer to Job #89063.

### **Developmental Chemist**

Requires an MS or PhD with 5 years' experience in biological chemistry or a related field. Experience in the development of immunoassays and prior industrial experience is desired. Refer to Job #89096CH.

TRITON offers competitive salaries and benefits, including relocation assistance. For consideration, send your resume with cover letter, noting appropriate Job number, and highlighting your skills and experience to TRITON BIOSCIENCES INC., 1501 Harbor Bay Parkway, Alameda, CA 94501. EEO/AA employer.



**Triton Biosciences Inc.**

## POSITIONS OPEN

**ASSISTANT/ASSOCIATE PROFESSOR** position in physiology and pharmacology. Tenure-track, 12-month positions at Indiana University School of Medicine, Terre Haute Center for Medical Education. Applicants must possess an earned doctoral degree in discipline and have the potential to develop and sustain a fundable independent research program. Academic duties include a significant portion of time in teaching first-and/or second-year medical students. Interested individuals are invited to submit curriculum vitae and three letters of reference to: Search and Screen Committee, Terre Haute Center for Medical Education, Indiana University School of Medicine, 135 Holmstedt Hall, Terre Haute, IN 47809. *Indiana University is an Affirmative Action/Equal Opportunity Employer.*

**ASSISTANT/ASSOCIATE PROFESSOR.** The Department of Internal Medicine at the University of Arizona invites applications for a full-time tenure-track position at the assistant or associate professor level in the subspecialty of endocrinology. Candidates must have an M.D. degree, and be Board-eligible or Board-certified in endocrinology. We are actively seeking applicants with strong research background and the ability to establish an independent research program. Applicants are invited to send a complete curriculum vitae with a statement of research interests and a list of three to four references to:

David G. Johnson, M.D.  
Chief, Endocrinology Section  
Department of Internal Medicine  
University of Arizona Medical Center  
Tucson, Arizona 85724

All curriculum vitae will be accepted through 31 December 1989 or until filled. *Women and minorities are encouraged to apply. The University of Arizona is an Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT/ASSOCIATE PROFESSOR OF ANATOMY.** The Department of Anatomy at Loyola University Stritch School of Medicine invites applications for a tenure-track position at the assistant/associate professor level beginning 1 July 1990. Candidates may have either a Ph.D. or M.D. and must demonstrate a commitment to independent research in neurobiology. Primary teaching responsibilities are in medical gross anatomy. The department has modern facilities and comprises 11 faculty with research emphasis in neurobiology and cell biology/immunology. Opportunities for collaborations exist through the Neuroscience Graduate Program. Applicants should submit a letter indicating their qualifications and research goals, curriculum vitae, and the names of three references by 1 January 1990 to: Dr. A. J. Castro or Dr. J. A. McNulty, Department of Anatomy, Loyola University Stritch School of Medicine, 2160 South First Avenue, Maywood, IL 60153. *Loyola University is an Equal Opportunity Employer.*

### ASSISTANT/ASSOCIATE PROFESSOR BANTING AND BEST DEPARTMENT OF MEDICAL RESEARCH UNIVERSITY OF TORONTO

The Banting and Best Department of Medical Research, is seeking candidates for the position of assistant/associate professor (tenure stream). The position is available 1 July 1990 and will carry an initial appointment of 5 years at a competitive salary.

Candidates should have a strong research background and be prepared to develop a research program in an area related to the molecular basis for cellular regulation, including molecular and cellular aspects of endocrinology, mechanisms of signal transduction, surface and intracellular receptors, control of growth and differentiation, diabetes research, or regulation of gene expression. The successful candidate will be expected to attract independent research grants, to spend at least 75% of his/her time in research, and to participate in graduate and undergraduate training.

Applicants should forward a curriculum vitae and an outline of research interests, and arrange for three letters of reference to be sent directly to: Dr. David H. MacLennan, Professor and Chairman, Banting and Best Department of Medical Research, University of Toronto, 112 College Street, Toronto, Ontario, Canada M5G 1L6.

*The University of Toronto encourages both women and men to apply for positions. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada, but foreign applications are encouraged.*

## POSITIONS OPEN

**SEARCH EXTENDED: TENURE-TRACK ASSISTANT/ASSOCIATE PROFESSOR, WILDLIFE MANAGEMENT/ORNITHOLOGY.** Refer to *Science* 15 September 1989. Submit résumé, all transcripts, and names of three references to: Tom Kantz, Chairman, Department of Biological Sciences, California State University, Sacramento, CA 95819. Closing date: 15 November 1989. *An Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT PROFESSOR—BIOCHEMISTRY/BIOPHYSICAL CHEMISTRY.** Seek one tenure-track Assistant Professor starting August 1990. Must possess doctorate; subsequent postdoctoral experience preferred. Will be expected to establish a vigorous program of research relating to biological systems. Expertise in the application of NMR to biochemical problems required. Apply with a complete résumé, brief description of research plans, and three letters of recommendation postmarked by 15 November 1989 (or until suitable candidate applies thereafter) to: Professor Thomas M. Apple, Department of Chemistry, University of Nebraska—Lincoln, Lincoln, NE 68588-0304. Telephone: 402-472-3302, FAX 402-472-2044. *Affirmative Action/Equal Opportunity Employer.*

### THE UNIVERSITY OF WESTERN ONTARIO

The University of Western Ontario invites applications for two tenure-track faculty positions in the Faculty of Science (one in plant molecular genetics; the other in animal molecular genetics). The rank will be either ASSISTANT PROFESSOR or ASSOCIATE PROFESSOR, commensurate with experience. Applications are encouraged from internationally recognized candidates with active research programs which have had a major impact in the molecular genetics of plant or animal systems. A Ph.D. and postdoctoral experience are required. The successful candidate will be expected to play a pivotal role in the expansion of molecular genetics/biology in the Faculty of Science and, to participate in a graduate program in molecular biology between the Faculties of Science and Medicine. Generous research space will be provided in a new science centre currently under construction. Applicants should submit curriculum vitae, a one-page statement of research interests, and the names of three references to: Dr. W. S. Fyfe, Dean, Faculty of Science, The University of Western Ontario, London, Ontario, Canada N6A 5B7. Deadline for applications is 31 March 1990. *In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada. Others are encouraged to apply. These positions are subject to budget approval. An Equal Opportunity Employer.*

**BIOLOGICAL SCIENCES—State University of New York at Buffalo.**

Two assistant professorships. Candidates should be utilizing modern biochemical, molecular and/or structural approaches in the study of biological problems in areas such as the following: (i) the immune system at the molecular and/or cellular level, (ii) development, or (iii) regulation of gene expression.

Candidates must submit curriculum vitae, including a statement of research background and teaching experience, and at least three letters of reference, to: Dr. Darrell Doyle, Chairman, Department of Biological Sciences, 109 Cooke Hall, State University of New York at Buffalo, Buffalo, NY 14260. Applications will be received until 31 December 1989, or until the positions are filled thereafter. *State University of New York is an Affirmative Action/Equal Opportunity Employer.*

### NORTHERN STATE UNIVERSITY BIOLOGY

Northern State University invites applications for a tenure-track position in cell or molecular biology. A Ph.D. and demonstrated teaching and research ability is required. Duties include teaching 12 credit hours per semester plus advising and committee work. Consideration of applications will begin on 1 November 1989 and continue until the position is filled. Please send letter, curriculum vitae, three letters of reference, and (if Ph.D. granted within last 5 years) graduate transcripts to: Dr. T. O. Flickema, Vice President for Academic Affairs, Northern State University, Aberdeen, SD 57401. *Applications from women and minorities are encouraged.*

*Northern State University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**BIOLOGY PROFESSOR.** Collin County Community College District is a new multi-campus district, north of the Dallas-Fort Worth metroplex, with state-of-the-art facilities and equipment with rapidly growing enrollments. We are accepting applications for a full-time biology professor position for January 1990. M.S. degree with at least 18 graduate hours in biology from an accredited institution required. A letter of interest, résumé, and graduate transcripts must be received by 10 November 1989 by: Collin County Community College District, Human Resources Office, 2200 West University, McKinney, TX 75070. *Equal Opportunity Employer.*

**BIOLOGY.** Cornell College, a private liberal arts college located in Mount Vernon, Iowa, plans to make a full-time tenure-track faculty appointment in its Department of Biology at the assistant professor level beginning in the fall of 1990. Teaching responsibilities include genetics, developmental biology, introductory biology, and supervision of student research. The candidate should be broadly trained in biology and have a specialization in molecular biology. Ph.D. required; postdoctoral experience preferred. Send curriculum vitae and three letters of reference to:

Dr. Paul Christiansen, Chair  
Department of Biology  
Cornell College  
Mount Vernon, IA 52314

Formal consideration of applications will begin 1 December 1989.

*Cornell College is an Affirmative Action/Equal Opportunity Employer and actively seeks applications from women and minority candidates.*

**BIOLOGY:** The Department of Biology of the Pennsylvania State University invites applications from candidates with a Ph.D. who have research interests in evolutionary ecology, molecular evolution, and/or comparative physiology. Tenure-track positions are available at any level, depending upon the candidates' qualifications; positions will be available beginning August 1990 or January 1991. Applicants should have demonstrated research ability, postdoctoral experience, and interest in undergraduate and graduate education. We are especially interested in persons who will interact productively with members of our existing group of ecologists, molecular evolutionists, population biologists, and physiologists. Applications/nominations along with curriculum vitae, statement of research interests and teaching goals, and the names and addresses of three references are due 15 November 1989 and should be addressed to: Dr. Linda Maxson, Head, Department of Biology, The Pennsylvania State University, Box C, 208 Mueller Laboratory, University Park, PA 16802. *An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.*

### CELL BIOLOGY INDIANA UNIVERSITY, BLOOMINGTON

The Department of Biology anticipates appointing a new faculty member in cell biology, who utilizes molecular, biochemical, and genetic approaches to the study of cellular structure and function. We are particularly interested in receiving applications from individuals studying protein structure and interactions, cell-cell communications, or intracellular sorting. The successful candidate will be expected to conduct a vigorous, independent research program and contribute to teaching. Applicants should have postdoctoral research experience and demonstrated ability as creative scientists. Send curriculum vitae, a brief description of research interests, and arrange to have three letters of reference sent to: Dr. Tom Blumenthal, Chairman, Department of Biology, Indiana University, Bloomington, IN 47405.

Applications received before 1 January 1990 will be assured of consideration.

*Indiana University is an Affirmative Action/Equal Opportunity Employer.*

**CORNEAL PHYSIOLOGIST.** Tenure-track position in the Department of Biological Sciences. Ph.D. with postdoctoral experience and interests in basic and collaborative clinical research, to join a cornea/tear film/contact lens research group. Salary based on qualifications. Available early 1990. Interested candidates should send curriculum vitae and names of three references to: Harry Wyatt, Ph.D., State University of New York, State College of Optometry, 100 East 24th Street, New York, NY 10010.

# DEAN OF THE FACULTY OF ARTS AND SCIENCES RUTGERS-New Brunswick

Rutgers, The State University of New Jersey, invites nominations and applications for the position of dean of the Faculty of Arts and Sciences-New Brunswick.

FAS-NB is the largest academic unit within the university, containing over 1,000 faculty organized into thirty-one disciplines. The faculty is responsible for providing instructional programs for the approximately 18,000 undergraduate students enrolled in four liberal arts colleges on the campus and majoring in arts and sciences disciplines, for the approximately 7,000 undergraduate students enrolled in professional schools and requiring distribution and general education courses in the arts and sciences, and for the approximately 5,000 graduate students pursuing degrees in the arts and sciences.

The university seeks candidates with outstanding scholarly accomplishments who also possess proven administrative experience and the capacity to oversee a large and complex organization. Women and minority candidates are specifically invited to apply. Please address all correspondence to:

Dr. David Mechanic  
Search Committee Chair  
c/o Office of the Vice President for  
University Administration and Personnel  
Rutgers, The State University of New Jersey  
New Brunswick, NJ 08903

THE STATE UNIVERSITY OF NEW JERSEY  
**RUTGERS**

An Affirmative Action/Equal Opportunity Employer

## NATIONAL INSTITUTES OF HEALTH FELLOWSHIP IN BRAIN LIPID METABOLISM

The Laboratory of Neurosciences, National Institute on Aging, Public Health Service, National Institutes of Health, invites applications for a Staff Fellowship position to study brain lipid metabolism in relation to development and aging. Research opportunities include:

- 1.) Examination of incorporation of precursors of brain lipids in animals in vivo, using quantitative pharmacokinetic and autoradiographic techniques
- 2.) Applying methods for subcellular and chemical fractionation of brain lipids
- 3.) Examining intermediary brain lipid metabolism
- 4.) Examining lipid composition of the human brain in relation to aging and Alzheimer's disease.

The position is that of a Staff Fellow, Senior Staff Fellow or Medical Staff Fellow, with salary commensurate with qualifications. Appointments vary in duration from 2 to 7 years and are tenure-track. The position is located in Bethesda, Maryland, and is available immediately.

Applications are invited from qualified individuals having a Ph.D., M.D., or combined degrees, and pertinent research experience. Applications from women and minorities are invited. Interested candidates should submit their Curriculum Vitae and two letters of recommendation to:

Dr. Stanley I. Rapoport, M.D.  
Chief, Laboratory of Neurosciences  
National Institute on Aging, NIH  
Building 10 Room 6C103  
9000 Rockville Pike  
Bethesda, Maryland 20892



NIH IS AN EQUAL OPPORTUNITY EMPLOYER

## DIRECTOR PHARMACOLOGY/ TOXICOLOGY

**LYPHOMED'S** Ethical Pharmaceutical Research and Development division is expanding to ensure rapid and successful development of several new therapeutic drugs for prophylaxis and treatment of infectious diseases, cardiovascular diseases, metabolic bone diseases and cancer. Presently, we have a challenging opportunity available for Director of Pharmacology/Toxicology.

The selected candidate will possess a PhD in Pharmacology or Toxicology and at least 3-5 years experience with drug development in a pharmaceutical company.

Responsibilities include planning and conducting preclinical development of new drugs in conjunction with external laboratories and evaluating animal pharmacology and toxicology data for potential in licensing compounds.

