

participants; and its proceedings are beautifully produced—admirably organized, impeccably edited, and published in the very useful American Society for Microbiology format, with full titles of literature cited.

There is the right amount of historical background, including accounts of the discovery of *Escherichia coli* alkaline phosphatase in 1960 (A. Torriani-Gorini) and its early exploitation in gene-enzyme studies (F. G. Rothman), the unfolding of the complexity of the phosphate starvation global response in *E. coli* (more than 80 proteins are made at higher rates when cells are stressed by phosphate starvation), and the key role of alkaline phosphatase as the first periplasmic enzyme shown to be made as a cytoplasmic precursor with a signal sequence (by Hirushi Inouye and Jon Beckwith in 1977). The volume is dedicated to Inouye, who died in 1986, and Beckwith provides the introduction to the section on protein secretion. Each of the nine sections is introduced briefly and its content put into historical perspective.

The volume contains a satisfying balance of reports of new results in specific areas of phosphate metabolism and excellent short review papers that provide the context for future advances. There are sections on phosphate regulation in *E. coli* (Shinagawa *et al.* use nucleotide sequence analysis of the *pho* regulatory genes to move this system from formal genetics to direct models for molecular and physiological function) and in other bacteria and yeast; a section on protein secretion and the use of alkaline phosphatase in its study; a section on the molecular structure and function of *E. coli* alkaline phosphatase; sections on transport of inorganic and organic phosphates in *E. coli* and other microorganisms, including an excellent series of papers on the five systems for organic phosphate transport in *E. coli* and provocative general papers on anion exchange (Maloney *et al.*) and transport energetics (Konings and Poolman); and sections on the fascinating topic of the roles of inorganic polyphosphate and pyrophosphate in cellular energy metabolism. (Do you still believe that PP_i is hydrolyzed to make synthetic reactions energetically favorable? Read section 8.) The last section of the book is a collection of excellent, succinct reviews on global regulatory systems in enteric bacteria that provide possible parallels for understanding the regulation of phosphate metabolism. There are papers on carbon metabolism, nitrogen assimilation, stable RNA transcription, alarmones, and DNA damage control, and there is a characteristically provocative and uncategorizable contribution from Arthur Koch, "Why *Escherichia coli* should be renamed *Escherichia ilei*."

The title of this volume includes "in Microorganisms" honestly. Although the student of *E. coli* will perhaps find the most to interest him or her (30 of the 47 full papers), there are at least seven papers on a variety of nonenteric bacteria, six on yeast systems, one concerned with a protozoan—and one on plants. Phosphate is an essential nutrient, and because much of it is tied up in insoluble salts it is often limiting. Since mechanisms for assuring a supply of phosphate are important for every organism, this volume should be of high interest to all cell biologists. Moreover, the phosphate starvation response in enteric bacteria is another paradigm of a vital global stress response and will guide the thinking of cell biologists studying stress in the same way that bacterial heat-shock and DNA damage responses have.

R. T. VINOPAL

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Reprints of Books Previously Reviewed

The Beginnings of the Nobel Institution. The Science Prizes, 1901–1915. Elisabeth Crawford. Cambridge University Press, New York, and Editions de la Maison des Sciences de l'Homme, Paris, 1987. Paper, \$16.95. *Reviewed* 228, 841 (1985).

Spinors and Space-Time. Vol. 1, Two-Spinor Calculus and Relativistic Fields. R. Penrose and W. Rindler. Cambridge University Press, New York, 1987. Paper, \$29.95. *Reviewed* 228, 1422 (1985).

The Toltecs. Until the Fall of Tula. Nigel Davies. University of Oklahoma Press, Norman, OK, 1987. Paper, \$16.95. *Reviewed* 201, 1006 (1978).

Books Received

Auks. An Ornithologist's Guide. Ron Freethy. Facts on File, New York, 1987. 208 pp., illus. \$24.95.

Birding Around the World. A Guide to Observing Birds Everywhere You Travel. Aileen R. Lotz. Dodd, Mead, New York, 1987. xvi, 266 pp., illus. \$18.95; paper, \$10.95.

A Catalogue of Southern Peculiar Galaxies and Associations. Two volumes. Vol. 1, Positions and Descriptions. vi, 208 pp. Vol. 2, Selected Photographs. Various pages. \$125.

Changing Conceptions of Conspiracy. Carl F. Graumann and Serge Moscovici, Eds. Springer-Verlag, New York, 1987. xvi, 264 pp., illus. \$36.50. Springer Series in Social Psychology.

Chondrichthyes II. Mesozoic and Cenozoic Elasmobranchii. Henri Cappetta. Fischer, Stuttgart, 1987 (U.S. distributor, VCH, New York). iv, 193 pp., illus. \$150. Handbook of Paleichthyology, vol. 3B.

CODATA Thermodynamic Tables. Selections for Some Compounds of Calcium and Related Mixtures. D. Garvin, V. B. Parker, and H. J. White, Jr., Eds. Hemisphere (Harper and Row), New York, 1987. xx, 356 pp. \$69.95. CODATA Series on Thermodynamic Properties.

Escherichia coli and Salmonella typhimurium. Cellular and Molecular Biology. Frederick C. Neidhardt *et al.*, Eds. American Society for Microbiology, Washington, D.C., 1987. Two volumes. xxvi, 1654 pp., illus. + index. \$85; paper, \$75; to ASM members, \$61; paper, \$51.

Evaluation and Accountability in Clinical Training. Barry A. Edelstein and Ellen S. Berler. Plenum, New York, 1987. xxvi 374 pp. \$45. Fourteen papers having to do with standards for clinical psych.

The Fourth World. The Heritage of the Arctic and its Destruction. Sam Hall, Knopf, New York, 1987. xiv, 240 pp., illus. \$17.95.

Gas Chromatography. John Willett. Wiley, New York, 1987. xviii, 253 pp., illus. Paper, \$19.95. Analytical Chemistry by Open Learning.

Geohistory. Global Evolution of the Earth. Minoru Ozima. Springer-Verlag, New York, 1987. viii, 165 pp., illus. Paper, \$26.50. Translated from the Japanese by Judy Wakabayashi.

Good Farmers. Traditional Agricultural Resource Management in Mexico and Central America. Gene C. Wilken. University of California Press, Berkeley, CA, 1987. x, 302 pp., illus. \$45.

Information Systems Education. Recommendations and Implementation. Richard A. Buckingham *et al.*, Eds. Published for the British Computer Society by Cambridge University Press, New York, 1987. x, 256 pp., illus. Paper, \$39.50. British Computer Society Monographs in Informatics.

Interstellar Magnetic Fields. Observation and Theory. R. Beck and R. Grave, Eds. Springer-Verlag, New York, 1987. xii, 273 pp., illus. \$45.50. From a workshop, Tegernsee, F.R.G., Sept. 1986.

Introduction to Nuclear Power. John G. Collier and Geoffrey F. Hewitt. Hemisphere (Harper and Row), New York, 1987. xiv, 231 pp., illus. \$49.95.

Introduction to Plant Population Ecology. Jonathan W. Silvertown. 2nd ed. Longman Scientific, Harlow, U.K., and Wiley, New York, 1987. xii, 229 pp., illus. Paper, \$19.95.

An Introduction to the Historiography of Science. Helge Kragh. Cambridge University Press, New York, 1987. viii, 235 pp., \$32.50.

Inverse Problem Theory. Methods for Data Fitting and Model Parameter Estimation. Albert Tarantola. Elsevier, New York, 1987. xvi, 613 pp., illus. \$80.

Lehrbuch der theoretischen Physik. Vol. 2, Klassische Feldtheorie. L. D. Landau and E. M. Lifschitz. Akademie-Verlag, Berlin, D.D.R., 1987. xiv, 481 pp., illus. DM 26. Translated from the Russian edition (Moscow, 1972).

Measure Theory and Integration. M. M. Rao. Wiley-Interscience, New York, 1987. xiv, 540 pp. \$59.95. Pure and Applied Mathematics.

Mechanisms of Inorganic Reactions. Dimitris Katakis and Gilbert Gordon. Wiley-Interscience, New York, 1987. xxiv, 384 pp., illus. \$39.95.

Microbiological Applications of High-Performance Liquid Chromatography. D. B. Brucker. Cambridge University Press, New York, 1987. xii, 354 pp., illus. \$59.50.

The Microbiology of Terrestrial Ecosystems. B. N. Richards. Longman Scientific, Harlow, U.K., and Wiley, New York, 1987. xvi, 399 pp., illus. Paper, \$44.95.

Molecular Approaches to Developmental Biology. Richard A. Firtel and Eric H. Davidson, Eds. Liss, New York, 1987. xxiv, 695 pp., illus. \$126. UCLA Symposia on Molecular and Cellular Biology, vol. 41. From a symposium, Keystone, CO, March–April 1986.

Molecular Basis of Virus Disease. W. C. Russell and J. W. Almond, Eds. Cambridge University Press, New York, 1987. x, 344 pp., illus. \$69.50. Symposia of the Society for General Microbiology, vol. 40. From a symposium, University of St. Andrews, U.K., April 1987.

New Directions in the Philosophy of Mathematics. Thomas Tymoczko, Ed. Birkhäuser Boston, Cambridge, MA, 1986. xviii, 323 pp., illus. \$57.50.

Organogenesis of the Kidney. Lauri Saxén. Cambridge University Press, New York, 1987. viii, 173 pp., illus. \$42.50. Developmental and Cell Biology Series.

Origins of Igneous Layering. Ian Parsons, Ed. Reidel, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). xxiv, 666 pp., illus. \$124. NATO Advanced Science Institutes Series C, vol. 196. From a workshop, Narsarsuaq, South Greenland, Aug. 1985.

Palaeo-Oncology. The Antiquity of Cancer. Spyros Retsas, Ed. Farrand, London, 1986. 58 pp., illus. £9.50. Based on a symposium, Rhodes, Greece, Oct. 1984.

The Papovaviridae. Vol. 2, The Papillomaviruses. Norman P. Salzman and Peter M. Howley, Eds. Plenum, New York, 1987. xvi, 392 pp., illus. \$65. The Viruses.

Pathophysiological Aspects of Sickle Cell Vaso-occlusion. Ronald L. Nagel, Ed. Liss, New York, 1987. xxii, 465 pp., illus. \$85. Progress in Clinical and Biological Research, vol. 240. From a symposium, Tarrytown, NY, April–May 1986.

Perspectives in Turbulence Studies. H. U. Meier and P. Bradshaw, Eds. Springer-Verlag, New York, 1987. x, 503 pp., illus. \$71.50. From a symposium, Göttingen, F.R.G., May 1987.

Phonons. Theory and Experiments III. Peter Bruesch. Springer-Verlag, New York, 1987. xii, 249 pp., illus. \$49. Springer Series in Solid State Sciences, 66.

Phospholipid Bilayers. Physical Principles and Models. Gregor Cevc and Derek Marsh. Wiley-Interscience, New York, 1987. xviii, 442 pp., illus. \$79.95. Cell Biology, vol. 5.

Physical Processes in Comets, Stars and Active Galaxies. W. Hillebrandt, E. Meyer-Hofmeister, and H.-C. Thomas, Eds. Springer-Verlag, New York, 1987. viii, 193 pp., illus. \$41.50. From a workshop, Tegernsee, F.R.G., May 1986.

Plant and Planet. Anthony Huxley. 3rd ed. Penguin, New York, 1987. 480 pp., illus. Paper, \$6.95.

Proceedings of Groups—St Andrews 1985. E. F. Robertson and C. M. Campbell, Eds. Cambridge University Press, New York, 1987. x, 358 pp. Paper, \$39.50. London Mathematical Society Lecture Note Series, 121. From a conference, St. Andrews, Scotland, July–Aug. 1985.

Proceedings of the Fifth International Symposium on Trichoptera. (Lyon, France, July 1986.) Michel Bournaud and Henri Tachet, Eds. Junk, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). xxiv, 397 pp., illus. \$119.50. Series Entomologica, vol. 39.

Rationality. The Critical View. Joseph Agassi and Ian Charles Jarvie, Eds. Nijhoff, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). xi, 477 pp. \$89.50. Nijhoff International Philosophy Series, 23.

Reliability of Instrumentation Systems for Safeguarding and Control. J. P. Jansen and L. Boullart, Eds. Published for the International Federation of Automatic Control by Pergamon, New York, 1987. viii, 179 pp., illus. \$55. From a workshop, The Hague, May 1986.

Runes. R. I. Page. University of California Press, Berkeley, CA, and British Museum, London, 1987. 64 pp., illus. Paper, \$6.95. Reading the Past, vol. 4.

Solving Problems in Applied Thermodynamics and Energy Conversion. G. J. Sharpe. Longman Scientific, Harlow, U.K., and Wiley, New York, 1987. xii, 216 pp., illus. Paper, \$19.95. Solving Problems Series.

ANNOUNCING A CONFERENCE ON:

RISK ASSESSMENT IN AGRICULTURAL BIOTECHNOLOGY

July 31–August 4, 1988

UNIVERSITY OF CALIFORNIA, DAVIS
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The conference will emphasize scientific principles applicable to assessing the risks of products of biotechnology. Among the topics to be discussed will be:

Developing applications of biotechnology in agriculture; Metabolic, genetic, and ecosystem limitations to spread and survival of organisms; Types of risks relevant to biotechnology; Development of experimental protocols for monitoring organisms; Quantification of impact on agroecosystems; Current and future directions.