Lyphomed is located in the western suburbs of Chicago, Illinois. The salary and benefits package is highly competitive and includes life, disability, health and dental insurance, a 401K plan and bonus/profit sharing. Please send your confidential resume and salary history to:

David Dvorak



**Lyphomed**

10401 W. Touhy, Rosemont, IL 60018  
equal opportunity employer m/f



## POSITIONS OPEN

### THE STEHLIN FOUNDATION FOR CANCER RESEARCH CELL BIOLOGIST

The Stehlin Foundation for Cancer Research invites applications for a cell biologist. Applicants should have experience in tissue culture of mammalian cells. Rank and salary will be determined by qualifications; established investigators are also encouraged to apply. Applicants should submit curriculum vitae and names and addresses of three or more references to: **B. C. Giovannella, Ph.D., Laboratory Director, The Stehlin Foundation for Cancer Research, 1315 Calhoun, Suite 1818, Houston, TX 77002.**

**CELL BIOLOGIST**—Tenure-track position beginning fall 1990, for assistant or associate professor. Candidates must have Ph.D. with research abilities (as demonstrated by publications) in cell biology working at the level of the cell membrane. The successful candidate will have an interest in receptors, membrane-cytoskeletal interactions, transduction of signals, or a similar area. Postdoctoral experience is preferred. Teaching responsibilities include courses in cell biology. Send curriculum vitae, four letters of recommendation, representative reprints, and description of research interests by 15 January 1990 to: **Dr. James N. Thompson, Jr., Chair, Department of Zoology, University of Oklahoma, Norman, OK 73019.** An Equal Opportunity/Affirmative Action Employer.

### CHAIR, DEPARTMENT OF BOTANY ARIZONA STATE UNIVERSITY

Nominations and applications are sought for an outstanding scientist to provide departmental leadership and promote excellence in research and teaching at Arizona State University. The department has strong research programs, vigorous undergraduate and graduate training, and productive, collaborative relationships with other departments and research centers. Research and teaching space will double by the end of 1991 to accommodate further expansion. Applicants must have a doctorate and be tenurable at the professor rank. Preferred areas of expertise are plant ecology/environmental biology, plant molecular/cellular biology, or plant physiology. The deadline for nominations is 15 December 1989. The review of applications will begin 15 January 1990, and will continue until a suitable applicant is selected. Candidates should forward curriculum vitae, statement of academic and administrative philosophy, and the names, addresses, and telephone numbers of at least three references. A more complete position description is available upon request. Send direct nominations and applications to: **T. H. Nash, Chair, Botany Chair Search Committee, Arizona State University, Tempe, AZ 85287-1601.** Affirmative Action/Equal Opportunity Employer.

### CHAIRPERSON, MICROBIOLOGY— SEARCH EXTENDED

The Department of Microbiology of the University of Maryland at College Park (main campus) is seeking nominations and applications of scientists qualified to serve as a departmental chairperson. The department currently consists of 12 faculty and 50 graduate students. Research strengths are in marine microbiology and molecular biology. Departmental researchers actively collaborate with scientists at the National Institutes of Health, the Naval Research Institute, the U.S. Department of Agriculture, and the University's Centers of Biotechnology. Applicants should have a Ph.D. and have demonstrated outstanding abilities in research in microbiology or related fields in molecular biology and biochemistry. Evidence of administrative ability is also required. Appointment will be made at the professor level (tenured) with appropriate salary and benefits. For best consideration, curriculum vitae and the names, addresses, and telephone numbers of four references should be sent by 1 December 1989 to: **Dr. Alan Teramura, Microbiology Chair Search Committee, Department of Botany, University of Maryland, College Park, MD 20742.** The University of Maryland is an Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

### CHAIRPERSON DEPARTMENT OF BIOLOGY

The Department of Biology, Southwest Texas State (SWT) University invites applications for the position of **CHAIRPERSON**. Candidates must have a Ph.D. in biological sciences and an excellent record in research, teaching, and leadership. Appointment will be made at the rank of associate or higher. Salary: Associate (\$61,656) or Full (\$64,812). The department has 32 faculty and offers B.S., B.A., M.A., and M.S., degrees in eight fields. Secondary certification for public schools is also available. SWT is a comprehensive, public institution with over 20,000 students, located between Austin and San Antonio. Applicants must submit a letter detailing their interest and qualifications; a brief statement of educational and administrative philosophy; copy of college transcripts; name, address, and phone number of three references; and curriculum vitae to: **Dr. Bobby Whiteside, Search and Screen Committee, Department of Biology, Southwestern Texas State University, San Marcos, TX 78666.** Applications must be postmarked by 5 January 1990. *SWT is an Affirmative Action/Equal Opportunity Employer.*

**CLINICAL CHEMISTRY**—The Department of Biochemistry at The Cleveland Clinic Foundation (CCF) has a staff position for a Ph.D. who is ABCC-eligible/certified. An interest in therapeutic drug monitoring, lipids, or nutritional assessment is essential. The candidate should have a strong commitment to clinical service and education. Applications, including curriculum vitae and at least three references, should be mailed to: **Frederick Van Lente, Ph.D., Chairman, Department of Biochemistry, Cleveland Clinic Foundation, One Clinic Center, 9500 Euclid Avenue, Cleveland, OH 44195.** CCF is an Equal Opportunity Employer.

### COGNITIVE NEUROSCIENTIST

Tenure-track assistant professor position in cognitive neuroscience available fall of 1990. Outstanding senior applicants also considered. Selected candidate will be a member of Department of Psychology (Psychobiology Program) and the Cognitive Science Center. Seek outstanding applicants who have demonstrated independent research. Specific area should include both a cognitive and basic neuroscience orientation. Candidate will be involved in promoting interactions between the cognitive and neuroscience programs through the Cognitive Science Center. Applicants should send curriculum vitae, selected publications, and three letters of reference to: **Dr. John Bruno, Department of Psychology, 1885 Neil Avenue, Ohio State University, Columbus, OH 43210.** Ohio State University is an Equal Opportunity/Affirmative Action Employer. Deadline: 31 December 1989.

### DEVELOPMENTAL BIOLOGIST PHYSIOLOGICAL ECOLOGIST

California State University (CSU) at San Marcos, a newly forming campus 30 miles north of San Diego, invites applications for two tenure-track assistant professor/associate professor appointments in the Department of Biology. The campus expects to teach at least 10,000 students in a liberal arts-based program within 10 years. We seek individuals who focus on the physiological/biochemical mechanisms which govern (i) the adaptation of a species to its environment; or (ii) a developmental process in plants, animals, or microbial systems.

Postdoctoral experience is required. Although the CSU system emphasizes undergraduate- and graduate-level teaching, the San Marcos campus will make every effort to encourage and enable active research. The proximity of the institution to ocean, desert, and chaparral makes terrestrial and aquatic (vertebrate or invertebrate) materials easily available for study.

Send letter of application, résumé, statement of research and teaching interests and accomplishments, and names, addresses, and phone numbers of three references postmarked by 1 December 1989 to: **Dr. Larry W. Cohen, Founding Faculty of Biology, CSU, San Marcos, 820 West Los Vallecitos, San Marcos, CA 92069.** Telephone: 619-471-4174.

An Equal Opportunity/Affirmative Action/Title IX Employer.

## POSITIONS OPEN

### DIRECTOR, DIVISION OF PUBLIC HEALTH EMORY UNIVERSITY

Emory University seeks applications for the position of **DIRECTOR** of the new Division of Public Health. Emory's dedication to excellence in research and education, its commitment to build a preeminent School of Public Health, and the unique character of the associated institutions in Atlanta, make this an unparalleled opportunity.

The division, which has evolved from a successful Master of Public Health Program, includes concentrations in biostatistics, environmental health, epidemiology, health administration, health education, and international health. The program attracts academically competitive students from throughout the world. The division has status equal to other professional schools of the university and the director, who will be responsible for all financial and academic matters, will report directly to the Vice President for Health Affairs.

The successful candidate will have broad interests in public health, skill in fostering quality research and academic programs, and the ability to originate and implement visionary goals for public health. The director will be expected to enhance active collaborations with the adjacent Centers for Disease Control, the Carter Center of Emory University, the Georgia Department of Human Resources, the Medical School, and other schools of the university.

Candidates should have an earned doctorate, M.D., or Ph.D., a distinguished research and scholastic record appropriate to the faculty rank of a dean at Emory and a significant administrative experience, preferably within a university.

The committee will begin screening applications 15 December 1989, and continue until the position is filled. Send curriculum vitae and a list of three references to: **Dr. John R. Boring, III, Chair of Public Health Search, Emory University School of Medicine, 1440 Clifton Road, Room 409, Atlanta, GA 30322.**

*Emory is an Equal Opportunity Employer.*

**DIRECTOR, MACROMOLECULAR RESOURCE FACILITY.** Duties include operation of new DNA/RNA and peptide synthesizers and protein sequenator. Applicants must have minimum of M.S. degree or B.S. degree and 2 years of experience in protein/nucleic acid chemistry, and be computer literate. Appointment is a university-funded non-tenure-track faculty position. Collaborative research is expected and independent research opportunities are available for applicants with Ph.D. Start date: 1 January 1990. Send résumé and three reference letters by 1 December 1989 to: **Chair, MRF Search Committee, Department of Biochemistry, Colorado State University, Fort Collins, CO 80523.** CSU is an Equal Opportunity/Affirmative Action Employer. Equal Opportunity office: 314 Student Service Building.

**DIRECTOR, Program for Minority Advancement in the Biomolecular Sciences,** a new initiative at the University of North Carolina at Chapel Hill, funded by the Howard Hughes Medical Institute. The focus is to attract minorities into science careers by involving university and high school faculty and college undergraduates through participation in a laboratory course and tutorials.

The Director will work with faculty to develop curriculum and will manage Program operations. The Director (non-tenure track), should have a Ph.D. in the biomolecular sciences and 2 years of postgraduate research and teaching experience. Interested individuals should submit curriculum vitae, summary of teaching and research experience, and names of three references to: **Dr. Jean DeSaix, Implementation Director, The Program for Minority Advancement in the Biomolecular Sciences, Department of Biology, Coker Hall, CB# 3280, University of North Carolina at Chapel Hill, NC 27599-3280.**

Applications are especially sought from females and minorities, who are encouraged to identify themselves voluntarily. The University of North Carolina at Chapel Hill is an Equal Opportunity/Affirmative Action Employer.

## EXECUTIVE DIRECTOR

### SPOKANE INTERCOLLEGIATE RESEARCH & TECHNOLOGY INSTITUTE

Five Spokane, Washington colleges and universities are searching for an executive director of the research and technology institute recently authorized by the state legislature. The Institute is intended to stimulate economic and product development by fostering interactions between academic and private sector scientists in applied engineering and technology research. The Institute is organized programmatically around four elements: education and training, research and product development, business resource support, and information transfer. This is a senior level position requiring extensive experience in research, development, administration. Ph.D. in engineering or applied sciences preferred. Letter of application, three references, and curriculum vitae should be received by November 30, but no later than December 29. Application instructions and information available from: **Search Committee, Washington State University at Spokane, W. 601 First Avenue, Spokane, WA 99204-3099, (509) 456-3275.** WSU is an EO/AA educator and employer. Protected group members are encouraged to apply.



Swiss Federal Institute of  
Technology and University  
of Zurich, Switzerland

### Full Professor of Toxicology and Head of the Section of Structural Toxicology

The position is open in September 1991. The section of structural toxicology includes laboratories for pathology, hematology, immunological toxicology and in vitro toxicology. The successful applicant must have a firm record of research accomplishments in modern toxicology and is expected to collaborate closely with the sections of chemical, genetic and functional toxicology. He should have leadership qualities and some teaching experience in toxicology.

For consideration, please forward your curriculum, including a list of your publications and reprints of your five most important publications, as well as the names of three referees to Dr. Philipp U. Heitz, Chairman of the Search Committee, Institute of Pathology, University of Zurich, Schmelzbergstrasse 12, CH-8091 Zürich, Switzerland, not later than January 15, 1990.



## Cardiovascular Research

### Associate Scientist

CIBA-GEIGY Pharmaceuticals Division is respected worldwide for innovative products to treat cardiovascular and other disorders.

The Cardiovascular Research Department at our 100-acre headquarters complex in Summit, New Jersey, offers cellular study challenges that require a BS in Biology, Biochemistry or Cell Biology (MS an asset) and at least 1-3 years experience. Will conduct experiments on the cellular and biochemical basis of heart injury and cardiovascular therapy. Techniques include tissue culture, metabolite and enzyme assays, chromatography, cell fractionation, spectrophotometry, analytical methods for lipids, proteins, and other biomolecules, and organization of data. Must be willing to learn new techniques.

We offer competitive salaries, excellent benefits and opportunities for advancement. Please send resume with salary history and requirements to: **Al Aronson, Staffing Center, CIBA-GEIGY Corporation, Pharmaceuticals Division, Dept. 307, 556 Morris Avenue, Summit, New Jersey 07901.** We Are An Equal Opportunity Employer M/F/H/V.

Science Serving Mankind

# CIBA-GEIGY

## Molecular Biology and Bone Metabolism

Recognizing the vital role molecular biology plays in drug discovery, Pfizer is committed to an expansion of its Molecular Genetics Department. One aspect of this expansion involves the formation of core groups of molecular biologists focusing on a particular disease area.

As a result of this commitment, a position exists for an individual with at least two years postdoctoral experience in cDNA library construction and cDNA cloning. You also should have experience with, or an interest in, applying molecular biology skills to developing new drug discovery approaches in the area of bone metabolism, with a particular emphasis on osteoporosis.

In addition to a stimulating scientific environment, we offer a competitive compensation/benefit package and relocation assistance to an attractive southeastern Connecticut shore community. Qualified applicants should submit their resume and names of three references in confidence to: Jerry K. Larson, PhD, Assistant Director, Employee Resources, Pfizer Central Research, Eastern Point Road, Groton, CT 06340. *Please make reference to "Science A" in your application.* An equal opportunity employer.