The conference will include both invited speakers and contributed posters. For further information and registration brochure contact, after March 1, 1988: **Donna Hyatt, Dean's Office, College of A&ES, University of California, Davis, CA 95616, (916) 752-9485.**

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Washington, DC 20005

POSITIONS WANTED

Biochemist, B.S. 1983. Experience in various biochemical techniques including tissue culture, liver cell separation, nucleic-acid hybridization, and enzymatic measurements. Published work and teaching experience. Prefers west coast of U.S. location, seeking position as research assistant. Box 12, SCIENCE.

Director of major industrial toxicology laboratory/department seeks challenging position. Ph.D. toxicologist with broad experience in safety assessment, currently managing staff of 200+, responsible for highly productive research and testing programs. Extensive experience in negotiating with federal and state regulatory agencies. Effective interaction with senior corporate management. Box 13, SCIENCE.

Law/Life Science. Reed College immunology graduate. Five years of clinical research experience. Member of the Oregon Bar seeks position combining legal and life science challenges. Box 10, SCIENCE.

POSITIONS WANTED

Geochemist, Ph.D. Young vigorous research associate seeks research industrial/academic position. Seven years of experience in radioisotope oceanography and sedimentology (U, Th series, ⁷Be, ¹⁴C) in universities and 1.5 years in atmospheric chemistry in health research laboratory. Familiar with nuclear instrumentation, GC, ratio-MS, computers, separation chemistry for trace elements and gases from geological samples. Box 14, SCIENCE.

Nuclear Medicine Physician, Microbiologist, M.D., Ph.D., A.B.N.M. (eligible). University-trained, available 1 July 1988. Academic, industrial, or clinical opportunities considered. Box 11, SCIENCE.

A **Progressive Research** position wanted to do research on the redox nature of membrane depolarization-hyperpolarization by: Dr. Ghouri, Consulting Scientist and General Tutor, 509 Connie Lange, Manchester, MO 63011. Telephone: 314-394-0589 (evenings).

POSITIONS OPEN

ACADEMIC POSITION IN MEMBRANE BIOLOGY

Department of Physiology seeks applications for a tenure-track faculty position, in assistant professor working in membrane biology. The Department tries to maintain a good environment for serious research.

Please send a statement of your research plans and dreams, curriculum vitae, and the names of a few scientists familiar with you and your work, to: **R.S. Eisenberg, Chairman, Department of Physiology, Rush Medical College, 1750 West Harrison, Chicago, IL 60612.**

ACADEMIC APPOINTMENT to a named professorship in the Department of Ophthalmology with joint appointment in an appropriate basic science department. Some research support provided. Strong basic interest in pursuing aspects of physiology, pharmacology or biochemistry of vision is essential. Candidates should have excellent basic science training and experience but need not have prior training in vision research, and should not currently be located in a Department of Ophthalmology. Publications and extramural funding vital. Rank, at assistant through full professor, to be assigned based upon experience, etc. Please send curriculum vitae, five representative reprints, statement of research interests, and names of three references to: **Dr. Keith Green, Department of Ophthalmology, Medical College of Georgia, Augusta, GA 30912.**

Equal Opportunity/Affirmative Action Employer.

ADJUNCT ASSISTANT PROFESSOR OF HISTOCOMPATIBILITY AND TRANSPLANTATION IMMUNOLOGY DEPARTMENT OF SURGERY, UCLA

Ph.D. or M.D. to conduct research in clinical transplantation, histocompatibility and transplantation immunology. Position includes pre- and post-transplant assessment of immune responsiveness. Familiarity with flow cytometry, renal transplantation and histocompatibility preferred. Research productivity in immunology evidenced by publications essential. Experience in teaching students or research fellows required. Demonstrated experience in biochemical, cellular and serological techniques. Annual salary range: Assistant \$36,600 to \$45,700. Please send inquiries and curriculum vitae to:

Dr. Paul I. Terasaki
UCLA Tissue Typing Laboratory
1000 Veteran Avenue
Los Angeles, CA 90024

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ASSISTANT PROFESSOR/ VETERINARY SCIENCE

The advertisement in the 1 January 1988 issue of *Science* for this position at the University of Alaska Fairbanks included the following statement: "Board certification or eligibility in laboratory animal science or other specialty fields." Please note that this is a **preferred**, not a required, qualification. Please see that advertisement for other details.

POSITIONS OPEN

ANATOMIST—UNIVERSITY OF CALIFORNIA, SAN DIEGO VISITING PROFESSOR position open to teach gross anatomy at the UCSD School of Medicine, Department of Surgery, Anatomy Division. Qualifications include: Ph.D. in anatomy or M.D. with equivalent training; Professor-level experience in teaching medical students gross anatomy with a strong clinical orientation; Established expertise as a teacher in the university setting; Experience and ability in administration within an academic setting. Four-month appointment (September through December 1988). Salary dependent on qualifications. Closing date: 1 April 1988. Successful candidate may be reappointed in future years. Send curriculum vitae and names of three academic references to: **Nicholas A. Halasz, M.D.; Department of Surgery, 225 Dickinson Street, San Diego, CA 92103.**

ANATOMIST ASSISTANT PROFESSOR DEPARTMENT OF HUMAN ANATOMY AND PHYSIOLOGY

The Fairleigh S. Dickinson, Jr., College of Dental Medicine, located on the Teaneck-Hackensack Campus of tri-campus Fairleigh Dickinson University, has a full-time, tenure-track position available for an assistant professor in the Department of Human Anatomy and Physiology. Responsibilities include teaching, research and service in the dental and graduate programs.

Qualifications: Ph.D. in Human Anatomy (D.D.S.; D.M.D.; or M.D.); teaching experience in gross anatomy, neuroanatomy, histology, and embryology.

Submit résumé and letter of application by 19 February to: **Fairleigh Dickinson University, University Employment Office, 1000 River Road, Teaneck, NJ 07666.**

Women and minorities are encouraged to apply. FDU is an Equal Opportunity/Affirmative Action Employer.

The Yale University Department of Neurology seeks an **ASSISTANT PROFESSOR** to conduct independent research in magnetic resonance spectroscopy (MRS) of cerebral metabolism in vivo, with the goal of obtaining new basic information about neurochemistry by application of new MRS methods. Experience with ^{31}P , ^{13}C and ^1H spectroscopy at the doctoral level, and knowledge of neurochemistry are essential, and a record of publication in these areas is highly desirable. Because the position is intended to promote basic research, neither clinical training nor experience with specific disease-related problems is necessary. *Yale University is an Affirmative Action/Equal Opportunity Employer.* Persons interested in the position should send curriculum vitae, bibliography, relevant reprints, and the names of two professional references to: **Professor James W. Prichard, Yale Medical School, 333 Cedar Street, New Haven, CT 06510** by 1 March 1988.

ASSISTANT PROFESSOR MOLECULAR VIROLOGY

The Departments of Ophthalmology and Virology of Baylor College of Medicine seek an innovative scientist to develop an independent research program on herpes virus infections. Responsibilities also include establishing and coordinating a diagnostic ocular virology laboratory. Applicants for this tenure-track position at the assistant professor level should have a Ph.D. with at least 2 years of productive postdoctoral experience in virology research. Salary is commensurate with experience. Negotiable starting date. Send curriculum vitae, names of at least three references, and a statement of research interests to: **Dr. K. R. Wilhelmus, Chairperson—Search Committee for Molecular Virologist Position, Department of Ophthalmology, Cullen Eye Institute, Baylor College of Medicine, One Baylor Plaza (NC200), Houston, TX 77030.** *Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE PROFESSOR. Full-time, tenure-track faculty position available 1 July 1988 in the Department of Anatomy. Position requires Ph.D. Responsibilities include teaching histology to undergraduate and graduate dental students, and directing graduate student theses. Record of research and research funding desirable. Salary and academic rank commensurate with experience. *Equal Opportunity/Affirmative Action Employer.* Send curriculum vitae to: **Dr. Joseph M. Gwogiel, Chairman, Department of Anatomy, School of Dentistry, Loyola University of Chicago, 2160 South First Avenue, Maywood, IL 60153.**

POSITIONS OPEN

ASSISTANT PROFESSOR OF PHARMACOLOGY/TOXICOLOGY

Tenure-track faculty positions are available in the Department of Pharmacology and Toxicology at the Medical College of Georgia for individuals with strong promise for research and teaching in modern pharmacology or toxicology. Applicant should have a Ph.D. or M.D. degree, significant postdoctoral research accomplishments, and the ability to respond to new challenges. Current strengths of our department are in the cardiovascular and neuroscience areas. Appointees are expected to establish a strong research program and effectively educate medical and graduate students. Please send curriculum vitae, bibliography, summary of professional goals, and names of three references to: **R. W. Caldwell, Department of Pharmacology and Toxicology, Medical College of Georgia, Augusta, GA 30912.** *Equal Opportunity Employer/Affirmative Action Program.*

ASSISTANT/ASSOCIATE PROFESSOR

(tenure-track), Department of Medicine, Stanford. The Division of Oncology of Stanford University is searching for a full-time faculty member for its fully integrated program at the Palo Alto Veterans Administration Medical Center. Candidates should be fully qualified in medical oncology, and have demonstrated or have the potential for an independent clinical research program relevant to oncology. Excellent support and facilities are available. This tenure-line appointment will be at the assistant or associate professor level. Send résumé, including bibliography, and summary of research goals to: **Frank M. Torti, M.D., Associate Professor of Medicine, Department of Medicine (III), Palo Alto Veterans Administration Medical Center, Palo Alto, CA 94304.** *Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates.*

SCIENCE WORLD BRITISH COLUMBIA ASSOCIATE DIRECTOR SCIENCE

The A.S.T.C. Science World Society, a private non-profit organization, is converting the Expo Centre into a 105,000-square-foot world class interactive science centre.

A scientist educator is sought to ensure the quality and accuracy of all aspects of the centre's scientific content, displays and audio-visual presentations. This person will report to the managing director, work with a team of experienced operations, design and marketing personnel and coordinate the inputs of a number of scientist consultants in the design program and be the centre's representative in the scientific community.

Applicants should have a Ph.D. degree in a major scientific discipline and experience as an educator at public school and/or college levels. Experience as a science director in a science centre or a museum setting would be an advantage.

Please reply in writing stating availability and salary expectations to:

**The A.S.T.C. Science World Society
600 Granville Street
Vancouver, B.C.
V6C 1Y9**

**Attention: Mr. N. W. Fletcher, P. Eng.
Managing Director**

ASSOCIATE ENVIRONMENTAL HAZARDS SCIENTIST

The California Department of Food and Agriculture will hold a competitive exam for positions in the Environmental Monitoring and Pest Management Branch (Sacramento office). Requires M.S. and 2 years of research experience or a Ph.D. Starting salary: \$32,400. Exam final filing date: 4 March 1988. Excellent benefits. Areas of expertise: analytical chemistry, statistics, mathematics/modeling, computer science, soil science, microbiology/statistics, planning/implementation. For an application call/write: **John Sanders or Kathy Brunetti, California Department of Food and Agriculture, 1220 North Street A-149, Sacramento, CA 95814.** Telephone: 916-324-8916 (leave name and address).

POSITIONS OPEN



INSTITUTE OF CHEMICAL TOXICOLOGY WAYNE STATE UNIVERSITY

Wayne State University is pleased to announce the development of a new institute dedicated to research in toxicology. The Institute of Chemical Toxicology occupies newly renovated laboratory space consisting of 16,000 square feet within the Metropolitan Center for High Technology and features modern research and support facilities. Applications are invited for tenure-track faculty positions in the ranks of **ASSISTANT PROFESSOR, ASSOCIATE PROFESSOR, and PROFESSOR** in the areas of molecular, respiratory, and heavy metal toxicology. Emphasis will be accorded research which utilizes modern molecular and cellular approaches in the investigation of mechanism(s) of xenobiotic-mediated toxicity. Although initial emphasis is directed toward the aforementioned areas of research, applications from outstanding candidates in other areas of contemporary toxicology will be considered. Candidates should have an M.D. or Ph.D. degree, at least 2 years of relevant postdoctoral research experience, demonstrated productivity and be capable of conducting independent research and securing extramural support. Salary and rank commensurate with qualifications.

Curriculum vitae and three letters of reference should be sent by 31 March 1988 to:

**Dr. Raymond F. Novak
Chairman, Search Committee
Institute of Chemical Toxicology
Wayne State University
1072 Mackenzie Hall
Detroit, MI 48202**

Wayne State University is an Equal Opportunity/Affirmative Action Employer.

New York University Department of Chemistry invites applications for a tenure-track position in any field of organic chemistry at either the **ASSISTANT OR ASSOCIATE PROFESSOR** level, to begin in the fall of 1988, pending final administration approval. Applicants should have a major commitment to conducting a vigorous and innovative research program. The successful candidate will be expected to be able to teach effectively at both the graduate and undergraduate levels. Applicants should submit curriculum vitae, with a list of publications, a summary of past research accomplishments, and an outline of proposed research interests, and should arrange three letters of reference to be sent, by 16 February 1988 to be assured of full consideration, to: **NYU Faculty of Arts and Science, Department of Chemistry, 4 Washington Place, 5th Floor, New York, NY 10003.** Attention: **Professor Alvin I. Kossak, Chair, Organic Search Committee.** *NYU is an Equal Opportunity/Affirmative Action Employer.*

THE WHITEHEAD INSTITUTE FOR BIOMEDICAL RESEARCH AND THE DEPARTMENT OF BIOLOGY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY ASSISTANT OR ASSOCIATE PROFESSORS

Candidates are sought with significant experience in the field of vertebrate developmental biology utilizing a combination of classical, genetic and molecular approaches. Special attention will be given to applicants who develop research programs which focus on cell-cell interaction, cell migration, cell commitment and cell differentiation. Such candidates will be considered for a joint, tenure-track, academic appointment between the Whitehead Institute for Biomedical Research and the Department of Biology, Massachusetts Institute of Technology. A candidate will be expected to conduct a research program in developmental biology and to participate in the Department's teaching activities. Applicants for these positions should provide curriculum vitae, a short description of their research plan, and names of three scientists willing to write letters of recommendation. Send applications to: **Dr. Rudolf Jaenisch, Whitehead Institute, 9 Cambridge Center, Cambridge, MA 02142.** *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

ASSOCIATE PROFESSOR OR PROFESSOR ENVIRONMENTAL HEALTH SCIENCE

A faculty member with multidisciplinary interests is being sought to provide leadership for the Environmental Health Sciences Division of the Department of Environmental and Industrial Health in the School of Public Health. This division has 9 faculty and 85 graduate students. Responsibilities: guide, integrate and participate in the interdisciplinary research and instructional activities of this group. Qualifications: national recognition for sustained research program and major scholarly contributions in an environmental health related area, demonstrated effectiveness in teaching, proven leadership abilities for a multidisciplinary group, demonstrated research strengths in one or more areas of environmental health. Applicants should send statement of research interests, curriculum vitae, and names of three references to: **Robert H. Gray, Ph.D., Chairman, Department of Environmental and Industrial Health, The University of Michigan, 109 South Observatory, Ann Arbor, MI 48109-2029.** *The University of Michigan is an Affirmative Action/Equal Opportunity Employer and specifically encourages applications from women and members of minority groups.*

BIOLOGY. TENURE-TRACK POSITION beginning fall semester 1988 as the Coordinator of Laboratories in College Biology I and II (course approval pending), the introductory course required of all majors in the biological sciences (biology, zoology). In addition, the appointee will teach in those laboratories, possibly serve as one of the lecturers in that course, and teach advanced courses which must include comparative vertebrate anatomy. Ph.D. required. *Women and minorities are encouraged to apply.* Send letter, curriculum vitae, three letters of reference, transcripts, and a statement of research interests by 22 February 1988 to: **Dr. Sigurd O. Nelson, Jr., Chair, Department of Biology, State University of New York College at Oswego, Oswego, NY 13126.**

An Equal Opportunity Employer

POSITIONS OPEN

ASSOCIATE/FULL PROFESSOR, International Nutrition. The Department of Nutrition, University of California, Davis, is seeking applicants for an 11-month tenure-track faculty position at the level of associate or full professor in nutrition and associate or full nutritionist in the Experiment Station to begin 1 January 1989. The appointee will have responsibility for development and expansion of a Program in International Nutrition. It is expected that the appointee will organize and conduct independent research in his/her disciplinary area, and have the ability to acquire extramural funding. Expertise in an area of human nutrition is essential. The appointee will also teach at the graduate and undergraduate levels and serve as adviser to undergraduate and graduate students. Interested persons should send a complete biography, a statement of research and teaching interests, copies of selected publications, and the names and addresses of three references to: **Dr. Andrew J. Clifford, Department of Nutrition, University of California, Davis, CA 95616.** *The University of California is an Affirmative Action/Equal Opportunity Employer and will welcome applications from members of minority groups and women.* Applications will be received until 31 March 1988 or until the position is filled.

DIRECTOR

Director, Agricultural Biotechnology Center, Maryland Biotechnology Institute. The position is located at College Park, Maryland and involves the direction of research in development and application of modern biotechnology to benefit agriculture and related sciences. An earned doctorate in agriculture and life science area, tenurable, proven research and external support record, and leadership, and organizational skills required. Qualified individuals submit a letter of application and a detailed résumé including names, addresses, and telephone numbers of three references who may be contacted to: **A. L. Steinhauer, Chairman, Search Committee for ABC Director, Department of Entomology, University of Maryland, College Park, MD 20742.** Complete application should be received by 29 February 1988 for full consideration. *The University of Maryland is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

BIOCHEMIST/CHEMIST: Assistant professor (non-tenure)/instructor/postdoctoral fellow to join large neuroscience lab with interest in purification and characterization of novel bioactive materials. Experience in analytic, enzyme, peptide chemistry or second messenger systems desirable. Strong interaction with molecular and cell biologists. Send curriculum vitae and bibliography to: **D. J. Reis, Laboratory of Neurobiology, Cornell University Medical College, 411 East 69th Street, NY, NY 10021.** *Equal Opportunity Employer/Affirmative Action/M/F/H/V.*

BIOLOGIST (VERTEBRATE ZOOLOGIST/PHYSIOLOGIST). Northern State College is seeking qualified applicants for a tenure-track position as assistant professor of biology. Responsibilities include teaching introductory level lecture and laboratory courses as well as upper-level courses in areas of expertise. Ph.D. with background in vertebrate zoology/physiology preferred. Position available 15 August 1988. Address nominations and applications to: **Dr. Thomas Flickema, Vice President for Academic Affairs, Northern State, Aberdeen, SD 57401.** Consideration of applications will begin on 1 March 1988 and will continue until the position is filled. *Equal Opportunity Employer.*

CELL BIOLOGIST/HISTOLOGIST CORNELL UNIVERSITY

The Section of Physiology is seeking an assistant professor (tenure-track) to teach an upper-level course (histology/organology) emphasizing the relation between structure and function at the tissue and organ level. The successful applicant is expected to develop a strong research program in some aspect of animal cell biology. Applicants should hold a Ph.D., M.D., D.V.M., or equivalent degree and have postdoctoral experience. Submit curriculum vitae, list of publications, the names and addresses of three references, and statements of teaching experience and research interests by 1 March 1988 to: **Dr. Ellis R. Loew, Chair, Search Committee, Section of Physiology, VRT 724, Cornell University, Ithaca, NY 14853.** *Cornell University is an Affirmative Action/Equal Opportunity Employer.*

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Scientist Drug Metabolism

The Drug Metabolism Department of Smith Kline & French Laboratories, located near Valley Forge, PA, has an excellent opportunity available for a Scientist.

The successful candidate will:

- assist in the design, conduct and reporting of Drug Metabolism studies involving animals.
- develop and perform assays for drugs and their metabolites in biological fluids.
- conduct pharmacokinetic studies in animals.
- participate in basic research activities in drug metabolism designed to assist in drug development and drug discovery.
- write reports and manuscripts for publication.

Candidate specifications include:

- B.S. degree with 3-5 years experience or M.S. degree in Chemistry, Biological Sciences or related area plus 1-2 years experience required.
- Demonstrated experience in bioanalytical methods development (e.g. HPLC) for drugs in biological fluids required.
- Extensive experience of administering drugs and obtaining biological samples from animals required.
- Experience in the isolation, purification and characterization of metabolites from biological fluid preferred.
- Proven research ability as evidenced by scientific publication desirable.
- Research experience in drug metabolism/pharmacokinetics useful.
- Excellent communication and interpersonal skills required.
- Experience in handling radio-labeled substances desirable, but not essential.
- No known allergies to animals.

We offer an excellent compensation, benefits and relocation package as well as opportunities for personal and professional growth. For confidential consideration please forward your C.V. and names of three references to Marianne Shandy, Manager, Personnel Relations-R&D, C0070, Smith Kline & French Laboratories, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an equal opportunity employer. M/F/H/V.

SK&F
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POSITIONS OPEN

BIOLOGY—Tenure-track ASSISTANT PROFESSOR. Appropriate earned doctorate required. Duties include teaching histology, anatomy and physiology and general biology. Appointment date: 1 September 1988. Send letter, curriculum vitae, official academic transcripts, statement of teaching interests and three letters of reference by 15 March 1988 to: **Dr. Charles Chapman, Department of Biological Sciences, Troy State University, Troy, AL 36082.** *TSU is an Affirmative Action/Equal Opportunity Employer.*

DEVELOPMENTAL BIOLOGIST ASSISTANT PROFESSOR

Broadly trained developmental biologist with strengths at the molecular level to teach courses in modern developmental cell biology to undergraduates. Ph.D. required. Postdoctoral experience desirable. TEM experience useful, but not required. Faculty are expected to conduct active research programs in which qualified undergraduates may be involved. Start up funds for research are provided. Position available 1 July 1988. Please send curriculum vitae, statement of research/teaching interests, and names and addresses of three references by 19 February 1988 to: **Chair, Department of Biology, Williams College, Williamstown, MA 01267.**

An Equal Opportunity/Affirmative Action Employer. Williams College especially welcomes applications from women and minority candidates.

THE NEW YORK BLOOD CENTER is the largest independent blood center in the world and a major fractionator of plasma. Recent reorganization and expansion of research and development ventures have created several opportunities in our Research and Development Department. Research emphasis is on therapeutic derivatives from blood and lymphokine biology.

DIRECTOR—Department head with Ph.D., strong leadership and research credentials in protein biochemistry, separations, etc. Individual will participate in selecting targets and have chief responsibility for the laboratories and pilot plant.

ASSISTANT/ASSOCIATE DIRECTOR—Ph.D. to lead research related to fibronectin growth promoters and wound healing.

RESEARCH FELLOW—Ph.D. to participate in devising and evaluating virus sterilization methods applicable to blood cell components. Experience in virology required.

Please submit résumé, position interest and current salary to: **BH, The New York Blood Center, Attention: Personnel, 310 East 67th Street, New York, NY 10021.**

Equal Opportunity Employer

EVOLUTIONARY GENETICIST

The Department of Zoology, Arizona State University, invites applications for a tenure-track position at the assistant professor level. Starting date for the position is 15 August 1988. Individuals with accomplishments and interests in molecular genetics, population genetics and the evolution of genetic systems in natural populations are encouraged to apply. Salary is dependent upon qualifications. Submit curriculum vitae, reprints, statements of research and teaching interests, and three letters of references to: **Dr. David I. Rasmussen, Chair, Faculty Search Committee, Department of Zoology, Arizona State University, Tempe, AZ 85287-1501.** Deadline for receipt of application material follows by 4 weeks the date of this issue.

The Department accepts applications of two individuals for a single shared appointment. *Arizona State University is an Equal Opportunity/Affirmative Action Employer and invites and encourages applications from women and minorities.*

FACULTY APPOINTMENT at assistant or associate professor level; Ph.D. in statistics or biostatistics required. Responsibilities will consist primarily of research and consulting, but will also include some graduate teaching. Opportunities exist for collaborative work with both clinical and basic science researchers. Send curriculum vitae and names of three references to: **Charles DeLisi, Ph.D., Chairperson, Department of Biomathematical Sciences, Mount Sinai School of Medicine, Box 1023, One Gustave L. Levy Place, New York, NY 10029-6574.** *An Equal Opportunity Employer.*

POSITIONS OPEN

THE UNIVERSITY OF NORTH CAROLINA DIRECTOR THE INSTITUTE OF NUTRITION

The University of North Carolina is seeking a new Director for its Institute of Nutrition. The Institute is a multidisciplinary and inter-campus unit organized to assist faculty in their educational, research and communication efforts related to the nutritional well-being of North Carolinians. Presently, there are five campuses: East Carolina University, North Carolina Agricultural and Technical State University, North Carolina State University, University of North Carolina—Chapel Hill, and University of North Carolina—Greensboro. The Director reports to the University's Vice-President for Research.

Responsibilities: Provide leadership in promoting and facilitating nutrition projects and programs among the five universities; promote special nutrition education programs; assist in obtaining external research funding for cooperative activities of the participating institutions and faculty; and encourage development of collaborative nutrition programs among the University disciplines and non-University organizations.

Qualifications:

- Earned doctorate in nutrition or a closely associated discipline; experience appropriate to qualify for appointment at the academic rank of Professor.

- Record of professional activities, research and scholarship which establishes preeminence at the national/international level.

- Possession of the requisite administrative and leadership skills for the management of interdisciplinary and inter-institutional programs.

Faculty status and salary: Academic appointment will be at one of the participating universities, salary commensurate with experience and qualifications.

Applications will be accepted until 1 April 1988 or until a suitable candidate is identified. Expected starting date is Fall, 1988.

Application: Send résumé and names of three references to:

**Dr. Ernest Schoenfeld, Chair
Search Committee
The Institute of Nutrition
CB #7410 311 Pittsboro Street
University of North Carolina
Chapel Hill, NC 27599-7410**

FACULTY POSITION IN DEVELOPMENTAL BIOLOGY

The Department of Anatomy and Cell Biology invites applications for a tenure-track faculty position. Applicants should have a strong training in developmental biology, including postdoctoral studies, with an orientation toward the nervous system. Successful candidate will be expected to participate in the campus-wide Neuroscience Committee activities and in the neuroanatomy course, and develop an independent, funded research program. Recruitment will continue until the candidate is identified. Please send a description of research interests, curriculum vitae, and the names of three references before 15 March 1988 to: **Dr. C. H. Anderson, Search Committee, Department of Anatomy and Cell Biology (m/c 512), University of Illinois at Chicago, P.O. Box 698, Chicago, IL 60680.** *The UIC is an Equal Opportunity/Affirmative Action Employer.*

The Department of Biochemistry at Eastern Virginia Medical School has several open **FACULTY POSITIONS** for outstanding candidates at the level of assistant or associate professor. These are tenure-track positions with competitive 12-month salaries and provide excellent opportunities for independent research programs and teaching. Successful applicants will develop a strong research program in an area of modern biochemistry or molecular biology such as the mechanism of gene regulation, DNA-protein interactions, metabolic regulation, enzyme mechanism, or hormone receptors and transmembrane signaling. Faculty members will be expected to attract independent research grants and to spend a major part of their effort in research.