CENTRAL RESEARCH

## POSITIONS OPEN

### FACULTY POSITION IN BIOCHEMISTRY LEHIGH UNIVERSITY

Applications are invited for an open rank, tenure-track faculty position in biochemistry. Outstanding individuals with at least 2 years of postdoctoral experience and a strong commitment to research and teaching are encouraged to apply. Applicants should submit a curriculum vitae, list of publications, a concise research plan, and arrange to have three letters of reference sent to: **Dr. J. A. Alhadeff, Department of Chemistry, Lehigh University, Building A, MTC, Bethlehem, PA 18015.** *Lehigh University is an Affirmative Action/Equal Opportunity Employer.*

### FACULTY POSITION—VASSAR COLLEGE

The Department of Chemistry invites applications for a tenure-track position (assistant professor) to begin with the academic year 1990–91. Ph.D. in organic chemistry with research interests in environmental chemistry or Ph.D. in environmental chemistry with strong background in organic chemistry. Responsibilities include: teaching undergraduate organic chemistry, and environmental chemistry; directing independent research projects for undergraduates and for master's degree candidates. The faculty member is expected to be active in research. Send curriculum vitae, transcripts, outline of research interests, and three letters of recommendation to: **Dr. Joan A. Deiters, Department of Chemistry, Box 406, Vassar College, Poughkeepsie, NY 12601.**

Closing date for applications is 15 December 1989. *Vassar College is an Equal Opportunity/Affirmative Action Employer.*

### UNIVERSITY OF PITTSBURGH DEPARTMENT OF BIOLOGICAL SCIENCES FACULTY POSITION

The Department of Biological Sciences at the University of Pittsburgh invites applications from highly qualified individuals with strong research commitment for a tenure-track Assistant Professor position in one of the following areas: molecular genetics, cell and developmental biology, molecular structure. This position is one of several which will be filled in the near future as the department expands its research interests in these and other areas. In addition to establishing a vigorous research program, the candidate will direct graduate research and participate in teaching programs. Starting date: 1 September 1990. Applicants with a Ph.D. and postdoctoral experience should forward a brief description of research plans and curriculum vitae, and arrange for three letters of recommendation to be sent to: **Faculty Search Committee, Department of Biological Sciences, University of Pittsburgh, Pittsburgh, PA 15260.** *The University of Pittsburgh is an Equal Opportunity/Affirmative Action Employer. Applications from minority and women candidates are especially encouraged.*

### FACULTY POSITIONS

The newly formed Basic Science Department of Microbiology at The University of Texas Medical School, at Houston, invites applications for both tenure-track and tenured faculty positions at the level of assistant, associate, or full professor. The initial areas of recruitment interest are in: prokaryotic microbial physiology, microbial genetics and molecular microbiology. Candidates must have the Ph.D. and/or the M.D. degree. Postdoctoral research experience is essential for consideration of a prospective assistant professor. Applicants for associate or full professorships must have demonstrated high quality research performance. Successful applicants will be expected to teach medical students, graduate students, and develop and/or maintain a high level, high visibility research program, competitive at the national level. Please send curriculum vitae and a statement of teaching and research interests as well as the names of four referees to:

**Dr. Samuel Kaplan  
Department of Microbiology  
The University of Texas Medical School, at Houston  
P.O. Box 20708  
Houston, TX 77225**

*The University of Texas Health Science Center is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

## POSITIONS OPEN

### FACULTY POSITION DIRECTOR OF BIOLOGY FOR NONMAJORS

The Department of Biological Science, California State University, Fullerton, invites applications for a full-time, tenure-track position as Director of Nonmajors Biology (Assistant or Associate rank) starting 27 August 1990. Qualifications include a Ph.D. in biological science with experience in and a strong commitment to teaching nonbiology majors, and research experience in his/her field of specialization.

The successful candidate will administer multiple sections of a nonmajors introductory biology course (approx. 2400 undergraduates annually) and coordinate existing and newly developed laboratory exercises; supervise and train teaching assistants; integrate course activities with participating faculty; teach at least one lecture and/or laboratory section per year; design and implement a long-range revision program. Contemporary pedagogical skills such as interactive video- and computer-assisted instruction are desirable. The candidate will maintain an active research program in ecology or evolutionary biology, and will have opportunities to teach upper division and master's level courses.

Applicants should send curriculum vitae, documentation of excellence and experience in teaching introductory biology, experience in curricular development of laboratory activities, comprehensive statement of philosophy of teaching nonmajors, outline of research program, copies of recent publications, and three letters of recommendation to: **101 Director Search Committee Chair, Department of Biological Science, California State University, Fullerton, CA 92634-4080.** Deadline for receipt of applications is 15 January 1990, or until a suitable candidate is appointed.

*Affirmative Action/Equal Opportunity Employer.*

### FACULTY POSITIONS DEPARTMENT OF BIOLOGY SAINT MARY'S COLLEGE OF CALIFORNIA

Applications are invited for two tenure-track positions at the assistant professor level to begin September 1990. Ph.D. required. Successful candidates will demonstrate excellence in teaching and commitment to an active research program involving undergraduates.

**PLANT PHYSIOLOGICAL ECOLOGY:** A broad background in plant biology required, with research specialization in physiological ecology. Teaching to include plant physiology, general ecology, and introductory biology.

**VERTEBRATE PALEONTOLOGY:** Teaching competence in comparative/human anatomy and evolutionary biology required. Participation in introductory biology courses expected. Primary research interest to be vertebrate paleontology.

Saint Mary's College is a coeducational liberal arts college located in the San Francisco Bay Area with expanding programs in science. *We strongly encourage applications from women and minorities.* Send curriculum vitae, statement of teaching and research goals, three recommendations, and transcripts (undergraduate and graduate) by 15 January 1990 to: **Dr. J. F. Lester, Department of Biology, P.O. Box 4507, Saint Mary's College of California, Moraga, CA 94575.** *An Equal Opportunity Employer.*

### FACULTY POSITION DEPARTMENT OF GEOLOGY AND GEOPHYSICS UNIVERSITY OF CALIFORNIA, BERKELEY

Applications are invited for a tenure-track faculty position at the junior level in the Department of Geology and Geophysics, pending final budgetary approval. This appointment could also be made with tenure. All areas of geology will be considered. Applications along with curriculum vitae, statement of research interests, representative reprints, and the names of three references should be sent by 15 December 1989 to: **Dr. William E. Dietrich, Chair, Search Committee, Department of Geology and Geophysics, University of California, Berkeley, CA 94720.**

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

## POSITIONS OPEN

### FACULTY POSITION IN NEUROSCIENCE

The Medical College of Wisconsin is continuing its expansion in the area of neuroscience. A tenure track position at the **ASSISTANT OR ASSOCIATE PROFESSOR** level will be available beginning 1 July 1990. We wish to recruit candidates with expertise in any of the following: optical imaging of neural activity, intracellular recording and dye injection, animal psychophysics, neurochemistry, or molecular biology as they apply to the study of the structure and function of mammalian visual cortex. Applicants should plan to develop a vigorous, independent research program and to collaborate with existing faculty. Teaching will involve participation in one or two team-taught neuroscience courses for medical and graduate students. Significant start-up or supplemental research funds and laboratory space are available. Applicants should send a curriculum vitae and description of current research, future plans, and the names of three references by 1 February 1990 to:

**Dr. Margaret Wong-Riley  
Chairman, Faculty Search Committee  
Department of Anatomy and Cellular Biology  
Medical College of Wisconsin  
8701 Watertown Plank Road  
Milwaukee, WI 53226**

*The Medical College of Wisconsin is an Affirmative Action/Equal Opportunity Employer.*

### FACULTY POSITION IN PROCARYOTIC MOLECULAR BIOLOGY

The Center of Marine Biotechnology of the Maryland Biotechnology Institute, University of Maryland System, invites applications from outstanding candidates to occupy a full-time, tenure-track faculty position (assistant or associate professor) in procaryotic molecular biology. Prior work in marine systems is an advantage, but not essential. The successful candidate will be expected to foster independent research programs in one of the following general areas: (i) molecular ecology, with an emphasis on microbial diversity in communities; (ii) archaeobacterial molecular biology; (iii) biochemical and genetic aspects of photosynthetic bacteria. Many opportunities exist for collaborative research at the Center of Marine Biotechnology, and many of the faculty hold joint appointments with nearby teaching units.

Candidates must have a Ph.D. and a minimum of 2 years of postdoctoral experience. To apply, submit a letter of application, curriculum vitae, brief description of current research and research plans, and names and addresses of three references to: **Procaryotic Molecular Biology Search Committee, Center of Marine Biotechnology, 600 East Lombard Street, Baltimore, MD 21202.** For best consideration, applications should be received before 31 January 1990, but they will be accepted until the position is filled.

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

### FACULTY POSITION IN ORGANISMAL PLANT BIOLOGY FLORIDA STATE UNIVERSITY

The Department of Biological Science is continuing its expansion in the area of plant biology and is seeking a new faculty member whose botanical research specialty is focused at the whole-organism level. We are interested in botanists working in any of the following general areas: physiological ecology, population and community ecology, ecological genetics, and evolutionary systematics. Extensive, staffed, research-support facilities are available, including laboratories for nucleotide and protein sequencing, molecular analysis, hybridoma technology, electron microscopy, and computer graphics; a machine shop; an electronics shop; two greenhouses; and a 15-acre farm. The appointment will be at the level of **ASSISTANT PROFESSOR**, and the successful applicant will be expected to develop an active program of research and graduate training and to teach at the undergraduate level. Send letter of application, curriculum vitae, copies of publications, statement of research and teaching interests, and names and addresses of three references by 31 December 1989 to: **Search Committee, c/o L. G. Abele, Chairman, Department of Biological Science, Florida State University, Tallahassee, FL 32306-2043.** *Florida State University is an Affirmative Action/Equal Opportunity Employer. Applications from women and minorities encouraged.*

**The University of Virginia  
Beirne Carter Center for  
Immunology Research**

**Endowed Chair in Immunology**

The University of Virginia is seeking an outstanding scientist to provide intellectual leadership for the Beirne Carter Center for Immunology Research. The Center is an interdepartmental program with the overall goal of fostering and coordinating research and research training in immunology. The Center is newly formed as the result of a gift from a University alumnus. Research will focus on the fundamental mechanisms underlying the induction and regulation of immune responses.

Funds are available to recruit scientists to fill several faculty positions. Candidates or those wishing to nominate outstanding individuals should direct their communications to:

Rodney L. Biltonen  
Pharmacology Department  
Box 448, Health Sciences Center  
University of Virginia  
School of Medicine  
Charlottesville, VA 22908

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



**THE AUSTRALIAN NATIONAL UNIVERSITY**  
**Institute of Advanced Studies**  
*Research School of Biological Sciences*

**DIRECTOR**

The University seeks to appoint a Director of the Research School of Biological Sciences to succeed Professor R.O. Slatyer, FAA, FRS, AO, who has taken up appointment as Chief Scientist in the Department of the Prime Minister and Cabinet.

The Director of the School will be responsible through the Vice-Chancellor to the University Council for the operation and development of the School, for its leadership as an academic enterprise and for its administration and financial management. Therefore, the University is looking to appoint a person with broad biological interests, who is active and eminent in research, preferably in an area that strengthens the School's current activities, and who has experience in science management and knowledge of science policy at University and government levels.

The Research School is a multi-disciplinary institute for research and post-graduate training on fundamental biological problems, conducted in an environment that encourages work on especially challenging topics with long as well as short term approaches. Currently nearly 70 academic staff, of whom 25 are tenured, with 60 graduate students, are organised into 9 research groups covering areas of developmental and molecular neurobiology, visual science, molecular and population genetics, plant molecular and cell biology, plant-microbe interactions, plant environmental biology and ecosystems dynamics. They are supported by some 80 administrative and technical staff.

The successful candidate will be appointed a Professor, with tenure, of the University. The term of office as Director will be fixed by the University in consultation with the person recommended. Remuneration will be, currently, \$67,831 p.a. as Professor, plus a Director's loading of, currently \$6,675 p.a.

Those who may be interested in being considered for this appointment are invited to write to the undersigned from whom further information may be obtained. The University reserves the right not to make an appointment or to appoint by invitation at any time.

Closing date: 13 November 1989

Ref. RB 14.9.1

**GPO Box 4  
Canberra ACT 2601  
AUSTRALIA**

**R.V. Dubs**  
Registrar

AB1-10389

THE UNIVERSITY IS AN EQUAL OPPORTUNITY EMPLOYER

**PLANT  
SCIENTIST**

Ricerca, Inc. needs a Plant Scientist with a broad perspective of agricultural and environmental issues. The ideal candidate will have a Ph.D. in an appropriate discipline; however, candidates with M.S. or B.S. degrees plus extensive experience will be considered. Expertise in herbicide and/or PGR research in the laboratory, greenhouse and field is a primary requirement. Additional experience in plant physiology or biochemistry is highly desirable. Excellent oral and written communication skills are necessary for client relations and report writing.

Ricerca, Inc. is a research and development company which provides broad-based technical services to clients on a contract basis. Our facilities are located in Concord Township, an attractive Cleveland suburb. We offer competitive salaries and an excellent Employee Benefits Program.

Qualified applicants are encouraged to submit resumes to our Human Resources Department.

**Ricerca, Inc.**

P.O. Box 1000 • Painesville, OH 44077  
An equal opportunity employer.

**Molecular Biologist**

Parke-Davis Pharmaceutical Research Division, Warner-Lambert Company, has an immediate opening in the Molecular Biology Department for an Assistant/Associate Scientist. The successful applicant will join an experienced multi-disciplinary team of dedicated scientists working in the Molecular Biology Department.

The qualified candidate will perform biochemical assays related to discovery of novel antihypertensive compounds through understanding of membrane receptor structure and function. Initially, this will primarily entail binding site analysis, but will also include analysis of receptor activation by examination of various second messenger systems.

A B.S. or M.S. in Biochemistry, Molecular or Cellular Biology, with experience in receptor binding assays is required. Applicants must be willing to use radioisotopes and work with laboratory animals. Cell culture experience would be beneficial and good communication and data analysis skills are essential.

Employment will be at our modern facilities adjacent to the University of Michigan campus. We offer excellent benefits. Interested, qualified applicants should send curriculum vitae and salary requirements in confidence to: **Mr. Bill Burmeister, Human Resources Representative, PARKE-DAVIS, 2800 Plymouth Road, Ann Arbor, Michigan 48105. "A Smoke-Free Work Environment"**



**PARKE-DAVIS**  
DIVISION OF WARNER LAMBERT COMPANY

"Equal Opportunity In Action"

## POSITIONS OPEN

### FACULTY POSITION PROGRAM IN PROTEIN STRUCTURE AND DESIGN UNIVERSITY OF MICHIGAN

Applications are invited for a tenured or tenure-track position (rank open) associated with the Program in Protein Structure and Design. The academic appointment will be in the Department of Chemistry, with a joint research appointment in the Biophysics Research Division. We seek an individual who will interact with and complement the existing structure groups in the program (x-ray crystallography; EPR, NMR, and vibrational spectroscopies; electron microscopy; theoretical and computational techniques). Senior candidates must have an internationally recognized program, and junior candidates must provide evidence of ability to develop a strong research program oriented around modern theoretical approaches to analyzing and predicting protein structure and function. Teaching duties will be associated primarily with the Department of Chemistry. Interested candidates should send, by 2 January 1990, curriculum vitae documenting qualifications, professional accomplishments, and future plans, together with names and addresses of three references, to:

**Professor S. Krimm, Director  
Program in Protein Structure and Design  
University of Michigan  
2200 Bonisteel Boulevard  
Ann Arbor, MI 48109**

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

### MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) PLANETARY SCIENCE FACULTY

The Department of Earth, Atmospheric, and Planetary Sciences at MIT expects to make as many as two faculty appointments in Planetary Science, beginning as early as the fall semester of 1990. Rank and salary are open, but we particularly encourage potential junior faculty to apply. Applications are invited from scientists working in any area of planetary science; the areas of planetary physics and planetary chemistry are of particular interest. Existing faculty specialize in observational and theoretical studies of planetary rings, asteroids, radio and radar observations of bodies in the inner solar system, dynamics of the solar system, VLBI geodesy, chemistry and dynamics of planetary atmospheres and tectonics of the terrestrial planets. Facilities available include the 1.3-m and 2.4-m optical telescopes of the McGraw-Hill Observatory in Arizona and the Wallace Astrophysical and Haystack Radio Observatories, both in Westford, Massachusetts, and numerous on-campus computers. The successful applicant would be expected to share in the teaching responsibilities of the department. Interested individuals should send a curriculum vitae, list of publications, and the names of three references to: **Dr. T. H. Jordan, Chairman, Department of Earth, Atmospheric and Planetary Sciences, Building 54-918, MIT, 77 Massachusetts Avenue, Cambridge, MA 02139, by 15 December 1989.** MIT is an Equal Opportunity/Affirmative Action Employer.

### HEMATOLOGY AND ONCOLOGY

The Ohio State University seeks an M.D. or M.D./Ph.D. for an assistant/associate professor of Internal Medicine, Division of Hematology/Oncology. Candidates should be BC in Internal Medicine and BE in either Hematology or Oncology. Experience in clinical and laboratory research. Tenure-track full-time position. Send curriculum vitae, summary of research, and references to: **Stanley Balcerzak, M.D., N1021 Doan Hall, 410 West 10th Avenue, Columbus, OH.** Equal Opportunity/Affirmative Action Employer.

**HUMAN NUTRITION/FOOD SCIENCE SPECIALIST.** Two assistant professor positions, tenure-track, 12-month, 1 July 1990. Teach undergraduate courses including geriatric and/or mineral nutrition, direct M.S., Ph.D. students, develop research program. Requires Ph.D. in nutrition, food science, or related field. Postdoctoral experience preferred. Application deadline: 1 February 1990, or until filled. Application letter, curriculum vitae, and three references to: **Dr. R. P. Abernathy, Department of Foods and Nutrition, Purdue University, West Lafayette, IN 47907. Telephone: 317-494-8231.** Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**GENETIC TOXICOLOGIST.** The Division of Science and Research in the New Jersey Department of Environmental Protection (NJDEP) has an opening for someone with a background in genetic toxicology. The position involves evaluating the usefulness of short-term genetic assays in assessing the toxicity of complex mixtures, such as air particulates, wastewater, and potable water, and as dosimeters of human exposure to mutagenic agents. The applicant should have a master's or doctoral degree in a relevant scientific discipline as well as have familiarity with the use of genetic toxicity assays. Experience with environmental samples is desirable, but not required. The salary for the position is dependent upon education and experience. If interested, please send a letter of application and résumé, including salary history, to: **Judith B. Louis, Ph.D., Manager, Environmental Exposure Unit, Division of Science and Research, NJDEP, CN 409, Trenton, NJ 08625.**

*New Jersey is an Affirmative Action/Equal Opportunity Employer.*

**HUMAN NEUROPHYSIOLOGIST** to direct event-related potential studies in schizophrenics and normals at Harvard Medical School, Brockton, Virginia, Medical Center beginning 1 July 1990. Will be section chief, Laboratory of Neuroscience (**R. W. McCarley, Director**). Harvard faculty appointment in Department of Psychiatry (Assistant Professor, etc.) and salary levels commensurate with experience. Experience in cognitive neuroscience studies of attention, in pathological populations, and background in basic neuroscience useful. Send curriculum vitae and three publications to: **R. W. McCarley, Chair, Search Committee, Psychiatry 116A, VA Medical Center, Brockton, MA 02401.** Affirmative Action/Equal Opportunity Employer.

**IMMUNOLOGIST.** The University of Washington seeks highly qualified applicants for tenure-track appointments in the newly formed Department of Immunology. Applicants must have demonstrated their ability to establish strong independent research programs in immunobiology. The Department of Immunology offers superb new laboratory space with access to flow cytometry, biopolymer synthesis, and transgenic animal facilities. Send curriculum vitae, a brief description of proposed research, and three letters of recommendation (by 1 December 1989) to: **R. M. Perlmutter, M.D., Ph.D., Chairman, Department of Immunology, SL-05, University of Washington, Seattle, WA 98195.** The University of Washington is an Equal Employment/Affirmative Action Employer.

**IMMUNOLOGY ASSISTANT SPECIALIST—**B.S. and/or M.S. Demonstrated research experience studying membrane proteins involved in immunological function. Duties include: analysis of structure and function of immunologically relevant proteins by molecular cloning, transfection, analysis of cytoplasmic and surface expression, supervision and maintenance of cell culture facility, preparation of stock laboratory reagents and general lab management. Knowledge of molecular biology and immunology is required. Salary range: \$27,800 to \$31,900. Send résumé and list of laboratory skills to: **Department of Microbiology, Box 0414, University of California, San Francisco, San Francisco, CA 94143 by 15 November 1989.** UCSF is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

**INVERTEBRATE AND VERTEBRATE ZOOLOGISTS.** Applications are invited for two tenure-track positions at the ASSISTANT PROFESSOR level, effective 1 August 1990. Ph.D. required. Teaching responsibilities are two courses with laboratory per semester: Introductory Zoology and one advanced course (Comparative Anatomy, Invertebrate Zoology, Animal Ecology, or other in area of specialty). We are seeking individuals with a commitment to undergraduate science education and to active involvement of students in research. Research and teaching facilities include recently renovated laboratories, animal room, greenhouse, and SEM, all housed in the Life Science Building, and the adjacent 350-acre Biological Reserve. Send letters of application, three letters of recommendation, and transcripts to: **Dr. Philip Stukus, Chair, Department of Biology, Denison University, Granville, OH 43023.** Applications will be considered beginning 20 November 1989, and continue until the positions are filled. Denison University is an Affirmative Action/Equal Employment Opportunity Employer.

## University of California, Davis POSTDOCTORAL POSITIONS IN POPULATION BIOLOGY

The Center for Population Biology at the University of California, Davis invites applications for up to three postdoctoral positions in population biology, broadly defined, including systematics, ecology, population genetics and evolution. Positions can be for up to three years, and will begin between February 1, 1990 and August 31, 1990. Salary will range from \$25,000 to \$30,000, depending upon qualifications, plus a modest yearly supplement for research support, depending upon needs. Successful individuals will be members of the Center for Population Biology and will be expected to have an independent research program, in which they interact with one or more faculty at Davis.

Interested candidates should submit i) a curriculum vitae, ii) names of three references, iii) a short (1-2 page) description of research accomplishments, and iv) a short (1-2 page) description of proposed research to: Search Committee, Center for Population Biology, c/o Department of Zoology, University of California, Davis, Davis, CA 95616. Applications should be received by 31 December 1989 to assure proper consideration.

**UCD is an Equal Opportunity /  
Affirmative Action Institution.**

## POST-DOCTORAL FELLOWSHIPS AVAILABLE National Institutes of Health

Post-doctoral positions are available immediately in the Section on Molecular Neurobiology at the National Institute on Alcohol Abuse and Alcoholism for studies on the mechanisms of receptor-effector coupling (J. Biol. Chem. 264: 11754, 1989), the structure-function relationships of G-protein linked and ion channel receptors using receptor gene expression and site-directed mutagenesis (J. Biol. Chem. 264: 9266, 1989; Biochem. Pharmacol. 38: 1197, 1989), and mechanisms of receptor regulation. Candidates should have a strong background in receptor pharmacology/biochemistry, molecular biology or electrophysiology. Starting salaries will be commensurate with experience (\$25,000-\$28,000). For IRTA Fellowships, candidates must be U.S. citizens with less than 3 years post-doctoral experience. For Fogarty Fellowships, candidates must be non-U.S. citizens with less than 3 years post-doctoral experience.

Send C.V. and the names of three references to:

**Dr. Claire M. Fraser, Chief  
Section on Molecular Neurobiology  
Laboratory of Physiologic and Pharmacologic Studies  
National Institute on Alcohol Abuse and Alcoholism  
12501 Washington Avenue  
Rockville, MD 20892 USA**

NIH IS AN EQUAL OPPORTUNITY EMPLOYER



## DIRECTOR LAMONT-DOHERTY GEOLOGICAL OBSERVATORY OF COLUMBIA UNIVERSITY

Columbia University invites applications and nominations for the Directorship of Lamont-Doherty Geological Observatory. The Director must be capable of exerting strong intellectual leadership in the Earth Sciences. Scholarly eminence and capabilities in administration, future planning and fund raising are required.

L-DGO is an institute of Columbia University dedicated to graduate education and research in the earth, atmospheric and ocean sciences. The Observatory is located on an historic estate on the shores of the Hudson River one-half hour from the main campus of the University. Research programs are conducted by over 600 scientists, staff and graduate students.

Applications or nominations should be submitted by December 1 to:

Dr. Charles H. Langmuir, Chairman  
Search Committee  
Lamont-Doherty Geological Observatory  
of Columbia University  
Palisades, New York 10964

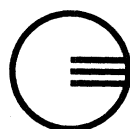
*Columbia University is an Equal Opportunity/  
Affirmative Action Employer.*

## TOXICOLOGIST CELL BIOLOGIST/PRODUCT SAFETY

The Gillette Medical Evaluation Laboratories, a division of The Gillette Company, has an opening for a toxicologist in product safety assessment. Position responsibility includes the review and analysis of current *in vitro* testing methodology and results; the safety/risk assessment of ingredients and formulas; and the implementation of applicable government regulations in order to ensure the distribution of safe consumer products. Work involves cooperation in a team effort to evaluate *in vitro* testing in-house, initiation of clinical/toxicologic product safety studies and evaluation of test data, and the review of drug claims and consumer medical comments.

Qualified candidates will possess a Ph.D. in Cell Biology (Tissue Culture) or Toxicology, as well as two to three years of "hands-on" experience in *in vitro* testing and familiarity with current literature on alternatives to animal testing. Familiarity with designing clinical/toxicologic tests for product safety evaluation and knowledge of industrial hygiene is desirable.

Gillette Medical Evaluation Laboratories is located in a new facility, outside of Washington, D.C., in an area rich in government, private, and academic scientific laboratories. We offer an excellent compensation, benefits, and relocation package. For consideration, please send a confidential resume to:



Gillette Medical Evaluation  
Laboratories  
401 Professional Drive  
Gaithersburg, MD 20879

Equal Opportunity Employer

## VICE PRESIDENT FOR ACADEMIC AFFAIRS AND DEAN, SCHOOL OF MEDICINE

### Medical College of Ohio

The Medical College of Ohio, a free-standing institution located in suburban Toledo, Ohio, invites nominations and applications for the combined position of Vice President for Academic Affairs and Dean of the School of Medicine.

As Vice President for Academic Affairs, the incumbent is a member of the College's administrative core, responsible to the President for education and research in the School of Medicine, Graduate School and the Schools of Nursing and Allied Health. These responsibilities include interactions with affiliated teaching hospitals and other organizations, planning for capital needs, and working interactively with other administrative offices to implement the missions of the College.

As Dean, the incumbent serves as the chief executive of the School of Medicine, and provides academic and administrative leadership for a faculty of 253 full-time, 40 part-time and 750 volunteer members. The School enrolls approximately 550 students in curricula leading to the M.D. or the joint M.D.-Ph.D. Degrees. The Dean represents the School of Medicine to the Board of Trustees, President, and to external audiences in the public and private sectors. Other responsibilities include short- and long-range planning and the identification and attraction of financial resources for the School.

Applications with *curriculum vitae* and nominations may be submitted for confidential review by the Search Committee to:

Chairman, Search Committee for Vice President for  
Academic Affairs and Dean, School of Medicine  
Office of the President  
The Medical College of Ohio  
P.O. Box 10008  
Toledo, Ohio 43699-0008

Review of applications and nominations will begin immediately and will continue until an appointment is made.

In employment, as in education, The Medical College of Ohio is committed to affirmative action and equal opportunity.

U.S. DEPARTMENT OF ENERGY

## POSTGRADUATE RESEARCH PROGRAMS

<b>Toxicology</b> <b>Fossil Energy</b> <b>Hazardous Wastes</b> <b>Artificial Intelligence</b> <b>Computer Sciences</b>	<b>Engineering</b> <b>Physical Sciences</b> <b>Environmental Sciences</b> <b>Life Sciences</b> <b>Risk Analysis</b>
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- Research at national laboratories
- Stipends \$20,000 - \$41,000 depending on degree, program, research area
- Recent graduate degree
- U.S. citizens or PRAs eligible

Information and applications:



**Postgraduate Research Programs**  
Science/Engineering Education Division  
Oak Ridge Associated Universities  
P.O. Box 117  
Oak Ridge, TN 37831-0117  
(615) 576-3190

## POSITIONS OPEN

**MEMBRANE BIOCHEMIST.** Tenure-track, assistant professor position, beginning August 1990. Duties: to develop an active research program in membrane biochemistry and teach graduate and undergraduate level courses. Ph.D. and postdoctoral experience required. Salary range: \$32,000 to \$36,000, 9 months. Send statement of current research pursuits, future research goals, curriculum vitae and reprints, and have three letters of recommendation sent separately to: **Dr. Paul A. Kitos, Department of Biochemistry, 3038 Hawthorn Hall, The University of Kansas, Lawrence, KS 66045-2106.** Consideration of applications will commence 1 November 1989, but applications will be accepted until 30 July 1990, or until the position is filled. *The University of Kansas is an Equal Opportunity/Affirmative Action Employer.*

## MICROBIAL MOLECULAR BIOLOGY UNIVERSITY OF SOUTHERN CALIFORNIA

The Molecular Biology Section of the Department of Biological Sciences invites applications for one tenure-track faculty position, at a junior or senior level. The successful candidate will be expected to establish and maintain a vigorous, independent research program in **MICROBIAL MOLECULAR BIOLOGY**. The candidate will also be expected to participate in the teaching programs of the department at the undergraduate and graduate level, and to participate in the further development of the Molecular Biology Section.

Applicants should send a current curriculum vitae, a statement of research plans, and the names of three references by 30 November 1989 to:

**Search Committee "M" Chairman  
Molecular Biology Section  
SHS 172, MC 1340  
University of Southern California  
Los Angeles, CA 90089-1340**

*The University of Southern California is an Equal Opportunity Employer.*

## MICROBIOLOGIST DIAGNOSTIC TEST DEVELOPMENT

A competitive Federal Civil Service position exists at the U.S. Army Medical Research Institute of Infectious Diseases, Department of the Army. Applicants must be U.S. citizens. Selectee will participate in the development of rapid diagnostic tests for use on viral, rickettsial, and bacterial human pathogens and toxins. Program emphasis is on development of diagnostic tests which are simple and rapid to perform, and utilize measurement of specific antigen, IgM antibodies, or nucleic acids. Candidates may have background in microbiology, molecular biology, biochemistry, or related fields. Experience in diagnostic test development is desirable. Salary is \$34,580 through \$53,460 per annum, depending upon qualifications. The institute, which has excellent facilities, is a leading medical research facility engaged in development of drugs, diagnostic tests, and vaccines against militarily important diseases. A large professional staff includes many disciplines within the biosciences and offers an excellent environment for collaborative multidisciplinary research. All research is unclassified and publication is encouraged. The institute is located in Frederick, Maryland, in a semirural setting, with ready access to metropolitan Washington, D.C., and Baltimore, Maryland.