Please send curriculum vitae, a statement of research interests and plans and three letters of reference to: **Dr. Karl A. Schellenberg, Chairman, Department of Biochemistry, Eastern Virginia Medical School, 700 Olney Road, Norfolk, VA 23501.**

POSITIONS OPEN

DIRECTOR DIABETES RESEARCH INSTITUTE

Eastern Virginia Medical School invites applications and nominations for the position, Director, Diabetes Research Institute. The Diabetes Research Institute is part of a comprehensive regional diabetes center that also includes clinical and educational components. The Institute has already received substantial initial support through an aggressive local and national fund-raising effort. The successful candidate will possess an extensive academic background, an established record of excellence in diabetes research and the skill, capacity, and entrepreneurial instinct to assure the long-term success of the Research Institute. Responsibilities of the position include developing a research program that will make significant contributions to the field of diabetes as well as directing research projects, program administration, and outreach. Full faculty status and benefits are available; conditions and salary are negotiable. Please reply to:

**Leon P. Georges, M.D.
Acting Center Director
The Diabetes Center of Eastern Virginia
P.O. Box 1980
Norfolk, VA 23501**

FACULTY POSITION—HEMATOLOGY

Full-time tenure-track position at assistant or associate professor level available. Applicants must be Board-certified or eligible in hematology, and have appropriate research training and a strong commitment to or established record in basic or clinical research, preferably related to hemostasis and thrombosis or atherosclerosis. Ample laboratory space available. Interested candidates should send curriculum vitae, a description of research interests, and names of three references to: **J. H. Joist, M.D., Ph.D., Division of Hematology, St. Louis University Medical Center, 1325 South Grand Boulevard, St. Louis, MO 63104.** *Equal Opportunity Employer, M/F/H/V.*

New York University (NYU) Department of Chemistry invites applications for a tenure-track **FACULTY POSITION IN THEORETICAL CHEMISTRY** at either a tenure or non-tenure level, beginning in fall 1988, pending final administrative approval. Applicants provide evidence of a major commitment to research. The successful candidate will be expected to be able to teach effectively at both the undergraduate and graduate levels. Applicants should submit curriculum vitae, with a list of publications, a summary of past research accomplishments and arrange for three letters of reference, to be sent by 16 February 1988, to assure full consideration to: **NYU Faculty of Arts and Science, Department of Chemistry, 4 Washington Place, 5th Floor, New York, NY 10003.** Attention: Professor Jules Moskowitz, Chair, Faculty Search Committee. *NYU is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION—NEONATOLOGY. Applications invited for Neonatal-Perinatal Board-certified, assistant professor, starting July 1988. Applicant must have training and experience in vascular cell biology, molecular physiology and free radical chemistry, in addition to strong clinical skills. Submit curriculum vitae and names of three references to: **Box 15, SCIENCE.**

FACULTY POSITIONS, TOXICOLOGY

Applications are invited for two tenure-track assistant professor positions in the toxicology program of 13 faculty at the University of Michigan. Candidates must have a doctorate in a relevant biomedical field, postdoctoral research experience complementary to current faculty interests of cutaneous, endocrine-reproductive, genetic, and neurotoxicology, the biotransformation of toxicants, chemical carcinogenesis-mutagenesis, and toxicologic pathology. Candidates must also have demonstrated potential for obtaining research funding from national sources, documented excellence in teaching, and a commitment to toxicology. Applicants are to submit curriculum vitae and names of three references to: **Walter N. Piper, Ph.D., Chairman, Toxicology Search Committee, The University of Michigan, 109 South Observatory, Ann Arbor, MI 48109-2029.** Applications will be accepted until 15 March 1988. *The University of Michigan is an Affirmative Action/Equal Opportunity Employer, and encourages women and minorities to apply.*

ADVERTISEMENT

POSITION: Assistant or Acting Associate Specialist in the Division of Biological Control, University of California at Berkeley, stationed at the Kearney Agricultural Center, Parlier, California. Available 1 April, 1988.

MINIMUM QUALIFICATIONS: Ph.D. degree in entomology or pest management with at least one year of experience in biological control of insect and mite pests.

Experience in culturing, colonization, and evaluation of natural enemies is highly desirable. Candidates should be conversant in modern statistical methods.

RESPONSIBILITIES: Conduct research in biological control of agricultural arthropod pests; develop programs in classical biological control and in augmentation and conservation of natural enemies; evaluate impact of biological control agents; manage quarantine facilities.

Interact with other researchers in developing protection programs for crops such as alfalfa, citrus, deciduous fruits and nuts, olives, sugar beet and others of importance to California agriculture.

Supervision of technical staff as needed.

The Kearney Agricultural Center is located in Parlier, approximately 25 mi. southwest of Fresno, a city with a population of approximately 300,000. It is staffed by 22 scientists from the Berkeley, Davis and Riverside campuses and from Cooperative Extension. Disciplines such as Entomology, Plant Pathology, Nematology, Pomology, Viticulture, Vegetable Crops, Water and Soil Science, Livestock, Agricultural Economics, Horticulture, and Extension Education are represented in the Center. Approximately 330 acres of land for research experimentation are part of the Center. All the facilities necessary to conduct research in biological control and crop protection, such as quarantine facility, greenhouses, laboratories and computer center, are available.

Bibliography, including all employment in entomology and pest management, and names of three individuals who would serve as references should be sent to:

Donald L. Dahlsten, Chair
Division of Biological Control
University of California, Berkeley 94720

Closing Date: 1 March, 1988

The University of California is an Equal Opportunity, Affirmative Action employer.



آغا خان یونیورسٹی

THE AGA KHAN UNIVERSITY

Faculty of Health Sciences
Medical College

The Aga Khan Medical College is now in its fifth year of operation. Its affiliated Aga Khan University Hospital has well equipped teaching and service laboratories and will have 721 beds when fully operational. The University and the University Hospital are autonomous privately funded institutions respectively committed to the provision of effective education and health services relevant to Pakistan and the region.

Applications are invited from candidates who meet the requirements for the positions of:

ASSISTANT PROFESSOR, DEPARTMENT OF BIOCHEMISTRY

Candidates applying for this position must have a Ph. D. or equivalent qualification, with at least two years Post-doctoral teaching/research experience. Candidates having experience of teaching in a Medical College or involved in medical research will be given preference. The successful candidate will be required to participate in ongoing research programmes.

INSTRUCTOR, DEPARTMENT OF BIOCHEMISTRY

Candidates applying for this position must have M. Phil. or Ph.D. with one year of experience. Candidates having both M.B.B.S. and Ph.D. will be preferred.

Salary and benefits will be offered commensurate with qualifications, experience and level of responsibilities. Candidates intending to pursue a career in Pakistan will be preferred. If you meet the above requirements and are seeking career development and professional growth, please send your detailed résumé, bibliography and names of at least three referees familiar with recent work history to the Personnel Director, The Aga Khan University, P.O. Box 3500, Stadium Road, Karachi-5, Pakistan.

POSTDOCTORAL FELLOW

Position available in the Department of Biochemistry & Molecular Biology for investigation of the structure-function relationships of G-protein-linked receptors. The project will focus on the molecular mechanisms of B-adrenergic receptor action, in conjunction with biophysical characterization of a series of mutant B-receptors.

The successful candidate will have a Ph.D. with a strong background in biochemistry or biophysics, with demonstrated interest in the mechanisms of protein action. Experience in reconstitution or biophysical characterization of membrane proteins is desirable.

Merck Sharp & Dohme Research Laboratories are located in Rahway, New Jersey approximately 25 miles from New York City. Our salaries, benefits, and growth potential are excellent.

Interested candidates should submit their resume with the names of three references and salary requirements to: **Ms. Jacqueline A. Eiermann, Merck & Co., Inc., P.O. Box 2000, Rahway, New Jersey 07065.**

Equal Opportunity Employer



Merck & Co., Inc.

Immunoanalytical Chemist

The Procter & Gamble Company is seeking an individual with experience in the development and application of immunoassay (RIA, ELISA) techniques for the measurement of analytes in biological matrices. This individual should have Ph.D. or postdoctoral training in analytical chemistry, clinical chemistry, biochemistry, or immunology. The position is at the Miami Valley Laboratories in Cincinnati, Ohio.

Responsibilities will include the supervision of a divisional immunoassay/ligand binding laboratory as well as the development of assay systems for novel drug candidates and endogenous species of pharmaceutical interest. Background experience in poly/monoclonal antibody production and purification, hapten-carrier conjugation, and enzymatic/isotopic labeling is highly desired.

Good communication skills and research experience in an interdisciplinary team environment are also important candidate requirements.

Applicants must be U.S. citizens or possess a permanent resident visa and should send their resume and publication list to:

Dr. T. J. Logan, Manager
Ph.D. Recruiting
Immunoanalytical Chemist Position
The Procter & Gamble Company
Miami Valley Laboratories
P.O. Box 398707, Cincinnati, Ohio 45239-8707

Procter & Gamble

AN EQUAL OPPORTUNITY EMPLOYER

NO AGENCY REFERRALS

POSITIONS OPEN

FACULTY POSITION PHARMACOLOGY AND TOXICOLOGY UNIVERSITY OF OKLAHOMA COLLEGE OF PHARMACY

The University of Oklahoma College of Pharmacy announces an immediate opening for a tenure-track position at the assistant professor level in the area of pharmacology and toxicology. Postdoctoral training in pharmacology/toxicology is highly desirable. The successful candidate will be expected to participate in and develop courses in pharmacology/toxicology at the undergraduate and graduate levels and develop an independent, extramurally-funded research program. The College of Pharmacy is a new building located on the University of Oklahoma Health Sciences Center (HSC) campus with Colleges of Medicine, Dentistry, Nursing, Allied Health and Public Health. Excellent laboratory and animal facilities are located within the College. Opportunities exist for joint appointment in other HSC Colleges. The salary is negotiable based on qualifications and experience. Send curriculum vitae, a description of research interests and goals, and the names of at least three references by 18 March 1988 to: **J. Thomas Pento, Ph.D., Head, Division of Medicinal Chemistry and Pharmacodynamics, College of Pharmacy, University of Oklahoma, Oklahoma City, OK 73190.**

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

GRADUATE RESEARCH ASSISTANTSHIP AND POSTDOCTORAL ASSOCIATESHIPS available through the Metabolism Training Program at Case Western Reserve University. The program is directed by an interdisciplinary group of faculty in the Departments of Biochemistry, Medicine, Pediatrics, Pharmacology, Molecular Biology, and Physiology and Biophysics and fosters innovative interdisciplinary research emphasizing new approaches to metabolism, especially molecular biology and biophysics. Doctoral programs are available through the department listed above. Competitive stipends. *The program is particularly interested in recruiting minority applicants.* Interested candidates are invited to apply to: **Dr. Richard W. Hanson, Program Director, Department of Biochemistry, Case Western Reserve University School of Medicine, Cleveland, OH 44106.**

Equal Opportunity/Affirmative Action Employer.

INVERTEBRATE ZOOLOGIST

Tenure-track position at the assistant professor level beginning August 1988. Ph.D. required. Research interests involving aquatic invertebrates, preferably marine. Teaching responsibilities in general and invertebrate zoology, plus possibly a specialty course in area of interest. Expected to maintain externally funded active research program. Postdoctoral experience preferred. Consideration of applications will begin 15 February 1988 and continue until the position is filled. Send letter of application with teaching and research interests, curriculum vitae, official transcripts, and three letters of recommendation to: **Dr. Clifford B. Knight, Biology Search Committee Chairperson, Department of Biology, East Carolina University, Greenville, NC 27855-4353.** Salary commensurate with experience.

Federal law requires proper documentation of identity and employability.

East Carolina University is an Affirmative Action/Equal Employment Opportunity Employer, and encourages applications from qualified women and minorities.

JUNIOR OR SENIOR POSTDOCTORAL/RESEARCH ASSOCIATE position available to study the effects of alcohol on the developing brain in an animal model system of Fetal Alcohol Syndrome. Neuroscience training with experience with computers and statistical analysis required. Preference will be given to those with demonstrated expertise in receptor binding localization and/or neuropharmacology. Have curriculum vitae and three letters of recommendation sent to:

Dr. James R. West
Alcohol and Brain Research Laboratory
The University of Iowa College of Medicine
Department of Anatomy, BSB
Iowa City, IA 52242

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

POSITIONS OPEN

HEAD, DEPARTMENT OF BIOCHEMISTRY AND DIRECTOR CENTER FOR BIOLOGICAL CHEMISTRY UNIVERSITY OF NEBRASKA- LINCOLN (UNL)

Applications, nominations, and inquiries are invited for the dual-position of Head of the Department of Biochemistry and Director of the University-wide Center for Biological Chemistry. The Department is part of the Institute of Agriculture and Natural Resources and has a state- and federally funded research mission in the Nebraska Agricultural Research Division. The undergraduate and graduate teaching programs in biochemistry are administered by the newly created Center and are offered in the College of Arts & Sciences and the College of Agriculture.

Responsibilities include the dynamic and innovative leadership of biochemistry programs at UNL by administering and participating in the research mission of the Department of Biochemistry and directing the undergraduate and graduate teaching programs of the Center for Biological Chemistry. Appointment will be at the full professor level; salary is competitive and based on qualifications and experience. A Ph.D. or the equivalent is required, as are an outstanding biochemical research record, proven interest and experience in teaching biochemistry, and strong leadership ability and administrative potential.