Application procedures: For specific job information, application forms, and procedures, contact:

**Mr. Raymond J. Mangold  
Directorate of Civilian Personnel  
Fort Detrick, Frederick, MD 21701-5000  
Telephone: 301-663-2007**

*Equal Opportunity Employer.*

## MICROBIOLOGIST/GENETICIST

Visiting assistant professor, 1-year position at Kenyon College, Ph.D. and teaching experience preferred. Teaching duties include microbiology, genetics, and introductory biology. Applicants should submit curriculum vitae, graduate and undergraduate transcripts, three letters of reference, and a description of teaching and research interests by 15 January 1990, to: **Ray Heithaus, Chair, Department of Biology, Kenyon College, Gambier, OH 43022.**

*An Equal Opportunity Employer.*

## POSITIONS OPEN

### MICROBIOLOGIST STATE UNIVERSITY OF NEW YORK (SUNY) AT BINGHAMTON

Applications are invited for an anticipated tenure-track **ASSISTANT OR ASSOCIATE PROFESSOR** of biological sciences for fall 1990. Candidates should have sufficient theoretical and research background in microbiology to establish an externally funded research program using a molecular biological approach and to teach undergraduate and graduate courses in microbiology. Send curriculum vitae summaries of current and proposed research and teaching interests, publications, and have three letters of reference sent to: **Dr. F. J. Kull, Department of Biological Sciences, SUNY, Binghamton, NY 13901,** by 1 December 1989. *The State University of New York at Binghamton is strongly committed to Affirmative Action. We offer access to services and recruit students and employees without regard to race, color, sex, religion, age, disability, marital status, sexual orientation or national origin.*

### MYCOLOGY OR PHYCOLOGY

The Department of Botany at the University of Wyoming (UW), with strengths in systematics, ecology, and physiology, invites applications for a tenure-track assistant professor position in mycology or phycology. The position involves teaching at the undergraduate and graduate levels, and developing a vigorous research program. A Ph.D. is required and postdoctoral experience is preferred. The appointment begins in August 1990. In addition to submitting a curriculum vitae, a statement of research and teaching interests, and graduate academic transcripts, qualified candidates should arrange to have three letters of reference sent by 15 December 1989 to: **Dr. G. K. Brown, Department of Botany, P.O. Box 3165, University Station, University of Wyoming, Laramie, WY 82071-3165.**

*UW is an Affirmative Action/Equal Opportunity Employer; women and minorities are encouraged to apply.*

**NEUROANATOMIST/EXPERIMENTAL NEUROPATHOLOGIST.** Independent research faculty position in the Neuroscience Program at the Maryland Psychiatric Research Center. Experience with modern neuroanatomical techniques required, interest in psychiatry disorders desirable. New EM facility and generous start-up funds provided. Please send curriculum vitae, a brief outline of research plans, and names of at least three references to: **Robert Schwarcz, Ph.D., Maryland Psychiatric Research Center, P.O. Box 21247, Baltimore, MD 21228.**

The Anatomy Department of the Medical College of Ohio has openings for **NEUROBIOLOGISTS** who are studying neural organization and/or development at cellular or molecular levels. Positions may be either tenured or tenure-track with teaching in either gross anatomy, microanatomy, or neurobiology. Applicants for assistant professorship should have the ability to establish an independent and funded research program. Applicants for more senior positions should have ongoing and funded programs. The Medical College of Ohio offers an excellent research environment and very competitive salaries and start-up funds. Faculty hired in the upcoming year will join a growing neuroscience group that will be expanded by subsequent recruitment. Forward your curriculum vitae and the names of three references to: **Faculty Search Committee, Department of Anatomy, Medical College of Ohio, P.O. Box 10008, Toledo, OH 43699.** Applications should be submitted by 1 December 1989. *Equal Opportunity Employer.*

### POSTDOCTORAL POSITION IN THE MOLECULAR BIOLOGY OF MEMBRANE PROTEINS

Postdoctoral position available immediately to study the structure, function and regulation of the plant vacuolar H<sup>+</sup>-ATPase. Experience in molecular biology and/or protein purification desirable. Send curriculum vitae with names and telephone numbers of three references by 15 November 1989 to: **Lincoln Taiz, Biology Department, University of California, Santa Cruz, CA 95064.** Telephone: 408-429-2036. Refer to job #T89-05.

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

## POSITIONS OPEN

### NEUROPHARMACOLOGY MOLECULAR BIOLOGY

The Department of Pharmacology of The Ohio State University College of Medicine invites applications for a tenure-track position at the assistant professor level. Candidates, Ph.D. and/or M.D., should have at least 2 years of postdoctoral experience and have demonstrated outstanding research and some teaching experience in neuropharmacology or related areas. We are particularly interested in candidates with a strong interest in mechanisms of signal transduction at the molecular level. Send curriculum vitae, copies of several recent publications, a brief statement of future goals, and the names and addresses of three references by 30 November 1989 to: **Dr. Norton H. Neff, Department of Pharmacology, The Ohio State University College of Medicine, 5196 Graves Hall, 333 West Tenth Avenue, Columbus, OH 43210.** *The Ohio State University is an Affirmative Action/Equal Opportunity Employer.*

**PHYSICAL CHEMIST.** Hamilton College is seeking a physical chemist for a tenure-track position beginning in the fall of 1990. All areas of research expertise will be considered, but preference will be given to an experimentalist; an interest in biophysical chemistry will be helpful. Applicants should have strong interest in both teaching and research at the undergraduate level; the department is reasonably well-equipped with modern instrumentation, including a new 300-MHz multinuclear NMR spectrometer and the college expects to extend start-up support to a new faculty member. Applicants should send a current curriculum vitae and transcripts, and arrange for three letters of recommendation to be sent by 10 January 1990 to: **Professor Robin B. Kinnel, Department of Chemistry, Hamilton College, Clinton, NY 13323.** *Hamilton College is an Equal Opportunity/Affirmative Action Employer, and women and minority candidates are encouraged to apply.*

### PLANT ECOLOGIST

The Department of Biological Sciences of the University of Wisconsin-Milwaukee invites applications for an anticipated tenure-track **ASSISTANT PROFESSOR** position. We are seeking a person using innovative approaches at the population or community level. Postdoctoral training desirable. The successful candidate will be expected to develop a strong extramurally funded research program. Teaching responsibilities in departmental introductory courses and advanced courses/seminars in area of specialization. Applicants should provide a curriculum vitae, reprints, a concise statement of research goals, and have three letters of reference sent by 15 December 1989 to: **Chair, Plant Ecologist Search Committee, Department of Biological Sciences, University of Wisconsin-Milwaukee, P.O. Box 413, Milwaukee, WI 53201.** *The University of Wisconsin-Milwaukee is an Affirmative Action/Equal Opportunity Employer.*

### PLANT ECOLOGIST

Search re-opened for a tenure-track assistant professor to join an active program in ecology and environmental biology. Research area open; wetlands ecologist preferred. Responsibilities include courses in ecology, botany, and the area of specialization, and maintaining an active research program involving graduate students. Ph.D. required; postdoctoral experience preferred. Available August 1990. Send curriculum vitae, unofficial transcripts, and names and telephone numbers of at least three references by 15 December 1989 to: **Dr. Gary Childers, Department of Biological Sciences, Southeastern Louisiana University, Box 814, Hammond, LA 70402.**

**POSTDOCTORAL POSITION—EGF ACTION:** to participate in studies aimed at elucidating the mechanism(s) of signaling between the EGF receptor and other proteins involved in cellular responses. A current emphasis is the reconstitution of EGF receptor into lipid bilayers and mechanism(s) of phosphorylation in signal transduction. Experience with protein purification and enzymology and some experience in recombinant DNA methodologies is desirable. Position available immediately or as late as 1 January 1990. Applicants with Ph.D. in biochemistry and molecular biology should send curriculum vitae and names of three references no later than 15 December 1989 to: **Dr. Tzipora Goldkorn, Co-Head, Receptor Biology, Sloan-Kettering Institute, 1275 York Avenue, New York, NY 10021.**

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately for a Ph.D. in physical chemistry/biochemistry to study the mechanism of electron transfer reactions of the membrane protein cytochrome P-450. Experience with enzyme kinetics and/or stopped-flow spectrometry helpful. Salary negotiable. Send curriculum vitae and three references to: **Dr. L. Waskell, M.D., Ph.D., VA Medical Center, University of California, San Francisco, 4150 Clement Street, San Francisco, CA 94121.** *Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL AND JUNIOR FACULTY** appointments to work in interdisciplinary group involved in molecular, cellular, and genetic aspects of lipid metabolism and atherosclerosis. Salary \$18,000 to \$30,000 (depending on qualifications). Send curriculum vitae and references to: **Roger Davis, Ph.D., Atherosclerosis Research Center, University of Colorado Health Sciences Center, Box B-158, 4200 East Ninth Avenue, Denver, CO 80262.** *UCHSC is an Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION:** Molecular and cellular factors affecting reovirus growth and transport in Kupffer cells/hepatocytes will be explored. *Candidate must be U.S. citizen.* Applicants to: **Don Rubin, M.D., Research Medicine (151F) VA Medical Center, University and Woodland Avenues, Philadelphia, PA 19104.** **Telephone: 215-823-6352.** *Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available immediately in molecular biology, studying evolutionary and pathophysiological aspects of the  $\alpha$  1-3 galactosyltransferase gene [see *Lancet* ii, 358 (1989)]. Experience in cDNA library screening, DNA sequencing, and use of PCR is required. Send curriculum vitae and names of three references to: **Dr. Uri Galili, Department of Laboratory Medicine, Box 0134, University of California, San Francisco, CA 94143.**

### SYLVESTER COMPREHENSIVE CANCER CENTER UNIVERSITY OF MIAMI SCHOOL OF MEDICINE POSTDOCTORATE ASSOCIATE

The Division of Cell Therapeutics is seeking an individual for the position of Postdoctoral Associate to study Drug Resistance in Human Solid Tumors. This 5-year project seeks to use immunological and cytometric methods for identification of resistant cells. Our laboratories are well equipped and provide an excellent interactive environment involving basic scientists and clinicians. Send curriculum vitae with names of three references to: **Awtar Ganju-Krishnan, Ph.D., Associate Director, Sylvester Comprehensive Cancer Center, University of Miami, P.O. Box 016960 (R-71), Miami, FL 33101.** *An Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available for structure/function studies of membrane transport proteins. Immediate projects concern in vitro mutagenesis of the mitochondrial phosphate transport protein in yeast and characterization of its active site(s) also with chemical probes. Individuals with training in molecular biology and/or (membrane) protein biochemistry are invited to send their curriculum vitae and names of references to: **Dr. Hartmut Wohlrab, Boston Biomedical Research Institute/Harvard Medical School, 20 Staniford Street, Boston, MA 02114.** *Equal Opportunity/Affirmative Action Employer.*

### POSTDOCTORAL POSITIONS

In the Department of Microbiology, University of Texas at Austin, Austin, Texas 78712. Topics:

- 1) Site-specific recombination: DNA-protein interactions and catalytic mechanism.
- 2) Photoregulation and developmental regulation of gene expression.

Experience in protein biochemistry and enzymology desirable. Apply to:

**Makkuni Jayaram**  
Department of Molecular Biology, MB-3  
Research Institute of Scripps Clinic  
10666 North Torrey Pines Road  
La Jolla, CA 92037  
Telephone: 619-554-8009

## POSITIONS OPEN

**POSTDOCTORAL POSITION**—Available immediately to study molecular mechanism of protein isoform switching during heart development. Research involves techniques in DNA cloning, protein expression, and functional analysis, as well as site-directed mutagenesis for structure-function study. Send curriculum vitae and names of three references to: **Dr. Jim J.-C. Lin, Department of Biology, University of Iowa, Iowa City, IA 52242.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available in atherosclerosis research program for a project involving studies of cholesterol metabolism in cultured cells. Candidates should have experience in biochemistry, cell biology, or cell physiology. Send curriculum vitae and names and addresses of three references to: **Jane M. Glick, Ph.D., Department of Physiology and Biochemistry, Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, PA 19129.** *An Equal Opportunity Employer.*

## POSITIONS OPEN

### COLUMBIA UNIVERSITY DEPARTMENT OF ANATOMY AND CELL BIOLOGY

**ASSOCIATE RESEARCH SCIENTIST and POSTDOCTORAL FELLOW** to participate in research on the genetic manipulation of second messenger systems in mammalian cells or in *Dictyostelium* by molecular techniques. Associate research scientist should have experience in molecular biology and/or signal transduction. Postdoctoral applicants should be trained in biochemistry, genetics, or cell biology. Send curriculum vitae, statement of research goals, and names of three professional references to: **Dr. Richard H. Kessin, Department of Anatomy and Cell Biology, College of Physicians and Surgeons of Columbia University, 630 West 168th Street, New York, NY 10032.** *Equal Opportunity/Affirmative Action Employer.*

### THE JOHN D. AND CATHERINE T. MACARTHUR FOUNDATION

The program seeks to broaden the scope of discussion in the field and thus encourages applicants from a variety of disciplines. Grantees have included scholars, journalists, policy analysts, and others interested in pursuing approaches which move beyond disciplinary boundaries and which are currently underfunded. Younger women and men and non-U.S. researchers are encouraged to apply.

# Research

# and Writing

# Grants for

Grants last up to eight  
een months. They range  
from \$10,000 to \$60,000 for an individual application,  
and up to \$120,000 for a two-person project.

# Individuals

For more information  
about the Research  
and Writing Grants, contact:

Research and Writing Grants

The John D. and Catherine T. MacArthur Foundation

Program on Peace and International Cooperation

140 South Dearborn Street

Chicago, Illinois 60603

Application Deadline: February 1, 1990

Program on  
Peace and  
International  
Cooperation

An open  
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for individuals who want  
to explore  
peace and  
cooperation  
issues in the  
context of  
economic,  
technological,  
ecological,  
and political  
change.

## POSITIONS OPEN

### BIOSENSOR DEVELOPMENT POSTDOCTORAL POSITION UNIVERSITY OF PITTSBURGH

Ph.D. in relevant areas of biochemistry or chemistry required. Develop novel device and chemistry for hybrid optical/electrochemical sensors for drugs of abuse. Experience in any of these areas would be helpful: biomolecule immobilization, immunoassay, immunosensors, microelectrodes, optical fibers, photochemistry. Successful research will lead to commercialization. POSITION AVAILABLE IMMEDIATELY; \$25,000 per year. Contact: Professor S. G. Weber, University of Pittsburgh, Pittsburgh, PA 15260. SWEBER@PITTVMS.

**A CANCER RESEARCH POSTDOCTORAL POSITION** is available for an individual interested in examining the role of ions in control of breast cancer cell proliferation. Studies will involve intracellular ion measurements, patch clamp methodology and ion channel cloning. U.S. citizenship or permanent residency is required. Salary commensurate with experience. Reply to: Dr. J. Strobl or Dr. J. Worley, Department of Pharmacology, West Virginia University, Morgantown, WV 26506. Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available immediately for research on design and construction of amplifiable RNA probes [*Nature* 339:401-402, (June 1989)]. Goal is to develop simple, yet sensitive, hybridization assays. Experience with DNA cloning desirable. Research will be carried out in a modern, well-equipped laboratory in Cuernavaca, Mexico. Work requires occasional visits to a collaborating laboratory in New York City. Knowledge of Spanish an asset, but not essential. Salary arrangements depend on qualifications. Send curriculum vitae and letter of interest, as well as names and telephone numbers of three references to: Dr. Paul M. Lizardi, Centro de Ingeniería Genética y Biotecnología, Apartado Postal 510-3, Cuernavaca 62270, Mexico.

## POSITIONS OPEN

**POSTDOCTORAL POSITION** is now available to study the cell and molecular biology of a recently identified class of fundamental erythrocyte membrane proteins related to the Rh antigens. Experience in biochemistry, cell biology, or molecular biology is needed. Please send curriculum vitae and names of three references to: Dr. Peter Agre, Departments of Medicine (Hematology) and Cell Biology/Anatomy, Basic Science Complex, Hunterian 103, Johns Hopkins School of Medicine, 725 North Wolfe Street, Baltimore, MD 21205.

**POSTDOCTORAL POSITION—Molecular Genetics of *Rhodospirillum rubrum* cytochrome *b<sub>5</sub>* complex.** A postdoctoral position is available to study by genetic approaches the structure and function of the cytochrome *b<sub>5</sub>* complex from this photosynthetic bacterium as a model system for higher organisms (Davidson and Daldal, *JMB* 195, 1-29; Daldal *et al.*, *EMBO J.*, #13 (1989). Send curriculum vitae and references to: Dr. F. Daldal, Department of Biology, University of Pennsylvania, Philadelphia, PA 19104.

### POSTDOCTORAL POSITION IN STABLE ISOTOPE RESEARCH LABORATORY CORNELL UNIVERSITY

An immediate opening exists in the Division of Nutritional Sciences at Cornell University. The position is in a new mass spectrometry laboratory for the development of novel instrumentation and methods in energy metabolism and the general use of stable isotope tracers in human applications. The ideal candidate will have a background in both instrumentation and physiology/biology, and will be interested in pursuing a career in the biomedical sciences. U.S. citizenship is required, salary is dependent on experience. The position is for 2 to 3 years and should be filled by 13 December 1989. Send curriculum vitae and names of two references and/or direct inquiries to: Professor J. T. Brenna, 116 Savage Hall, Cornell University, Ithaca, NY 14853. Telephone: 607-255-9182; FAX 607-255-1033; Bitnet JTBX @ CORNELL. An Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**POSTDOCTORAL POSITIONS** available immediately in the Department of Pharmacology, University of Pittsburgh, for research in these areas: signal transduction and anti-cancer drug resistance (Dr. Said Sebti), molecular oncology (Dr. Jill Siegfried), and pulmonary pharmacology (Dr. Bruce Pitt). Ph.D. in any relevant field acceptable. Salary commensurate with experience. Apply with curriculum vitae and names of two references to the individuals above at: Department of Pharmacology, University of Pittsburgh, 518 Scaife Hall, Pittsburgh, PA 15261.

**POSTDOCTORAL POSITION.** Available immediately to study the molecular genetics of cystic fibrosis. Studies will involve the biochemical and genetic characterization of primary and transformed human epithelial cells with emphasis on genetic complementation, gene regulation, and analysis of function. Background in mammalian molecular biology, recombinant DNA techniques, site specific mutagenesis, and/or drug metabolism desirable. Send curriculum vitae, brief description of research interests, and the names of three references to: Dr. Dieter Gruenert, Cardiovascular Research Institute, Box 0130, University of California Medical Center, San Francisco, CA 94143. Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL—VISITING LECTURER** to study the biochemistry and differentiation of the skeletal muscle outer membrane and myogenic lineage using monoclonal antibodies and recombinant DNA. Experience in cell biology, immunology, and molecular biology preferred. Opportunity to participate in teaching immunology to first-year medical students and to develop stable position with annual renewable appointments. Preferred starting date: 1 January 1990. Send curriculum vitae and names of three references to: Dr. Stephen Kaufman, University of Illinois, Departments of Microbiology and Cell Biology, 131 Burrill Hall, 407 South Goodwin Avenue, Urbana, IL 61801. Telephone: 217-333-3521.

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

## Biomolecular Discovery Scientist

Smith Kline and French Laboratories, a division of SmithKline Beecham, a worldwide leader in pharmaceutical research, has a challenging opportunity for a highly qualified Scientist to join its Biomolecular Discovery Department.

We are seeking a Scientist who will assist in the development and application of bioassays to be used in target-directed screening of natural products, especially in isolated enzyme systems. The successful candidate will also interact with natural product chemists and other researchers within R&D to facilitate the lead discovery process.

Qualifications of the appropriate candidate will include a Masters Degree or a Bachelors Degree with 5 years of experience in a life science, successful completion of formal coursework in Biochemistry and Cell Physiology, and some familiarity with computers and experience using data reduction software.

Any of the following experience is highly desirable: high-throughput screening, enzyme isolation and kinetics or measurement of ligand binding to its specific receptor *in vitro*.

Our new, state-of-the-art research facility is located in suburban Philadelphia, near Valley Forge. Smith Kline and French provides a stimulating and challenging work environment with opportunity for professional growth. We offer an attractive compensation and benefits package. For confidential consideration, we invite qualified candidates to submit their curriculum vitae to: N. Hasson, H0115, Smith Kline and French Research & Development, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an Equal Opportunity Employer, M/F/H/V.

# SK&F



## WOLFSON RESEARCH PROFESSORSHIP

The Wolfson Research Professorship, held by Professor Dorothy M.C. Hodgkin, O.M., from 1960 to 1977 and by Professor A.R. Fersht from 1978 to 1989, is now vacant and applications are invited by the Council of the Royal Society for appointment from 1 October 1990 or thereafter. The professorship will be for research in physics or chemistry at their interfaces with biology.

The appointment will be subject to the Society's General Regulations governing Royal Society Research Professorships. Candidates must be British citizens or citizens of independent Commonwealth countries and must hold the appointment in a university or other research institution in the United Kingdom.

### Salary and conditions of tenure

The salary will be on the prevailing professorial minimum for professors in United Kingdom universities plus one-third (making a current total of £33 044 p.a. with London Allowance £1650 p.a. where appropriate) and tenure is for five years in the first instance, potentially renewable thereafter. Superannuation benefits will be provided and there is provision for research expenses (currently £13 500 p.a.), support of a research assistant or technician and start-up expenses (up to £35 000).

### Method of application

Intending applicants should write for further details, which will be issued up to 4 December 1989, (there is no application form) to:

Mrs U.M.A. Tokle, The Royal Society,  
6 Carlton House Terrace, London, SW1Y 5AG.

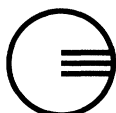
Closing date: 15 December 1989. No applications arriving after 4 p.m. on 15 December will be considered.

## SKIN PHYSIOLOGY

The Gillette Research Institute, a division of The Gillette Company, has an opportunity in our Physiology department for a qualified scientist to join our shaving and skin research programs.

We are looking for a biophysicist/biochemist with a Ph.D. in a related science plus two to five years of experience in biophysical measurements on skin or biochemistry. Experience in neurophysiology of skin is desirable.

Gillette Research Institute is located in a new facility, outside of Washington, D.C., in an area rich in government, private, and academic scientific laboratories. We offer an excellent compensation, benefits, and relocation package. For consideration, please send a confidential resume to:



Gillette Research Institute  
401 Professional Drive  
Gaithersburg, MD 20879

*Equal Opportunity Employer*

## DIRECTOR, RESEARCH CENTER NOTRE-DAME HOSPITAL OF MONTREAL

Notre-Dame Hospital, a University of Montreal teaching hospital, invites candidates for the position of Director of its Research Center. The mandate is for a term of four years and is renewable.

The Research Center is comprised of 31 fundamental researchers and 40 graduate students. Its grants and bursaries total more than \$5 million annually and it publishes more than 220 publications per year.

The Notre-Dame Hospital Research Center is in the process of expanding its facilities and construction of a new, 73,000 sq. ft. pavillon has just begun (or will shortly begin). The new pavillon will also house the Montreal Cancer Institute, which is affiliated with both the University of Montreal and Notre-Dame Hospital and which has an annual research budget of approximately \$4.5 million.

Notre-Dame Hospital is an ultra-specialized, university hospital center, which offers more than 30 specialized study programs. A number of clinical research projects are carried out within the majority of these programs.

Each year, 25,000 patients are admitted, 18,000 surgical procedures are performed and 250,000 individuals are seen in ambulatory, out-patient clinics. In this way, Notre-Dame Hospital is the most important hospital in the province of Quebec, with 450 staff physicians, 250 medical residents, and 1,000 beds.

The Director of the Research Center will have demonstrated excellent qualities of scientific leadership and training. He or she should hold the title of senior researcher within a university hospital, or the equivalent. Knowledge of both written and spoken French is essential.

Interested candidates should send their curriculum vitae before November 15, 1989, to the following address:

Monsieur Maurice St-Jacques  
Vice-rector of research and president of the Selection  
Committee,  
University of Montreal,  
5858 Cote-des-Neiges Road,  
Montreal, Quebec,  
H3S 1Z1

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NEW LAB SERVICE DEPT.  
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NEW YORK, N.Y. 10036**



## POSTDOCTORAL FELLOWSHIPS WOODS HOLE OCEANOGRAPHIC INSTITUTION

### Ocean Science and Engineering

Applications are invited from new or recent doctorates in science or engineering with interests in physical oceanography, meteorology, marine chemistry, marine geology and geophysics, biological oceanography, or oceanographic engineering. Recipients of awards are selected on a competitive basis, with primary emphasis placed on a research promise.

### Marine Policy and Ocean Management

Research fellowships are offered to individuals in the social sciences, law, the humanities, or natural sciences to apply their training to problems or issues that involve the use of the oceans. Presently research follows thematic areas such as Marine Science and Public Policy; Ocean Jurisdictions, Law of the Sea, and International Relations; Development and Management of Ocean Resources; and Areawide Planning and Management. Emphasis is placed on the economics of ocean space and on the role of science in governmental and industrial decision making. Topics of special current interest include marine biological diversity, the quality of marine habitats and marine reserves, and the impacts of sea-level change. Other research interests are also appropriate.

*Fellowships are rewarded for one year with a stipend of \$30,500 plus group health insurance and a modest research budget. Recipients are encouraged to pursue their own research interests independently or in association with resident staff. Completed applications must be received by January 15, 1990 for 1990-91 awards. Awards will be announced in March. Write for application forms to: Dean of Graduate Studies, P.O. Box 5, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts 02543*

Equal Opportunity/Affirmative Action Institution



## POSITIONS OPEN

**POSTDOCTORAL/RESEARCH ASSOCIATE POSITION** available to participate in a multidisciplinary study of neuropeptide actions within autonomic ganglia and on cardiac muscle. Ongoing work involves whole cell and patch clamp analysis of membrane ion currents, biochemical analysis of second messenger generation, and immunocytochemical and RIA identification of neuropeptides. Future experiments entail receptor isolation and expression. Appointment initially for two years with the possibility of a longer term commitment. Salary levels consistent with NIH guidelines, but are negotiable depending on prior experience. Preference given to individuals with demonstrated experience with electrophysiological and computer techniques. To apply, send curriculum vitae and names of two references to: **Dr. Rodney L. Parsons, Department of Anatomy and Neurobiology, College of Medicine, University of Vermont, Burlington, VT 05405.** An Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.

### PROFESSOR OF BIOCHEMISTRY AND CHAIR DEPARTMENT OF BIOCHEMISTRY SCHOOL OF MEDICINE EAST CAROLINA UNIVERSITY

Nominations and applications are invited for the position of professor and chairperson of the Department of Biochemistry at the East Carolina University School of Medicine. The department is responsible for the education of medical and graduate students and consists of nine tenured or tenured-track faculty. The department is well funded and well equipped. We are seeking candidates with an outstanding record of achievement in any field of biochemistry or molecular biology to provide strong leadership to an excellent department. Candidates should have a doctorate in biochemistry or a related discipline, experience in an academic medical center, and a record of scientific excellence. Candidates should submit a curriculum vitae and the names of addresses of three references to: **Dr. Wallace R. Wooles, Chairman, Biochemistry Search Committee, Department of Pharmacology, East Carolina University School of Medicine, Greenville, NC 27858.** Applications should be received by 1 February 1990. *East Carolina University is an Equal Opportunity Employer and encourages the application of women and minorities.*

**RADIATION BIOCHEMISTRY, HEALTH PHYSICS, RADIO CHEMISTRY, OR NUCLEAR MEDICINE.** A tenure track faculty position, rank open, is anticipated for fall of 1990. The position requires teaching in the undergraduate and graduate curricula (currently to the M.S. level), development of an active research program in a field that will complement existing faculty, and academic program development and management for the unique Nuclear Science Facility at San Jose State University. Deadline for receipt of all materials (application forms, transcripts, teaching interests, research interests, three letters of recommendation) is 22 December 1989. U.S. citizenship or permanent residence status is preferred. Send preliminary applications to: **Dean of Science, San Jose State University, San Jose, CA 95192-0099.** *SJSU is an Affirmative Action/Equal Opportunity Employer.*

### RADIATION SAFETY OFFICER LAWRENCE BERKELEY LABORATORY

The laboratory, a research facility affiliated with the University of California, seeks an individual to conduct safety assessments for particle accelerators, x-ray machines, electron microscopes, and radioisotope, develop quality assurance and control procedures, and conduct training programs. Formal training or experience in particle accelerator radiation safety and shielding as well as x-ray safety and/or radioisotope safety. Oral and written skills. Advanced degree in health physics or relevant physical science and certification by the American Board of Health Physics preferred. Salary is commensurate with qualifications. Excellent benefits package. Please send a résumé to: **Lawrence Berkeley Laboratory, Employment Office, Box A5196B, 1 Cyclotron Road, Berkeley, CA 94720.**