Applications, nominations, and inquiries should be directed as shown below. Applicants should provide curriculum vitae and names, addresses, and telephone numbers of at least three references by 15 March 1988 to:

Dr. Raymond Chollet
Chair, Biochemistry Search Committee
210 Biochemistry Hall
University of Nebraska-Lincoln
Lincoln, NE 68583-0718
Telephone: 402-472-2936 or 472-2932

Affirmative Action/Equal Opportunity Employer

MALACOLOGIST

Applications are invited for a research position in systematic malacology with specialization in land snails. This position is initially funded for 3 years, with a high probability of continued funding. Doctorate degree is required. Criteria for selection will include demonstrated capability in research, experience with collections, and proven record or potential for grantsmanship. Bishop Museum's holdings include more than 6 million mollusk specimens. Two-thirds of these are terrestrial mollusks and comprise the world's largest and most complete collection of Pacific Island land snails. Prior research experience with the Pacific region is advantageous but is not required; eventual specialization in the fauna of this region will be expected. Review of applications will begin 1 February 1988; the position will remain open until filled. Send letter of application, curriculum vitae, outline of research interests, and names of three references to: **Dr. Allen Allison, Chair, Malacologist Search Committee, Bishop Museum, P.O. Box 19000-A, Honolulu, HI 96817-0916.** Telephone: 808-848-4145. *An Equal Opportunity Employer.*

MICROBIOLOGY—Full-time position, **RESEARCH TECHNICIAN IV**, available immediately. Salary \$20,820 per year. Requires B.S. degree—chemistry-biology, and 1 year of experience in hybridoma research. Work involves production and characterization of monoclonal antibodies. Contact: **Dr. Robert Cherniak** at 404-651-3125 for additional information. *Georgia State University, a unit of the University System of Georgia, is an Equal Educational and Employment Opportunity Institution.*

MOLECULAR NEUROBIOLOGY POSTDOCTORAL FELLOW to join a group studying development of the nervous system. **Dr. Marcus Jacobson, Anatomy Department, University of Utah School of Medicine, Salt Lake City, UT 84132.** *The University of Utah is an Equal Opportunity Employer.*

POSITIONS OPEN

MARINE ECOLOGY

The Alabama Marine Environmental Sciences Consortium (MESC) announces two faculty positions at the **ASSISTANT/ASSOCIATE PROFESSOR** levels and a 2-year **POSTDOCTORAL FELLOWSHIP** in fisheries to complement an expanding program in estuarine and shelf ecology. Applicants with expertise in population dynamics and production of larval fish and shellfish (especially decapod crustaceans), animal-substrate interactions, benthic/pelagic coupling, and nutrient dynamics are especially sought, but strong candidates from other specialties will be given consideration.

Successful applicants will have a proven record of research productivity with a demonstrated ability or potential to attract extramural funding. Teaching responsibilities for faculty normally include two courses per year (on the quarter system). Salaries are for 12 months (postdoctoral fellow) and 9 months (permanent faculty), and are competitive. A joint tenure-track appointment at a Consortium member university is strongly encouraged and may be coordinated through the MESC administration.

MESC is an independent agency of Alabama Higher Education housed at the Dauphin Island Sea Lab, a 36-acre campus with office, laboratory, library and dormitory facilities. Courses are taught year round, with a summer program of nearly 100 undergraduate and graduate students in residence. MESC operates the 65' R/V A. E. Verrill as well as several smaller vessels. A newly installed 4000+ gallon seawater system is available. Applications with the names and addresses of three references should be sent by 1 March 1988 to:

Dr. Kenneth L. Heck, Jr.
Marine Environmental Sciences Consortium
P.O. Box 369
Dauphin Island, AL 36528

MICROBIOLOGIST. Northern State College is seeking a qualified applicant for a tenure-track position as assistant professor of microbiology. Responsibilities include teaching medical microbiology and immunology as well as introductory level lecture and laboratory courses. Successful candidate will have a Ph.D. in microbiology. The position is available 1 August 1988. Address nominations and applications to: **Dr. Thomas Flickema, Vice President for Academic Affairs, Northern State, Aberdeen, SD 57401.** Consideration of applications will begin on 15 February 1988 and will continue until position is filled. *Equal Opportunity Employer.*

MOLECULAR BIOLOGY CELL PHYSIOLOGY DEPARTMENT OF BIOLOGY

The Department of Biology invites applications for two tenure-track positions at the assistant professor level to begin during the 1988 to 1989 academic year. One position is in cell physiology and the other, in genetics and molecular biology. The applicants are expected to have postdoctoral experience. The department has strong interests in experimental biology. This includes faculty and graduate research in neuroscience, physiology, biochemistry and developmental, molecular and cell biology, and genetics. The appointee is expected to maintain an independent research program and contribute to graduate and undergraduate education. Interaction between faculty at both the teaching and research levels is encouraged. Please send curriculum vitae, copies of representative publications, a summary of previous and proposed research, and the names and addresses of three references to: **Dr. Ralph Hillman, Chairman, Department of Biology, 015-00, Temple University, Philadelphia, PA 19122.** Closing date for application is 30 April 1988. Applications will be reviewed upon receipt.

Temple University is an Equal Opportunity/Affirmative Action Employer.

MOLECULAR GENETICIST

Children's Hospital and Health Center is interested in recruiting a junior faculty level molecular geneticist to manage its Molecular Diagnosis Laboratory and to conduct independent research.

Applicants should have M.D. or Ph.D. degrees and recent experience in methods of molecular genetics. Clinical experience is desirable but not essential.

To apply, send curriculum vitae, list of publications and two letters of reference to: **Deana Pielak, Human Resources Department, Children's Hospital and Health Center, 8001 Frost Street, San Diego, CA 92123.** For additional information, call: **Dr. J. T. Mascarello** at 619-576-5809. *An Equal Opportunity Employer.*

University of California, Davis CELLULAR NEUROBIOLOGY TRAINING PROGRAM

Funding is available to support qualified individuals for training in cellular neurobiology at both postdoctoral and predoctoral levels. Successful applicants will join a young, vigorous neurobiology group that is highly interactive and in which collaborations are common. We particularly encourage participation of trainees in projects involving the expertise of two or more training faculty:

Hilary Anderson, Development of insect nervous systems
Richard Carlsen, Cell biology of axonal and muscle regeneration
Leo Chalupa, Prenatal development of mammalian visual system
Carol Erickson, Morphogenesis and differentiation of neural crest
Mark McNamee, Molecular biology of ACh receptors
Brian Mulloney, Generation and modulation of motor patterns
Pamela Pappone, Biophysics of ion channels
Robert Scobey, Retinal physiology
Barry Wilson, Cholinesterases and neurotoxicology
Martin Wilson, Cell biology of the retina

For more information, contact Dr. Brian Mulloney, Director, Cellular Neurobiology Training Program, Department of Zoology, University of California, Davis, CA 95616, or phone

(916) 752-7468.

UCD is an Equal Opportunity/
Affirmative Action Institution.

RESEARCH SCIENTIST

Molecular Biologist / Virologist / Immunologist (Ph.D.) to develop recombinant DNA-based vaccine for dengue virus, a mosquito-borne agent responsible for high levels of morbidity throughout the tropical Third World.

Duties will involve molecular cloning, identification and characterization of viral sequences encoding viral protein epitopes recognized by human convalescent sera, incorporation of these sequences into vectors to generate immunogens, and analyzing sera elicited by these immunogens.

Please send your application, curriculum vitae, and the names, addresses, and phone numbers of three references to:



Dr. Tom Humphreys
Director of Research
 Hawaii Biotechnology Group, Inc.
 99-193 Alea Heights Drive
 Honolulu, Hawaii 96701

An Equal Opportunity Employer



**UMDNJ-Graduate School of
Biomedical Sciences**

Announces a Ph.D. Graduate Program in Molecular Genetics and Microbiology at UMDNJ-Robert Wood Johnson Medical School

Director: Sidney Pestka
 Associate Director: Victor Stollar

FACULTY	RESEARCH INTEREST
Kenneth J. Breslauer	Nucleic acid structure and drug DNA binding studies; elucidating molecular recognition patterns.
Joseph P. Dougherty	Retrovirus replication and retrovirus vectors.
Donald T. Dubin	Bacterial antibiotic resistance; HIV structure and diagnosis.
Jerome A. Langer	Interferon and interferon receptors.
Michael J. Leibowitz	Viruses and plasmids of yeast; molecular parasitology.
John Lenard	Enveloped virus proteins, fungal hormones, multiple drug resistance.
Joachim W. Messing	Regulation of gene expression in plants, M13 cloning, gene synthesis.
Julian J. O'Rear	Cell cycle regulation, human genome structure and function.
Sidney Pestka	Interferon, receptors, cloning and expression of proteins.
Abbas Rashidbaigi	Interferons and their molecular mode of action.
Yacov Ron	Differentiation of T and B lymphocytes.
R. Walter Schlesinger	Mechanisms of viral neurovirulence.
Aaron J. Shatkin	Mechanisms of gene expression in eukaryotic cells and viruses.
Stanley Stein	Synthesis and analysis of peptides and proteins.
Victor Stollar	Virus-host cell interactions of arboviruses.
Evelyn M. Witkin	DNA repair and induced mutagenesis in bacteria.

These faculty from UMDNJ-Robert Wood Johnson Medical School and Rutgers, The State University of New Jersey, including the New Jersey Center for Advanced Biotechnology and Medicine are the nucleus of a growing graduate program. This program will provide courses, research rotations, and thesis research opportunities in laboratories with sophisticated instrumentation and computer access.

Merit-based fellowships are available providing an annual stipend of \$10,000 plus tuition.

Prospective students should write to: Director of Graduate Studies, Department of Molecular Genetics and Microbiology, UMDNJ-Robert Wood Johnson Medical School, 675 Hoes Lane, Piscataway, New Jersey 08854, for more information and an application form.

BIOCHEMISTS/ MOLECULAR BIOLOGISTS

UNITED STATES BIOCHEMICAL CORP.

United States Biochemical Corporation, a leader in the field of molecular biology has immediate openings for biochemists/molecular biologists with experience and training in enzyme purification, DNA sequencing and analysis. Various positions require either a Ph.D., M.S. or B.S. degree in chemistry, biology or biochemistry with at least 1 year's laboratory experience.

BIOCHEMISTS

Qualified candidates will be familiar with enzyme and protein purification including such techniques as column chromatography, salt fractionation, gel electrophoresis and radioactive and spectrophotometric enzyme assay procedures.

MOLECULAR BIOLOGISTS

Qualified candidates will be familiar with DNA sequencing methods. This includes preparation of DNA and running sequencing electrophoresis gel apparatus.

Successful applicants will be employed at our well-equipped Research Center in suburban Cleveland. Interested and qualified persons should send their resume in confidence to:



**United States
Biochemical Corporation**

Research Center
 P.O. Box 22400
 Cleveland, Ohio 44122

Equal Opportunity Employer M/F

Molecular Biology BS/MS

The Molecular Biology Research Group of The Upjohn Company has a position for a Research Associate to participate in research projects involving thrombosis and atherosclerosis. This position requires a B.S. or M.S. degree in Biochemistry or related field, and research experience in recombinant DNA techniques. Experience in cDNA synthesis, protein purification and/or mammalian cell expression techniques is highly desirable. This position offers a challenging research environment and the opportunity to participate in a multidisciplinary group working on the basic science aspects of atherosclerosis and thrombosis.

Kalamazoo is located in Southwestern Michigan midway between Chicago and Detroit and offers varied cultural events, cosmopolitan shopping and entertainment, lakes and woodlands minutes away, abundant year-round sports and recreation. Upjohn offers advancement opportunities, a highly competitive salary commensurate with experience, comprehensive benefits and relocation assistance. For confidential consideration, please call from outside of Michigan toll free 1/800/253-8600, ext. 3-6767, (inside Michigan call collect 616/323-6767) to request an employment application be sent to you immediately. Please refer to advertisement number 22415-A when calling. We are an Equal Opportunity Employer M/F.

**Our Commitment to Scientific
Excellence Continues...**

Upjohn

POSITIONS OPEN

NEARSHORE PROCESSES. The U.S. Geological Survey is seeking candidates for a **RESEARCH POSITION** in nearshore processes. The successful applicant will be part of the USGS Coastal Program and will work with an interdisciplinary team, composed of investigators from universities, State agencies, and the USGS, whose research is focused on the processes causing coastal erosion. Candidates should have a comprehensive quantitative background in nearshore processes, for example, in physical oceanography of the nearshore, particularly the surf zone, and the physics of nearshore sediment transport. Experience in designing and conducting nearshore field studies involving deployment of large arrays of instruments is desirable. Requirements are a Ph.D. and proven ability or clearly demonstrated potential for creative, independent research and publication of research results in refereed journals. The position will be a 4-year term appointment at the GS-12 to 14 level with the Branch of Atlantic Marine Geology in Reston, Virginia (Washington, DC metropolitan area). Applicants should submit résumé, brief description of research interests, three letters of recommendation, and SF 171 (Personal Qualifications Statement—available from U.S. Post Offices) to: **Dr. Asbury H. Sallenger, Chairman Search Committee, U.S. Geological Survey, 914 National Center, Reston, VA 22092. The USGS is an Equal Opportunity Employer.** Applications must be received no later than 8 April 1988.