*Lawrence Berkeley Laboratory is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**POSTDOCTORAL/RESEARCH ASSOCIATE.** Position available at Duke University Medical Center to study the molecular biology of cellular transglutaminases. Candidates should have experience in molecular biology, cell biology, tissue culture, and protein biochemistry. Send résumé and names and addresses of three references to: **Dr. Charles S. Greenberg, Box 3934, Duke University Medical Center, Durham, NC 27710.** *Duke University is an Affirmative Action/Equal Opportunity Employer.*

**RESEARCH ASSOCIATE—NEW POSITION:** Ph.D. chemist needed to develop and utilize new optical devices in spectroscopic instrumentation. Areas of expertise required include colloid chemistry, analytical chemistry and spectroscopy with direct experience in Raman spectroscopy and FT-IR spectroscopy, polymer synthesis, electrooptics, electron transfer chemistry, and light scattering with an understanding of diffraction theory. Application deadline 30 November 1989. Salary: \$22,000 per year. Send applications and three letters of reference to: **Professor S. Asher, Department of Chemistry, University of Pittsburgh, Pittsburgh, PA 15260.** *The University of Pittsburgh is an Equal Opportunity/Affirmative Action Employer.*

**RESEARCH ASSOCIATE:** Use and maintain a picosecond laser system at ultraviolet and tunable infrared wavelengths. Study ultrafast energy transfer, photodissociation, and reaction kinetics in liquids by transient infrared spectroscopy. Experiments require nonlinear optics, molecular spectroscopy, chemical handling and computer experience. Collaboration with theoreticians on quantum chemistry, energy transfer, and molecular dynamics calculations. Require (i) a Ph.D. in physical chemistry, (ii) a Ph.D. thesis or postdoctoral research involved with inelastic collision phenomena, microscopic reaction mechanisms, and quantum chemistry, (iii) one graduate course in quantum electronics (including nonlinear optics and laser spectroscopic techniques), and (iv) any working knowledge of Fortran computer language. Salary, \$24,000 per year; 40 hours per week, 8:30 to 5:00. Send résumé and verification of requirements to: **Illinois Department of Employment Security, 401 South State Street, 3 South Chicago, IL 60605.** Attention: **Robert S. Felton, Ref. #V-IL-9495-F.** *An Employer paid ad.*

### RESEARCH ASSOCIATE

Brigham and Women's Hospital has an opening for a research associate to study electrophysiology of smooth muscle. Applicant should have experience with in vivo experimentation, chronic animal preparations, and basic physiological techniques. Experience with patch clamp technique welcome.

Candidates should have a Ph.D. in a related field and capacity for interdisciplinary research and growth. Please send résumé, letter of interest, and names of references to: **D. S. Sugarbaker, M.D., Department of Surgery, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115.**

**RESEARCH ASSOCIATE IN MOLECULAR GENETICS.** Requirements: Ph.D., 3 years of postdoctoral experience in molecular and microbial genetics. Primary responsibilities: teaching experimental techniques to graduate students and fellows and collaborative research. Salary commensurate with ability. Please send applications and curriculum vitae to: **Mildred Kahler, 502 PCTB, Johns Hopkins University School of Medicine, 725 North Wolfe Street, Baltimore, MD 21205.** *The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.*

**RESEARCH SPECIALIST III**—To develop mathematical models to investigate the suitability of encyrtid wasps as biological control agents of Lyme borreliosis. Applicant should have a Ph.D. and experience of mathematical modeling techniques applied to the study of population biology. Apply with curriculum vitae and three references to: **Dr. Gary Smith, New Bolton Center, University of Pennsylvania, 382 West Street Road, Kennett Square, PA 19348.** *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**RESEARCH COORDINATOR:** A temporary position is available at the Uplands Research Laboratory, operated by the Great Smoky Mountain National Park, to supervise and carry out research into the long-term effects of ozone on tree seedlings. A doctorate, with training in plant ecophysiology is preferred. Previous experience in air pollution research desirable, but not necessary. Position slated to start 1 January 1990. Salary in the mid-\$20's. If interested, send a résumé and two letters of reference, which must be received by 30 November 1989, to: **Dr. Howard Neufeld, Department of Biology, Appalachian State University, Boone, NC 28608.** Telephone: 704-262-3025. *The National Park Service and Appalachian State University are Equal Opportunity Employers.*

### THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL SENIOR EUKARYOTIC GENETICIST

The Department of Biology invites applications from outstanding eukaryotic geneticists for a senior faculty position. Generous space in a new building, salary, and set-up funds are available. The successful candidate will be expected to conduct a vigorous research program and participate in teaching. Applicants should send curriculum vitae and the names of four referees to: **Thomas D. Petes, Chair, Search Committee, Department of Biology, CB# 3280 Coker Hall, University of North Carolina, Chapel Hill, NC 27599-3280.** Priority will be given to applications received before 1 December 1989. Nominations are also welcome. *Applications from minority groups and women are strongly encouraged. The University of North Carolina at Chapel Hill is an Equal Opportunity/Affirmative Action Employer.*

**STAFF SCIENTIST:** Responsible for directing research program aimed at genetic transformation of maize. Designs and directs research to regenerate maize plants from protoplasts. Directs development and maintenance of maize callus and suspension cultures for use in protoplast experiments. Designs and directs cryopreservation program of plant cells and cultures maintained as source materials for experiments. Directs stable transformation and transient expression studies in maize and tobacco to test promoter/gene constructs. To this end, interacts with molecular biologists to assist in design of transformation vectors and supervised assays for gene products in transformed materials. Participates in writing of patents for new genetic engineering techniques and/or new crops produced by the research. Requires Ph.D. in botany, plant physiology or plant pathology and 5 years of experience in job or 5 years of experience with plant tissue culture, protoplast culture, and genetic engineering of plant cells. Experience must include culturing protoplasts, plant cell transformation, and cryopreservation of plant tissue cultures. Must have published refereed articles in professional journals in areas of development of novel protoplast culture and selection systems; direct gene transfer, including work with graminaceous cells, and assaying foreign gene expression in transformed plant cells. Salary, \$59,215 per year; 40 hours per week. JO #NC3090738. DOT Code 040.061-010. Apply to: **Job Service, 516 North Mangum Street, Durham, NC 27701** or nearest Job Service office.

### U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL RESEARCH SERVICE (ARS)

**Research Scientist Position, Poultry Research Laboratory, Georgetown, Delaware.** ARS is seeking a permanent physiologist/biochemist (poultry) to be part of a research team investigating biochemical and physiological mechanisms affecting growth and body composition. The research involves investigation of gene products and application of molecular biology techniques. Skills in molecular biology are required. Also, applicants should have skills in electrophoresis, and purification of nucleic acid and protein, and knowledge of biochemistry and physiology. Knowledge of avian biology and skill in statistical analysis are desired. Must be U.S. citizen. Salary range \$28,852 to \$44,957 per annum. For information on the research program and position, contact **Dr. Lee Cartwright at 302-856-0046.** For information on application procedures/forms, contact **Beverly Weber at 301-344-2756.** Applications in response to this advertisement must be marked 0N001 and received by 15 December 1989.

*USDA/ARS is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

## **Virologist**

### **National Institutes of Health**

The Genetics of Simple Eukaryotes Section, Laboratory of Biochemical Pharmacology, National Institute of Diabetes and Digestive and Kidney Diseases, seeks outstanding candidate with Ph.D. or M.D. with at least 3 years of postdoctoral training and experience to participate in a research program on yeast virology. Applicant should have research interest and preferably experience in utilizing *in vitro* replication, transcription and packaging systems to investigate the detailed mechanisms by which viruses of eukaryotes are reproduced. Applicants should be familiar with details of viral replication in a number of systems and should have a substantial record of publication of original work. Starting salary \$40,000 or may be negotiable commensurate with qualifications and experience. Interested candidates should submit curriculum vitae, several reprints, summary of research interests and names of three references to:

**Reed B. Wickner, M.D.**  
**National Institutes of Health**  
**Building 8, Room 207**  
**9000 Rockville Pike**  
**Bethesda, Maryland 20892**



**NIH IS AN EQUAL OPPORTUNITY EMPLOYER**

## **Henry R. Luce Professorship in Nations and the Global Environment**

A substantial five-year grant from the Henry Luce Foundation makes possible this senior-level position, to be filled by an individual committed to the interdisciplinary study of environmental issues, with particular emphasis on the relationship between science, public policy, and global needs. Candidates should have an ability to conceptualize environmental issues from a broad perspective, substantial experience in the analysis of public policy, and strong interest in stimulating cross-curricular thinking by students and faculty in a liberal-arts setting.

Nominations and applications will be considered until the position is filled. To ensure consideration, submit applications by January 15, 1990, to:

Charles Duke, Dean  
Luce Search Committee  
Grinnell College  
P.O. Box 805  
Grinnell, Iowa 50112-0810



Grinnell College is an equal-opportunity, affirmative-action employer and especially seeks women and minority candidates.

## **DEPARTMENT OF THE AIR FORCE**

### **SENIOR EXECUTIVE OPPORTUNITIES**

#### **AIR FORCE SYSTEMS COMMAND AIR FORCE OFFICE OF SCIENTIFIC RESEARCH BOLLING AIR FORCE BASE, WASHINGTON DC**

Air Force Systems Command (AFSC) is accepting applications for two positions in the Air Force Office of Scientific Research (AFOSR). AFOSR is charged with planning, managing, implementing and controlling the United States Air Force Defense Research Sciences Program in the technical areas of aerospace vehicles, electronics, geophysics, life sciences, materials, propulsion and power, and weaponry. These positions are in the Senior Executive Service (SES) with a salary range of \$68,000 to \$76,400.

#### **DIRECTOR OF AFOSR Announcement SES 89-08**

The Director of AFOSR is responsible for the success of the Air Force research program and will plan new programs to accomplish the mission; evaluate the progress of current programs; direct the internal and external research efforts to achieve objectives; and supervise the work of approximately 200 employees through subordinate supervisors.

#### **DIRECTOR OF LIFE SCIENCES Announcement SES 89-09**

The Director of Life Sciences formulates and manages the Air Force's basic research programs in the fields of biomedicine, neuroscience, experimental psychology and other sciences related to the acquisition, training, performance, and protection of personnel. The incumbent acts as the senior spokesperson for life sciences research in the Air Force.

**APPLICATION PROCEDURES:** Call the Senior Executive Management Office at (301) 981-3887 or AUTOVON 858-3887 for a copy of the announcement describing qualification requirements and for SF-171 (Application for Federal Employment). United States citizenship is required.

**APPLICATION MUST BE POSTMARKED BY 24 NOV 89.**



**AN EQUAL OPPORTUNITY EMPLOYER**

## POSITIONS OPEN

### SPACE PHYSICS/ UPPER ATMOSPHERIC PHYSICS UNIVERSITY OF COLORADO AT BOULDER

The Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado at Boulder invites applications from senior researchers to plan, direct, and perform research on problems of the global mechanical, electrical, and chemical response of the upper atmosphere to the energy deposited by precipitating energetic, charged particles and by Joule heating from electrical current flow. The appointment, as a CIRES Research Associate, will be for 1 year with the possibility of renewal, at a salary commensurate with qualifications and experience.

The work, in collaboration with scientists at the National Oceanic and Atmospheric Administration's Space Environment Laboratory in Boulder, Colorado, involves analysis of charged particle observations made by the TIROS/NOAA satellites since 1978. Of particular interest is the use of these observations to specify the energy and ionization inputs to the upper atmosphere and the response of the ionosphere and upper atmosphere to the perturbations. Work would also be done on the correlation and association between these observations (and derived parameters) and other observations from space and ground. The ultimate objective is to merge these observations with a variety of existing models, in order to create more sophisticated and relevant models of atmospheric behavior with varying geophysical and solar activity.

Applicants should have a Ph.D. or its equivalent in magnetospheric and/or auroral physics, ionospheric physics, or atmospheric physics plus a minimum of 5 years of experience. A strong background in computer processing and manipulation of large data sets would be useful. Interested parties should submit, by 2 January 1990, a letter describing current research interests, a complete résumé and publications list, reprints of two relevant publications, and three letters of recommendation from professional references to:

**Dr. Howard P. Hanson, Associate Director**  
Cooperative Institute for Research  
in Environmental Sciences  
Ref: RA/SP  
University of Colorado  
Boulder, CO 80309-0216

Technical information concerning this position may be obtained from **Dr. Ron Zwickl** at 303-497-3029.

*The University of Colorado has a strong institutional commitment to the principle of diversity. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including women, members of ethnic minorities, and disabled individuals.*

Beth Israel Hospital-Harvard Medical School solicits applications for a **STAFF RESEARCH POSITION** in the Department of Pathology in the field of developmental biology and cell differentiation. Candidates should be well-trained cell and molecular biologists with an M.D. or Ph.D. degree. They should have broad experience in cell culture and molecular biology, ideally including the application of these approaches to the analysis of the role of tyrosine kinases in cell-cell interactions. Evidence of substantial research productivity is required. The individual selected will need to obtain independent research funding. Harvard Medical School appointment at the level of instructor or assistant professor. Please send curriculum vitae and the names of three references to: **Dr. Stephen J. Galli, Department of Pathology, Beth Israel Hospital, 330 Brookline Avenue, Boston, MA 02215.** We are an Equal Opportunity Employer.

### SYSTEMATIC BIOLOGIST

The Department of Environmental, Population, and Organismic Biology (EPOB), University of Colorado, Boulder, seeks an individual for an assistant professor, tenure-track opening, with an active research program in any area of plant or fungal systematic biology. Teaching responsibilities will include an undergraduate course in plant systematics. Applications addressed to **Search Committee, EPOB, University of Colorado, Boulder, CO 80309-0334** should include curriculum vitae, statement of research and teaching interests, and names of three referees and must be received by 1 December 1989. Assistant professor level preferred, but candidates at all levels will be considered. *The University of Colorado is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**SENIOR FACULTY POSITION/MOLECULAR BIOLOGY.** Syracuse University has initiated a program of growth and development of a strong unit in molecular biology within the Department of Biology. Several stages of recruitment that will encompass both junior and senior faculty position are planned and new facilities, including 23,000 square feet of research space, are under development. Applications and nominations for a senior position are invited at this time. Candidates must have a vigorous research program supported by extramural funding and a strong record of accomplishments. Areas of specialization within molecular biology are unrestricted. The successful candidate will have substantial time available for research, but participation in the instruction of undergraduate and graduate students is expected. Curriculum vitae, including a statement of career and research goals, information on research support, and three references should be sent by 1 January 1990 to: **Dr. J. K. Bryan, Department of Biology, Syracuse University, 130 College Place, Syracuse, NY 13244-1220.** Affirmative Action/Equal Opportunity Employer.