United States Department of Agriculture (USDA), Agricultural Research Service (ARS). **NMR SPECTROSCOPIST** position at the Northern Regional Research Center, Peoria, Illinois. Successful candidate will operate a new Bruker MSL 300 solid-state NMR spectrometer equipped with a CRAMPS probe, as well as multinuclear probes for CP/MAS and wide line NMR studies and will participate with multidisciplinary teams (i) investigating molecular dynamics of phospholipids and enzyme interactions in plant cell membranes, (ii) characterizing plant components such as starches, vegetable oils and polyisoprenes and (iii) determining structure of lipid films and coatings and starch-synthetic polymer composites. Applicants need a working knowledge of physical, organic, polymer, and analytical chemistry and an in-depth knowledge of solid-state NMR spectroscopy. A Ph.D. in chemistry with postdoctoral work in solid-state NMR applications or equivalent is required. Position is a permanent position with beginning salary of \$32,567 (GS-12). For additional information on the research program contact: **James Cavins, USDA/ARS/NRRC, 1815 North University Street, Peoria, IL 61604. Telephone: 309-685-4011.** For information on application procedures contact: **Barbara Lamm, USDA/ARS, Personnel Operations Branch, North Central Section, Building 419, BARC-East, Beltsville, MD 20705. Telephone: 301-344-1542.** Applications in response to this advertisement should be marked 8N003 and sent to: **Barbara Lamm.** Applications must be received by 15 March 1988. U.S. citizenship required. *Equal Opportunity Employer.*



PLANT MICROPROPAGATION RESEARCH

Twyford Plant Laboratories, Inc., world-leader in development and commercialization of micropropagation systems, announces three immediately-available positions in its expanding research department. Those with industry experience are encouraged to apply.

RESEARCH SCIENTISTS: Ph.D. in plant sciences and demonstrated experience in specific areas described.

(i) System Development. New micropropagation systems for selected crops, including inorganic and organic nutrition, growth regulators, gaseous phase, toxic by-products.

(ii) Acclimation and Establishment. Micropropagation, particularly greenhouse acclimation, production and nutrition. Experience or training in agricultural engineering is highly desirable.

RESEARCH ASSISTANT: Micropropagation/Acclimation. B.S. with experience, or M.S. in plant sciences. Experience with micropropagation systems development and greenhouse production required.

Applicants should send curriculum vitae and names of three references to: **Dr. Irwin Y. E. Chu, President, Twyford Plant Laboratories, Inc., 15245 Telegraph Road, Santa Paula, CA 93060.**

POSITIONS OPEN

PARASITOLOGIST

The Wadsworth Center invites applications for a parasitologist. Applicants must have a Ph.D. specializing in parasitology with a strong background in molecular biology. Postdoctoral experience in molecular aspects of parasitic diseases is desirable. Duties include participation in and supervision of public health reference and diagnostic services in parasitology and development of an independent research program in the molecular aspects of parasitic pathogenesis. The Wadsworth Center provides a stimulating environment for active research as well as participation in academic pursuits. The Center is located in New York's Capital District, a complex of urban, suburban and rural communities. The area is noted for educational excellence and has outstanding cultural and recreational opportunities. Salary is commensurate with training and experience. Candidates should submit curriculum vitae and the names of three references to: **Mehdi Shayegeani, Ph.D., Wadsworth Center for Laboratories and Research, New York State Department of Health, Empire State Plaza, Albany, NY 12201.**

PATHOLOGY DEPARTMENT CHAIRMAN

We seek a successor to retiring chairman. Full responsibility for all academic and clinical programs including Pathology Lab at Albany Medical Center Hospital and Veterans Administration Medical Center. Must evidence continuing interest and productivity in research as well as solid track record of support and direction of teaching and residency programs. Strong administrative and management skills must be evident either directly or through delegation. Must be Board-certified. *Affirmative Action/Equal Opportunity Employer/M/F.*

Interested M.D.'s should send curriculum vitae with full bibliography to:

**Stanley D. Glick, Ph.D., M.D.
Pathology Search Committee
Albany Medical College
47 New Scotland Avenue
Albany, NY 12208**

PH.D.—ANESTHESIOLOGY (SURGERY) AND PHARMACOLOGY

The Section of Anesthesiology (Department of Surgery) is recruiting a Ph.D. with a background in neurosciences (i.e., neuropharmacology, neurotoxicology, neurobiology, or neurochemistry) to coordinate and develop basic research under the leadership of the Director of Clinical Investigation in Anesthesiology. A combined appointment in anesthesiology and pharmacology at the assistant professor level is anticipated.

Duties will include supervision and instruction of residents and fellows in basic science areas and supervision of graduate students and postdoctoral fellows from time to time. This person would be expected to develop a strong collaborative basic research program to complement and expand the major research focus of the Section, continuous intra-spinal drug infusion and related pharmacology and toxicology, in conjunction with the neurosciences disciplines at Dartmouth. Skills in quantitative autoradiography are essential. Experience with RIA, immunocytochemistry, receptor binding, neural tissue and cell culture, HPLC, and pharmacokinetic modeling is desirable. This person would be expected to become self-supporting through extramural and/or collaborative sources within 24 to 30 months.

Dartmouth Medical School is an Equal Opportunity/Affirmative Action Employer. Submit all inquiries and applications (curriculum vitae and three letters of recommendation) to: **D. W. Coombs, M.D., Neuroscience Search Committee, Dartmouth-Hitchcock Medical Center, Hanover, NH 03756.**

POSTDOCTORAL FELLOW immediate opening in cancer chemoprevention. Would be involved in chemical synthesis of various analogs of a phenolic inhibitor of carcinogenesis, and in biological assessment of the anti-mutagenic/anticarcinogenic effects of these analogs. Experience in synthetic chemistry and in chromatographic separations required. Biological techniques in mammalian tissue culture, enzyme analysis, pharmacokinetic assays, and animal bioassays desirable. Project funded for long period. Beginning salary \$20,000 to \$25,000, plus benefits. Reply to: **Dr. Gary Stoner, Department of Pathology, Medical College of Ohio, HEB, Rm 202, C.S. #10008, Toledo, OH 43699.**

POSITIONS OPEN

PLANT BIOTECH POSITIONS

A leading U.S. agricultural company has immediate openings on its plant biotechnology team in gene transfer and plant pathology. Qualifications for the pathology position include a Ph.D. and experience with bacterial or viral diseases. Qualifications for the gene transfer position include a Ph.D. or M.S. with experience in *Agrobacterium* transformation.

Send curriculum vitae and references to:

**Dr. C. E. Green
Vice President of Research
George J. Ball, Inc.
P.O. Box 335
West Chicago, IL 60185
Equal Opportunity Employer**

MSU-DOE PLANT RESEARCH LABORATORY MICHIGAN STATE UNIVERSITY PLANT MOLECULAR BIOLOGY

The MSU-DOE Plant Research Laboratory has available a tenure-track faculty position which can be filled at the **ASSISTANT OR ASSOCIATE PROFESSOR** level. Applications are being sought from individuals who propose to establish a research program focused on the investigation of fundamental problems in plant biology at the molecular and cellular level.

The Plant Research Laboratory is operated under a contract from the U.S. Department of Energy and provides a stimulating atmosphere and excellent facilities for research in experimental plant biology. Generous laboratory space and set-up support will be provided. An ongoing allocation of research funding is associated with the position.

Applicants must have postdoctoral research experience with demonstrated productivity and evidence of potential for independent and innovative research; senior applicants should have an established independent research program. In order to assure consideration, applications should preferably be received by 15 February 1988. Send curriculum vitae, a description of research experience and future research plans, and have three letters of reference sent to: **C. R. Somerville, Chairman, Search Committee, MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, MI 48824. Michigan State University is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL ASSISTANT (READVERTISED), Department of Environmental Health, University of Cincinnati—Postdoctoral research position in chemical carcinogenesis available immediately. Position involves the synthesis and identification of metabolites and characterization of DNA and hemoglobin adducts in biological systems. Ph.D. in chemistry/biochemistry is required. Background should include synthetic and spectroscopic techniques and familiarity with cell culture techniques. Send résumé and three letters of recommendation to: **Dr. David Warshawsky, Department of Environmental Health, University of Cincinnati Medical Center, Cincinnati, OH 45267-0056. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL FELLOWS

Several postdoctoral fellowship positions are available as of July 1988 with newly established research foundation. Areas of interest include basic and clinical research in the fields of lipid/lipoprotein physiology and metabolism, molecular biology, animal models and cell biology. M.D.'s or Ph.D.'s with backgrounds in these or related fields are encouraged to submit curriculum vitae to: **W. Virgil Brown, M.D., via:**

**Elizabeth V. Collard
Medlantic Management Corporation
Human Resources #260
100 Irving Street, N.W.
Washington, D.C. 20010
Equal Opportunity Employer**

POSTDOCTORAL POSITION available to study biochemical basis for antiviral activity of novel nucleoside analogs. Experience in enzymology, nucleic acid biochemistry and cell culture is desirable. Send résumé and three letters of reference to: **Dr. W. Prusoff, Department of Pharmacology, Yale University School of Medicine, New Haven, CT 06510. An Equal Opportunity/Affirmative Action Employer.**

Faculty Positions

The Center for Neural Science

The Center for Neural Science of New York University invites applications for tenure-track faculty positions in the general area of systems and integrative neuroscience. Candidates should be able to demonstrate excellence and originality in experimental and/or theoretical research. Appointments may be made at any level. The Center for Neural Science is a newly-formed interdepartmental unit of the Faculty of Arts and Science; its members are drawn from the Departments of Biology, Chemistry, Computer Science, Mathematics, Physics and Psychology. New members of the Center will hold appointments jointly in the Center and one or more of these Departments.

Candidates should send curriculum vitae, a statement of current research interest, copies of recent relevant publications and the names and addresses of three or more individuals, willing to provide letters of reference, to: **NYU Faculty of Arts and Science, Center for Neural Science, 6 Washington Square North, New York, New York 10003. Attn: Professor J. Anthony Movshon.**

NEW YORK UNIVERSITY
A PRIVATE UNIVERSITY IN THE PUBLIC SERVICE

NYU is an Equal Opportunity/Affirmative Action Employer

PLANT BIOTECH POSITIONS

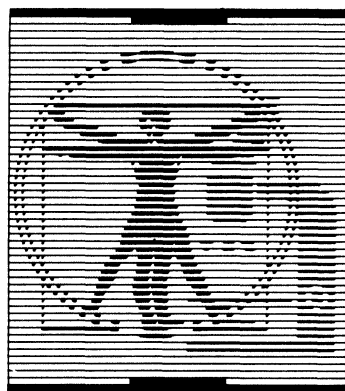
A leading U.S. agricultural company has immediate openings on its Plant Biotechnology Team in Plant Pathology and Gene Transfer. Qualifications for the Pathology position include a PhD and experience with bacterial or viral diseases. Qualifications for the Gene Transfer position include a PhD or MS with experience in Agrobacterium transformation.

Send curriculum vitae and reference to:

Dr. C.E. Green
Vice President
of Research

Ball GEO. J. BALL, INC.

P.O. Box 335
West Chicago, IL 60185



MOLECULAR BIOLOGISTS

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

STAFF SCIENTISTS

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

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

ocols, and function as a team member is essential.

POSTDOCTORAL SCIENTISTS

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

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

RESEARCH TECHNICIANS

We are looking for individuals with a BS or MS degree in the Biological Sciences and at least one year of experience with recombinant DNA technology, including DNA sequencing, cloning, restriction enzyme mapping, blotting, and propagating and purifying plasmids and phage. Positions are also available requiring biochemistry techniques of Western blotting, radioimmunoprecipitation, affinity column work and tissue culture.

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

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



PROGRAM RESOURCES, INC.

POSITIONS OPEN

POSTDOCTORAL POSITION available. Project involves the use of three-dimensional reagggregates and hybrid cell line tissue cultures to study the trophic factors and/or membrane proteins involved in innervation of striatal target cells by dopamine cells derived from the central nervous system. An immunological approach involving the generation of monoclonal antibodies to specific proteins of hybrid cell lines derived from the corpus striatum will be employed. Experience with tissue culture and immunohistochemistry techniques is desirable. Send curriculum vitae, names and addresses of three references, and description of research experience and interests to: **Dr. A. Heller, Department of Pharmacological and Physiological Sciences, University of Chicago, 947 East 58th Street, Chicago, IL 60637. The University of Chicago is an Equal Opportunity Employer.**

POSTDOCTORAL POSITION available in molecular neurobiology in neurodegenerative diseases, including Alzheimer's disease, in established multidisciplinary laboratory. Qualifications include a Ph.D. or M.D., and a strong background in biochemistry and molecular biology to explore the molecular basis of these diseases. Submit curriculum vitae and three references to: **Dr. Carol A. Miller, Department of Pathology, USC Medical School, 2011 Zonal Avenue, Los Angeles, CA 90033.**

POSTDOCTORAL POSITION open now to study de novo assembly of a simple human virus. Requires expression of hepatitis B viral antigens in frog oocytes and mammalian cells, study of interactions between different antigens and sequential building of the viral substructures [Standing *et al.*, *PNAS* 83, 9338 (1986)]. HRI (Director, William J. Rutter) employs state-of-the-art methods to study various biological problems. Molecular or cell biology experience essential. Curriculum vitae and references to: **Dr. David Standing, Hormone Research Institute, Department of Biochemistry and Biophysics, University of California, San Francisco, CA 94143-0534. Telephone: 415-476-8548.**

UCSF is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION available immediately for full-time participation in a research program studying the molecular genetics of human collagen disorders. Project involves patient screening, genomic cloning and DNA sequencing. Significant experience in molecular biology preferred. Send curriculum vitae and names of three references to: **Dr. Jeffrey L. Doering, Department of Biology, Loyola University of Chicago, 6525 North Sheridan Road, Chicago, IL 60626. An Equal Opportunity Employer.**

POSTDOCTORAL POSITION available for an immunologist/immunochemist to join our on-going study on the applications of monoclonal antibodies for detection and treatment of bladder cancer. Experience with monoclonal antibody technology is preferred. Send response to: **Dr. Chi-Wei Lin, Director, Urology Research Laboratory and Department of Surgery, Harvard Medical School, Massachusetts General Hospital, Fruit Street, Boston, MA 02114.**