### TECHNICAL SALES REPRESENTATIVE

Stratagene, a rapidly growing, innovative supplier of molecular biology research products is currently in search of qualified and experienced technical sales representatives. Immediate openings are available in the southeastern United States and northern California areas, and additional openings will become available in Texas, Pennsylvania, New Jersey, and the Washington, D.C., areas. These positions represent a unique opportunity for qualified individuals to participate in a growing technical sales organization. Candidates should have strong practical experience in molecular biology and a B.S. degree in molecular biology or related field. Prior sales experience is beneficial. Please forward résumé of qualifications to: **Kim Brown, Stratagene, 11099 North Torrey Pines Road, La Jolla, CA 92037.** Equal Opportunity/Affirmative Action Employer.

**TOXICOLOGIST/PUBLIC HEALTH SPECIALIST/INDUSTRIAL HYGIENIST—B.S., M.S., or Ph.D.** in related field. Young, rapidly growing environmental consulting firm seeks professional to join staff in Tallahassee. Excellent salary, benefits, and working environment. Send résumé to: **TERRA, Inc., 325 John Knox Road, Atrium Building, #201, Tallahassee, FL 32303.**

**VICE CHAIR AND PROFESSOR OF PHARMACOLOGY.** The Department of Pharmaceutical Sciences at Idaho State University, the state's designated lead institution for health sciences education and research, invites applications and nominations for the position of Vice Chair for Boise Programs. The vice chair will promote, develop, and supervise professional, graduate and research programs located at Boise VA Medical Center and coordinate all pharmacology faculty members of the department. Candidates must have a Ph.D. in pharmacology or a closely related discipline and a distinguished record of teaching, publications, and funded research. The salary is highly competitive with a substantial research start-up package. The position is open until filled. Nominations and applications (including a curriculum vitae and names of three references) should be sent to: **Chair, Search Committee, College of Pharmacy, Idaho State University, P.O. Box 8334, Pocatello, ID 83209.** ISU is an Equal Opportunity Employer.

**ZOOLOGIST.** Fort Lewis College Biology Department—tenure-track position to begin September 1990. Teaching load selected from General Biology, General Zoology, Vertebrate Comparative Anatomy, an upper-division course of choice, and a Freshman Composition Seminar. Must be dedicated to liberal arts education. For further information, contact: **Dr. Preston Somers, Biology Department, Fort Lewis College, Durango, CO 81301.** Closing date for receipt of materials is 17 November 1989. Affirmative Action/Equal Opportunity Employer.

## POSITIONS OPEN

### SEARCH CONTINUES: THE UNIVERSITY OF IOWA VICE PRESIDENT FOR RESEARCH

The Vice President for Research promotes and facilitates research and scholarship and fosters their excellence; strengthens relationships with public and private agencies that support research and other scholarly endeavors; advances the role of the University in economic development; develops research agreements; and formulates and implements policies regarding research, patents, copyrights, and intellectual property rights. The Vice President reports directly to the President.

The Vice President should have an established record of research accomplishment and the capacity to promote research and scholarship and foster their excellence in all areas of a comprehensive research university. Although administrative experience is a highly desirable qualification, it is not a prerequisite. Candidates must have the ability to communicate university policies relating to research to all of the University's constituencies, both internal and external. It is important that the Vice President have extensive experience and familiarity with funding agencies.

The Vice President is expected to have a Ph.D., or equivalent degree or achievement, and preferably also experience at a major research organization. The President and the Search Committee are particularly eager to identify qualified women and minority candidates.

Interested persons should apply as soon as possible. Nominations will be accepted until the position is filled. Screening will begin immediately. Please send nominations or applications to:

**Professor John F. Kennedy, Chair**  
Search Committee, Vice President for Research  
101 Jessup Hall  
The University of Iowa  
Iowa City, IA 52242

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

## PROGRAM

### BIOLOGICAL SCIENCES LECTURESHIPS THE UNIVERSITY OF CHICAGO

Yearlong positions starting autumn 1989 for recent Ph.D.'s; renewable for a second year. Positions are for half-time teaching in three quarters and postdoctoral research at other times. Salary: \$19,000. Two to three positions with research in any area and capable of teaching introductory lab courses in: molecular/cell biology, genetics, or general biology. One position teaching physiology and morphology; research skills with isolated perfused skin. By 5 January 1990 submit curriculum vitae, statement of research interests and teaching competence, and names of three references and of the prospective Chicago faculty research sponsor to: **Biological Sciences Collegiate Division, University of Chicago, 1116 East 59th Street, Chicago, IL 60637.** An Affirmative Action/Equal Opportunity Employer.

### DOCTORAL STUDIES IN BIOLOGY AND MOLECULAR BIOLOGY

The Department of Biological Sciences of the University of Maryland Baltimore County offers courses of study leading to Ph.D. degrees in Biological Sciences, Molecular and Cell Biology, and Marine Estuarine-Environmental Studies. The research interests of the 25 faculty of the Department include microbiology, molecular biology of prokaryotes and eukaryotes, plant biology, genetics, cell and developmental biology, physiology, ecology, and evolution. The Department is equipped with state-of-the-art facilities for modern research in biology, and is located in the most rapidly growing campus of the University of Maryland system. Graduate assistantships offered to incoming students include a stipend and remission of tuition. To obtain an application form and further information please write to:

**Dr. Paul S. Lovett**  
Chairman, Graduate Programs in Biological Sciences  
Department of Biological Sciences  
University of Maryland Baltimore County  
5401 Wilkens Avenue  
Baltimore, MD 21228

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## TRAINEESHIP

### PRE- AND POSTDOCTORAL TRAINEESHIPS IN THE EPIDEMIOLOGY OF AGING

The Department of Epidemiology at the Graduate School of Public Health of the University of Pittsburgh announces a new pre- and postdoctoral training program in the epidemiology of aging, sponsored by the National Institute of Aging.

Trainees will have the opportunity of working on major research programs and can obtain either a masters of public health degree or doctoral degree. Pre- and postdoctoral traineeships are now available. Areas of research interests include: dementia and Alzheimer's disease; osteoporosis; cardiovascular disease in the elderly; peripheral vascular disease; clinical trails; diabetes; cellular transport; depression; menopause; studies of sex-steroid hormones; sleep disorders; and chronic neurological diseases. Excellent opportunity for individuals with prior training in basic or clinical sciences, epidemiology, statistics, genetics, and behavioral sciences to be trained in aging related topics. Traineeships include stipends, tuition, and possibility for supplementation for work on various projects. Some opportunities for continued clinical activities and teaching are also possible.

Send résumés to: **Lewis H. Kuller, M.D., Dr.P.H., University of Pittsburgh, Graduate School of Public Health, Department of Epidemiology, 130 DeSoto Street, Pittsburgh, PA 15261. Telephone: 412-624-3054.**

*The University of Pittsburgh is an Equal Opportunity/Affirmative Action Educational Institution.*

## TRAINING PROGRAM

### PRE- AND POSTDOCTORAL TRAINING PROGRAM IN MICROBIOLOGY

Positions are available for pre- and postdoctoral trainees in Microbiology. This program is funded by a training grant and research grants from NIH as well as intramural stipends. Research areas include Bacterial Cell Surfaces (Drs. P. D. Rick, H. C. Wu); Bacterial Pathogenesis (Drs. R. K. Holmes, A. Maurelli, A. D. O'Brien); Molecular and Cellular Immunology (Drs. W. Gause, E. Metcalf, S. Vogel); Molecular Virology and Viral Pathogenesis (Drs. I. Hay, K. V. Holmes, F. Jenkins); and Protozoan Parasitology (Dr. S. Langreth). Address applications (curriculum vitae, three letters of reference, and transcripts of undergraduate or graduate school) to **UVPERS c/o Dr. Henry C. Wu, Department of Microbiology, Uniformed Services University of the Health Sciences, Bethesda, MD 20814-4799.**

## COURSE

**THE 1990 JAMES S. McDONNELL FOUNDATION SUMMER INSTITUTE IN COGNITIVE NEUROSCIENCE.** The third annual Summer Institute will be held at Dartmouth College, 2 July through 13 July 1990. The 2-week **COURSE** will examine how information about the brain bears on issues in cognitive science, and how approaches in cognitive science apply to neuroscience research. A distinguished international faculty will lecture on current topics in perception and language; laboratories and demonstrations will offer practical experience with cognitive neuropsychology experiments, connectionist/computational modeling, and neuroanatomy. At every stage, the relationship between cognitive issues and underlying neural circuits will be explored.

The Institute directors will be **Michael Gazzaniga, George A. Miller, Wolf Singer, and Gordon Shepherd.** The foundation is providing limited support for travel expenses and room/board. Applications are invited from beginning and established researchers and must be postmarked by 12 January 1990. For further information please write to:

**McDonnell Institute in Cognitive Neuroscience  
Michael S. Gazzaniga  
HB 7915-A  
Dartmouth Medical School  
Hanover, NH 03756**

## COURSES

**TOOLS FOR A NEW BIOLOGY—A** 1-week course focusing on an integrated, multidisciplinary approach to the development of procedures for the separation, detection, and microcharacterization of complex mixtures of proteins and nucleic acids. Includes the role of novel computer hardware/software in the analysis of biological data. Sponsored by the NSP Center for Biotechnology. Director: **Leroy Hood.** For information contact: **Sue Lewis, Caltech, Division of Biology, 147-75, Pasadena, CA 91125. Telephone: 818-356-8390 or Fax: 818-793-4627.**

### CAREER CHANGE OPPORTUNITY

This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain the Doctor of Optometry (O.D.) degree in two calendar years. Employment opportunities exist in private practice, industry, education, and research. Contact: **Dr. D. Chauncey, Program Director, Accelerated Program, The New England College of Optometry, Room S, 424 Beacon Street, Boston, MA 02115.**

## FELLOWSHIPS

### ALEXANDER WISNIEWSKI FELLOWSHIP IN PSYCHIATRY

We have an exciting position for a psychiatrist to pursue clinical research in the genetics of brain function. This postdoctoral fellowship in psychiatry is offered by the New York State Office of Mental Retardation and Developmental Disabilities in conjunction with the consortium of medical education in Developmental Disabilities, Institute for Basic Research in Staten Island and the Department of Psychiatry, SUNY Health Science Center at Brooklyn. The fellowship will include clinical aspects of developmental disabilities. Research will involve family studies of adults, their offspring, and relatives. Clinical assessment, genetic, pharmacological and brain mapping techniques will be utilized. This is a 2-year position with a highly competitive salary. If interested, please contact: **Dr. H. Begleiter, Department of Psychiatry, University Hospital of Brooklyn, SUNY Health Science Center, 445 Lenox Road, Box 1203, Brooklyn, NY 11203. Equal Opportunity/Affirmative Action Employer. DMC #C0299.**

**POSTDOCTORAL FELLOWSHIP** involving instrumentation and methods development related to increasing sensitivity of protein microsequencing. Background in biochemistry or protein chemistry preferred. Experience in protein sequencing, HPLC, and electrophoresis desirable. Send curriculum vitae and three letters of reference to: **Dr. Leroy Hood, California Institute of Technology, Division of Biology 147-75, Pasadena, CA 91125.**

**POSTDOCTORAL FELLOWSHIP—MOLECULAR GENETICS OF CANCER.** Studies on the molecular basis of tumorigenesis in the context of an autosomal dominant human genetic disease, von Recklinghausen neuro-fibromatosis. Studies will involve physical mapping of the disease gene using DNA and cell culture techniques. This research project is a component of the neuro-oncology program of the Massey Cancer Center, The Medical College of Virginia, Virginia Commonwealth University. Send curriculum vitae and letters of recommendation to: **Dr. Scott R. Diehl, MCV Box 710, Richmond, VA 23298.**

### POSTDOCTORAL FELLOWSHIP IN CLINICAL LABORATORY IMMUNOLOGY

Applications are invited for a 2-year fellowship in clinical laboratory immunology at North Carolina Memorial Hospital (NCMH) and the University of North Carolina (UNC). Fellowship provides residency-type training in laboratory immunology through laboratory experience, conferences, and research. Send curriculum vitae and three letters of reference before 1 January 1990 to: **Dr. James D. Folds, Director, Clinical Microbiology-Immunology Laboratories, CB# 7600, 1035PST, North Carolina Memorial Hospital, Chapel Hill, NC 27514. The UNC/NCMH is an Equal Opportunity/Affirmative Action Employer.**

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIP** is available focused on the cloning and biochemical characterization of key enzymes that modulate phospholipid synthesis and degradation. Candidates with a Ph.D. degree interested in applying contemporary techniques of molecular biology, protein purification, and antibody production to problems related to the regulation of lipid metabolism should submit their curriculum vitae, reprints, and names of three references to: **Dr. Charles O. Rock, Biochemistry Department, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, TN 38101. An Equal Opportunity/Affirmative Action Employer.**

### PREDOCTORAL FELLOWSHIPS PHARMACOLOGY AND MOLECULAR SCIENCES AND

### ANTI-CANCER DRUG DEVELOPMENT THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE

Graduate study leading to the Ph.D. degree is offered in (i) protein and carbohydrate structure/function, (ii) molecular biology and gene regulation, (iii) molecular parasitology and virology, (iv) biomedical mass spectrometry, (v) neuropharmacology, and (vi) design, synthesis, and testing of new drugs.

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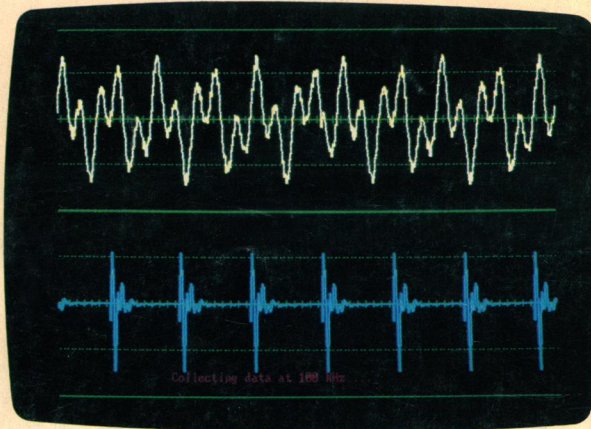
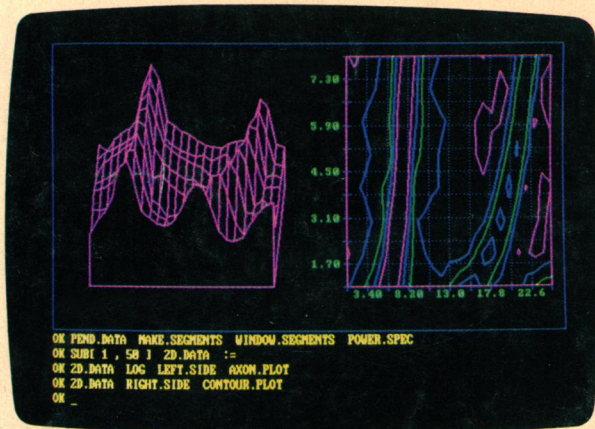
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