POSTDOCTORAL POSITION available immediately to study the use of a new type of liposome for drug delivery. Experience or interest in pharmaceutical industry desirable. A doctoral degree in chemistry, biochemistry, biophysics, pharmacology, microbiology, biology, or other related sciences are required. Annual stipend \$17,000 to \$19,000, or higher, depending on qualifications. Please send curriculum vitae to: **Dr. Sinil Kim, University of California, San Diego, Cancer Center, T-012, La Jolla, CA 92093. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION: Available immediately to study the regulation of whole body and tissue protein metabolism using stable isotope technology in normal and diabetic humans. Excellent opportunity for training in biomedical mass spectrometry. M.D. or Ph.D. in physiology, biochemistry, or related area. Apply with curriculum vitae to: **K. Sree Nair, M.D., Ph.D., Endocrine-Metabolism Unit, Monroe Community Hospital, University of Rochester, 435 East Henrietta Road, Rochester, NY 14603-0905.**

POSITIONS OPEN

POSTDOCTORAL POSITION

Phosphoinositide metabolism: postdoctoral position. Starting summer 1988. Recent Ph.D.'s in biochemistry are invited to apply for a research appointment in our laboratory focussing on the regulation of phosphoinositide metabolism in human platelets. Please send résumé detailing familiarity with laboratory techniques, and names of three references to: **Dr. S. E. Rittenhouse, Department of Biochemistry, Given Building, University of Vermont, Burlington, VT 05405.**

POSTDOCTORAL POSITION IN NEUROBIOLOGY: Available immediately to study the role of cell adhesion molecules in axon guidance and nerve regeneration. The applicant should be a recent Ph.D. with a strong background in membrane protein biochemistry or cell biology. Send curriculum vitae, summary of research experience, and three letters of reference to: **Dr. Vance Lemmon, Department of Neurobiology, Anatomy and Cell Science, University of Pittsburgh, Pittsburgh, PA 15261. The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer.**

DREXEL POSTDOCTORAL POSITION IN BIOMEDICAL ENGINEERING AND SCIENCE INSTITUTE

Position commencing immediately. Perform theoretical and experimental analyses of the human cardiovascular system under acceleration stress. Assist in the design, development and testing of new modes of *g* protection. Ph.D. or equivalent required along with background in advanced math, biomedical instrumentation, microprocessor control, and/or fluid dynamics. Send résumé to: **Dr. Dov Jaron, Director, Biomedical Engineering and Science Institute, Drexel University, 32nd and Chestnut Streets, Philadelphia, PA 19104.**

POSTDOCTORAL POSITION—RESEARCH HEMATOLOGY: The Hematology Division of the Johns Hopkins University School of Medicine has a position available now for an individual with an M.D. or Ph.D. degree and an interest in experimental hematology (erythropoietin, regulation of hematopoiesis). U.S. citizenship required. Send curriculum vitae and three references to: **J. L. Spivak, M.D., Hematology Division, The Johns Hopkins Hospital, Baltimore, MD 21205. Equal Opportunity/Affirmative Action Employer.**

TWO-YEAR POSTDOCTORAL POSITION in plant ecology/chemistry available immediately to study goldenrod chemistry and resistance to gallmaking insects, in collaboration with evolutionary ecologists and population geneticist. Research includes correlative studies of secondary metabolites with plant resistance, isolation and identification of compounds with potential resistance properties, and development of bioassays for antioviposition agents and larval toxins. Diterpenoid and phenol chemistry, GC/MS, and HPLC experience highly desirable. Send curriculum vitae and three letters of recommendation by 20 February 1988 to: **Dr. Warren Abrahamson, Department of Biology, Bucknell University, Lewisburg, PA 17837. Affirmative Action Employer.**

APPOINTMENT POSITION IN MOLECULAR BIOLOGY CLEVELAND CLINIC FOUNDATION

The newly established Department of Molecular Biology is seeking applications for postdoctoral positions in the areas of regulation of RNA virus gene expression (Amiya K. Banerjee) and biochemical and biological studies of protooncogenes action (Dennis W. Stacey). Experience in recombinant DNA technology and biochemical and tissue culture techniques desirable. Please send curriculum vitae, statement of research interests and names of three references to:

**Dr. Amiya K. Banerjee
Department of Molecular Biology
Research Institute
The Cleveland Clinic Foundation
9500 Euclid Avenue
Cleveland, OH 44106**

POSTDOCTORAL POSITIONS:

To study mechanism of signaling via insulin receptor kinase. Experience in recombinant DNA or monoclonal antibody technology required. Send curriculum vitae and names of three references to: **J. Avruch, Chief, Diabetes Unit, Massachusetts General Hospital, Boston, MA 02114.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS IN PHARMACOLOGY available immediately. (i) Immunopharmacology (IP)—to study immunological modeling of receptors and the use of antibodies as drugs. Experience in one or more of the following: tissue culture or monoclonal antibody production, immunochemistry, protein biochemistry, or neuropharmacology. (ii) Behavioral Pharmacology (BP)—to study effects of psychoactive drugs on schedule-controlled behavior. A background in drug abuse research or operant conditioning is required. Competitive salary. Must have Ph.D. and U.S. citizenship or permanent visa. Send application including curriculum vitae and names of references to: **S. Michael Owens, Ph.D. (IP), or Donald E. McMillan, Ph.D. (BP), Department of Pharmacology, University of Arkansas for Medical Sciences, Mail slot 611, 4301 West Markham Street, Little Rock, AR 72205. An Equal Opportunity Employer.**

POSTDOCTORAL/RESEARCH ASSOCIATE. A position is available for an individual with a Ph.D. in pharmacology, biochemistry or cell physiology. The successful applicant will be engaged in research involving the effects and mechanisms of action of atrial natriuretic factor in cultured vascular and renal cells, with particular emphasis on calcium, cyclic nucleotide metabolism and cell proliferation. Competitive salary and fringe benefits are available. Appointment will be for 1 year, with possibility of renewal. Please send curriculum vitae and three letters of recommendation to: **Dr. Aviv Hassid, Department of Pharmacology, University of Tennessee, Memphis, TN 38163, or telephone: 901-577-4827. The University of Tennessee is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH POSITION IN MOLECULAR/QUANTITATIVE GENETICS

A position for a postdoctoral research associate is available in the Department of Genetics, North Carolina State University, to work on the molecular basis of quantitative genetic variation. The successful candidate will undertake the molecular analysis of P element-induced variation for bristle traits in *Drosophila melanogaster*. Experience in in situ hybridization, restriction fragment analysis, cloning and sequencing is desired, and some knowledge of quantitative genetics would be an asset. The position is available effective immediately or at a mutually agreeable date, and the salary is commensurate with research experience. Please send a complete curriculum vitae and three letters of reference to: **Dr. Trudy F. C. Mackay, Department of Genetics, Box 7614, North Carolina State University, Raleigh, NC 27695-7614. The closing date for applications is 29 February 1988, or when a suitable candidate is found. North Carolina State University is an Affirmative Action/Equal Opportunity Employer.**

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

POSTDOCTORAL RESEARCH ASSOCIATE POSITIONS—Positions are available at the Northern Regional Research Center, Peoria, Illinois, in four areas of research: (i) glycoprotein biosynthesis and secretion in maize endosperm including enzymology of synthesis, structural studies of oligosaccharides, and targeting of proteins; (ii) regulation of lipid metabolism in soybeans including the measurement of enzyme activities during temperature acclimation and isolation and characterization of the enzymes; (iii) genetic regulation of oligosaccharide biosynthesis in soybeans, including enzymology, protein structure and cloning of key metabolic enzymes; (iv) characterization of amylases, glucosidases and dextrinases found in germinating corn including identification of enzymes capable of invasion and hydrolysis of intact starch granules. Knowledge and experience in enzyme assays, protein isolation or purification required. Appointments will be at GS-11 (\$27,716) for 1 year and can be extended. Please send curriculum vitae and names of three references to: **Helen Sweeney, Personnel Department, USDA-ARS-Northern Regional Research Center, 1815 North University Street, Peoria, IL 61604. Applications in response to this announcement must be marked 8N005. Additional information may be obtained by calling: (i) J. A. Miernyk, (ii) Tom M. Cheesbrough, (iii) Tsung M. Kuo, (iv) Clarence A. Knutson at 309-685-4011. ARS is an Equal Opportunity Employer.**

Call for Abstracts
**NORTH AMERICAN
 CYSTIC FIBROSIS
 CONFERENCE**

Orlando, Florida
September 28–October 1, 1988
 Presented by the Cystic Fibrosis Foundation

*A Multidisciplinary Conference
 for Researchers, Physicians, and Allied
 Health Professionals on Advances in CF
 Research and Care.*

PLENARY SESSIONS: In Search of the Basic Defect
 • Immunological Approaches to Lung Disease •
 Pathophysiology—Bridge from the Lab to the Bedside

SYMPOSIA: Search for the CF Gene • Clinical
 Genetics • Characterizing Ion Channels • Regulation
 of Ion Transport • Biology of Pseudomonas • Infection
 • Transplantation • Cardiopulmonary Management
 • Controversies in CF Care • Nutritional Assessment •
 Adult Care Considerations • Psychosocial Issues

ABSTRACT DEADLINE: APRIL 1, 1988

For further information, contact the



Cystic Fibrosis Foundation
 6931 Arlington Road
 Bethesda, MD 20814 U.S.A.
 Telephone: (301) 951-4422

Simon Fraser University
DEPARTMENT OF BIOLOGICAL SCIENCES

Applications are invited for the following three positions which are available immediately.

BEHAVIOURAL ECOLOGY: a tenure-track position available at the Assistant Professor level in the general area of Behavioural Ecology. The successful candidate is expected to contribute to the Department's Behavioural Ecology graduate programme via teaching and supervision of graduate students, and to participate in the Department's undergraduate teaching program. Applicants should have a demonstrated competence in the area of evolution and behaviour.

INSECT PHYSIOLOGY/BIOCHEMISTRY: a tenure-track position is available at the Assistant Professor level for an insect physiologist/biochemist. Area of research specialization open. The successful candidate will develop a graduate course in insect physiology and its relationship to pest management, and will contribute to the departmental undergraduate teaching program, possibly in developmental biology and/or animal physiology. He/she will develop a vigorous research program involving the training of graduate students and will participate in the Department's Master of Pest Management program.

PESTICIDE BIOCHEMISTRY/TOXICOLOGY: a tenure-track position available at the Assistant/Beginning Associate Professor level for a person with expertise in the use, biochemistry and toxicology of pesticides. The successful candidate will develop courses dealing with the mode of action and use of chemical pesticides to service the Master of Pest Management and Environmental Toxicology programs. He/she will also contribute to other areas of the biological sciences curriculum and will develop a productive, independent research program including the training and supervision of graduate students. Area of research open.

Applicants should submit an up-to-date curriculum vitae, an outline of research interests, selected reprints of published research, and request three letters of reference be sent to:

Dr. L. M. Srivastava, Chairman,
Dept. of Biological Sciences,
Simon Fraser University,
Burnaby, B.C., Canada,
V5A 1S6.

Closing date for applications is *FEBRUARY 29, 1988* or when the positions are filled. In accordance with Canadian Immigration regulations, this advertisement is directed in the first instance to the attention of those individuals legally entitled to work permanently in Canada.

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**Bioanalytical
 Chemist**

The Department of Pharmaceuticals R&D at Smith Kline and French Laboratories is seeking a qualified candidate to join an innovative biopharmaceutical development group. The primary responsibility for the available position is to create and validate new analytical methods to quantitate the potency, stability and solubility of macromolecular drug substances and products. Other responsibilities include the application of the developed methods to completely characterize new macromolecular drugs and to provide analytical support for formulation scientists. The successful candidate is required to have a Ph.D. degree in chemistry or biochemistry with a demonstrated ability to develop analytical methods. Good written and oral communication skills are also essential. Experience in the manipulation, analysis and chemical modification of enzymes including electrophoretic, chromatographic and spectroscopic techniques is preferred.

Smith Kline and French Laboratories is located in suburban Philadelphia in a modern and well-equipped facility. We offer an excellent compensation, benefits and relocation package as well as opportunities for personal and professional growth. Please forward your curriculum vitae to: Marianne Shandy, Manager, Personnel Relations-R&D, C0069, Smith Kline & French Laboratories, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an equal opportunity employer. M/F/H/V.

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POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE in the area of membrane physical biochemistry. We are systematically investigating the effects of alcohols and anesthetics on the physical properties of individual membrane lipids, proteins, and simple lipid mixtures using NMR, fluorescence, and differential scanning calorimetry. Ph.D. in chemistry or biochemistry required. Send curriculum vitae and names of three references to: **Elizabeth S. Rowe, Ph.D., Research Service (151), 4801 Linwood Boulevard, Kansas City, MO 64128. Telephone: 816-861-4700 extension 541.** (Affiliated with the Biochemistry Department of the University of Kansas Medical School). *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH POSITION available immediately in multidisciplinary studies of aging connective tissue. Individual should have background in biochemical microtechniques. Experience with tissue culture desirable. Starting salary \$20,000. New cell biology/biochemistry laboratory. Send curriculum vitae and names of three references. **Lynette Feeney-Burns, Ph.D., Mason Institute of Ophthalmology, University of Missouri-Columbia, Columbia, MO 65212.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH POSITIONS available spring/summer of 1988 to study neuropeptide precursor processing enzymes that are required for substance P and enkephalin biosynthesis. Investigations will include enzyme characterization/regulation and determination of their role in the control of peptide neurotransmitter formation. Experience in protein/peptide chemistry and/or molecular biology is preferred; Ph.D. required in biochemistry or related area. Send curriculum vitae and names of three references to: **Dr. Vivian Hook, Department of Biochemistry, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, MD 20814.**

RESEARCH ASSISTANT

Research assistant—investigation of the hormonal factors regulating growth of infants, children and adolescents. Measurement of urinary growth hormones and growth hormone growth factors. Analysis and interpretation of the data in various growth pathologies. Laboratory techniques required include radioimmunoassays and high performance liquid chromatography. Require M.D. and 2-year fellowship in pediatric endocrinology. Salary: \$22,000 per year. Mail résumé to:

NYS Job Service
Job Order #0104399
68 West Huron Street
Buffalo, NY 14202

RESEARCH ASSISTANT PROFESSOR to work in the area of biosynthesis and regulation of lipoprotein (a), a genetically determined lipoprotein covalently linked to a plasminogen-like glycoprotein. Previous experience in cell biology required. Requires two letters of endorsement sent to: **Lipoprotein Study Unit, University of Chicago, 5841 South Maryland, Box 231, Chicago, IL 60637.** Contact: Ms. Kass 312-702-1378. *The University of Chicago is an Equal Opportunity Employer.*

RESEARCH ASSISTANT PROFESSOR to study redox proteins in glyoxysomal and ER membranes, orientation of the component cytochromes and flavoproteins, identify electron acceptors; train graduate and undergraduate students. Ph.D. in biochemistry, biology, or botany required. Experience in the isolation of organelles and membrane proteins preferred. Contact: **Dr. R. Donaldson, Biology Department, George Washington University, Washington, DC 20052.** *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE in excellent research environment. Ph.D. and experience, as evidenced in publications, in either biochemistry, enzymology, cell biology, nutrition or molecular biology. Studies focus on the role of environmental or nutritive stress on eye lens function. Potential for faculty status. Send résumé and three letters of reference to: **Dr. Allen Taylor, Director, Laboratory for Nutrition and Cataract Research, USDA Human Nutrition Research Center on Aging at Tufts University, 711 Washington Street, Boston, MA 02111.** *An Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

RESEARCH ASSOCIATE. Position available to study the effects and mechanisms of action of clinically useful and/or neurotoxic psychotropic agents including psychomotor stimulants on survival and function of specific transmitter-containing neurons (dopamine, serotonin, GABA) in three-dimensional reaggregate tissue cultures. Experience with tissue culture and analysis of neurotransmitter function by HPLC techniques desirable. Send curriculum vitae, names and addresses of three references, and description of research experience and interests to: **Dr. A. Heller, Department of Pharmacological and Physiological Sciences, University of Chicago, 947 East 58th Street, Chicago, IL 60637.** *The University of Chicago is an Equal Opportunity Employer.*

RESEARCH ASSOCIATES. (i) A protein biochemist/enzymologist to study phosphorylation sites in cardiac troponin subunits by protein kinase C and effects on Ca^{2+} sensitivity and activity of actomyosin ATPase. (ii) A cell biologist/pharmacologist to study protein kinase C system in growth and differentiation of cultured cells and in development and aging of animal tissues. Send application to: **Dr. J. F. Kuo, Departments of Pharmacology and Biochemistry, Emory University School of Medicine, Atlanta, GA 30322.** *Emory is an Equal Opportunity Employer.*

RESEARCH ENDOCRINOLOGIST. An academic position to investigate the molecular and cellular biology of the calcium-regulating hormones and their receptors. For Ph.D.'s in the biological sciences with relevant post-graduate training. Experience required in recombinant DNA, peptide hormone, and receptor technology. Salary established by UCSD research series. Send curriculum vitae with references to: **Dr. L. J. Defetos, University of California (V111C), San Diego, CA 92093.** *Affirmative Action/Equal Opportunity Employer.*

BIOGROWTH, INC. RESEARCH SCIENTISTS

BioGrowth, a biotechnology company, has immediate openings for the following scientists:

PROTEIN CHEMIST, Ph.D., with experience in protein purification and characterization, preferably from recombinant organisms. Particular expertise in immunochromatography, affinity and HPLC chromatography, Western blotting, and protein function analysis is required. Hybridoma expertise is desired.

MOLECULAR BIOLOGIST, Ph.D., with genomic and cDNA cloning, RNA isolation and analysis, and expression of genes in bacteria or mammalian cells.

BIOCHEMIST, B.S./M.S., with additional lab experience including gel electrophoresis, chromatography, and immunoassay development.

MOLECULAR BIOLOGIST, B.S./M.S., with additional lab experience including cDNA library construction, mRNA preparation/translation, DNA/RNA, sequencing, and expression vector construction.

BioGrowth, located in new facilities in the San Francisco Bay area, offers competitive salaries, benefits, and the opportunity to make a major contribution at a newly developing company. Please send your résumé, salary history, and list of three references to:

BioGrowth, Inc.
3065 Atlas Road, Suite 117, Department SC-4
Richmond, CA 94806

SENIOR REPRODUCTIVE PHYSIOLOGIST/BIOLOGIST

The Department of Zoology of the University of Texas at Austin invites applications or nominations for a senior tenure-track position in vertebrate reproductive biology. This position will be open in September 1989. We are particularly interested in candidates who specialize in neurology or neuroendocrinology but whose concerns are multidisciplinary. The successful candidate will be expected to have demonstrated a commitment to quality graduate teaching and a vigorous, independent research program. 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.**

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

POSITIONS OPEN

SCIENTISTS

Excellent career opportunities immediately available with client companies seeking entry through senior-level biochemists, organic and analytical chemists. Specific academic and/or industrial experience in immunology, enzymology, hematology, polymers or clinical trials a strong plus. Confidentiality assured. Qualified, serious candidates only.

Mr. Jeff Dean
Marcus and Associates
272 North Bedford Road
Mt. Kisco, NY 10549

SOFTWARE ENGINEER

An immediate opening is available for a software engineer in supercomputing research and development. This is a university position. The primary responsibility of the position is the design and implementation of a programming environment for parallel scientific computing. Duties include development of a debugger and performance analyzer for parallel applications written in a variety of programming languages. The programmer will also develop graphics and communication tools to provide user-friendly interfaces on bitmapped workstation products attached to a network supercomputing facility. The incumbent will also be involved with the development of artificial intelligence tools that aid the scientific programmer with application development.

Minimum qualifications include: master of science in computer science. The following required experience may have been obtained during graduate study or work experience (if any): At least 6 months use of C programming language and Berkeley UNIX; design and implementation of at least one compiler using LEX and YACC (UNIX compiler writing tools); use of Fortran, Pascal and Modula-2 programming languages; development and maintenance of artificial intelligence applications using LISP and PROLOG; development of numerical applications in a parallel processing environment. Must have had at least one graduate course in each of the following areas: programming languages, operating systems, compiler design, artificial intelligence, and parallel processing.

Salary will be between \$32,000 and \$40,000, depending upon experience and qualifications.

Send résumés, including names of at least three references to:

Mrs. Wanda Byrd
Illinois Job Service
402 North Randolph
Champaign, IL 61820
Reference: 7780-H

This is an employer-paid ad. *Affirmative Action/Equal Opportunity Employer.*

STAFF FELLOWS NATIONAL INSTITUTE ON DRUG ABUSE ADDICTION RESEARCH CENTER (ARC)

Applications are invited for possible appointments as staff fellows within the Preclinical Pharmacology Branch of the NIDA Addiction Research Center. This Branch conducts studies related to the behavioral pharmacology and genetics of drugs of abuse using experimental animals. Candidates must have a Ph.D. degree, with training in either behavioral, biochemical or molecular genetics, and an interest in problems related to neuroscience and animal models of drug abuse. The successful candidate will be expected to initiate and conduct interdisciplinary studies directed towards elucidating neural substrates of drug actions using behavioral, biochemical and molecular methods. Initial appointments are for 2 years with extensions possible. Current starting salary for persons without postdoctoral experience is \$27,172 U.S., with increments for relevant postdoctoral experience, plus generous benefits. The Addiction Research Center is located in Baltimore at the Francis Scott Key Medical Center, a Johns Hopkins facility in close proximity to Washington, D.C. Send curriculum vitae, application for federal employment (SF-171), bibliography, reprints, three letters of reference and a certified copy of the doctoral degree if available to: **Dr. Steven R. Goldberg, Chief, Preclinical Pharmacology Branch, NIDA Addiction Research Center, Box 5180, Baltimore, MD 21224.** *The ARC is an Equal Opportunity/Affirmative Action Employer M/F/H/V.*

Abbott

Fermentation Research Runs A Steady Course

Advanced research projects that are well conceived, well funded and well managed are par for the course at Abbott Laboratories. We're a \$4.5 billion world leader with an outstanding reputation for management and technical strength. Those strengths show through in our Chemical and Agricultural Products Division and the career opportunities we offer.

Molecular Biologists/ Fermentation R&D

We seek a PhD in Molecular Biology or a related field to study antibiotic biosynthesis genes in *Streptomyces*. Experience with gene-cloning systems in gram positive organisms and at least 2 years post-doctoral experience preferred.

We also seek candidates with an MS in Molecular Biology or a BS with at least 3 years industrial experience in molecular biology. Familiarity with recombinant DNA techniques such as DNA isolation, restriction analysis, southern hybridization and DNA sequencing are required. **Reply to Job #1**

Microbial Geneticist/ Fermentation R&D

We seek an MS or PhD with 3-5 years of industrial experience involving fermentation strain improvement. Must have strong interpersonal and written communications skills. Background with antibiotic-producing microorganisms preferred. **Reply to Job #2**

Protein Chemist/ Agricultural Microbiology R&D

We seek a PhD in Microbiology/Molecular Biology with postdoctoral experience in protein chemistry to conduct research in microbial biotoxins applicable to agriculture. Establish program for mode of action studies on microbial toxins effective against insect larvae targets. Knowledge of immunochemistry and insect physiology preferred. **Reply to Job #3**

Molecular Biologist/ Agricultural Microbiology R&D

We seek a PhD in Molecular Biology with a minimum of 2 years postdoctoral experience required. Conduct basic research in microbial pesticides and develop new products based on recombinant strains. Good communication skills are essential and industrial experience in microbial insecticides is preferred. **Reply to Job #4.**

Abbott Laboratories is headquartered in an attractive suburban area north of Chicago. We provide an excellent salary and benefits program featuring profit sharing and employee stock purchase plans. For more information, send a resume (indicating which position desired) in strictest confidence to: **Keith Allen/Corporate Placement Dept. S-1/29.** Abbott is an Affirmative Action Employer.

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ABBOTT PARK IL 60064
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DIRECTOR

OAK RIDGE NATIONAL LABORATORY

The Oak Ridge National Laboratory invites nominations and applications for the position of Director of the Laboratory. With a staff of over 4300, ORNL is the largest multiprogram energy laboratory in the U.S. Department of Energy R&D system. The Laboratory's primary missions are (1) to conduct applied research and engineering development in support of DOE's programs in fusion, fission, conservation, fossil, and other energy technologies and (2) to perform basic scientific research in selected areas of the physical and life sciences. The Search Committee is seeking candidates who have demonstrated management and leadership abilities and a distinguished record of achievement in scientific or engineering research. All communications should be sent to **Dr. M. W. Rosenthal, Oak Ridge National Laboratory, Building 4500N, Post Office Box X, Oak Ridge, TN 37831-6241.** All applications must be received no later than **March 15, 1988.**



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B IOTECHNOLOGIST

Join Nalco Chemical Company, a Fortune 500 world leader in specialty chemicals, located in a western suburb of Chicago. We seek a dedicated professional whose skill, expertise, and enthusiasm can help us maintain our leadership in the industry.

A critical position exists for a biotechnologist in our Corporate Research Department. You will be responsible for developing new products and processes for many industrial specialty applications.

A PhD is required and post-doctoral experience is desirable. The ideal candidate would have an expert knowledge of molecular biology or biochemistry and experience in enzymology or polysaccharides.

Nalco offers a salary commensurate with experience and a comprehensive company paid benefits program highlighted by our excellent profit sharing plan. For confidential consideration, send resume and salary history to:



Karen Nordquist
Employment Manager
Nalco Chemical Company
One Nalco Center
Naperville, Illinois 60566

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POSITIONS OPEN

STAFF SCIENTIST

Medtronic Inc., the international leader in implantable pacemakers, is seeking an individual with a B.S. in bioengineering or physiology and several years of experience in cardiovascular research. This person will conduct studies and work with clinical consultants in evaluating the feasibility of novel pacing and other cardiovascular diagnostic and therapeutic concepts. Experience in acute and chronic animal studies and use of appropriate instruments is essential. A Ph.D. in this field is preferred. Submit résumé/curriculum vitae to: **Vern Brewers, Medtronic Inc., 7000 Central Avenue NE, Minneapolis, MN 55432. Equal Opportunity Employer.**

SHANNON POINT MARINE CENTER (SPMC) WESTERN WASHINGTON UNIVERSITY 1988 SUMMER RESEARCH AWARDS

SPMC announces 1988 Summer Research Awards. Applications are solicited from investigators in the marine sciences interested in conducting research at SPMC during the summer of 1988. Investigators in the early phase of their careers who have demonstrated the potential for research productivity since receiving the doctorate are particularly encouraged to apply. The award includes laboratory space and a \$1500 stipend. We anticipate offering four to six awards in 1988. SPMC is located in Anacortes, Washington in the northern Puget Sound basin. Applications should include a résumé, a description of the specific research topic proposed for 1988, and a statement of space and other facilities required. Announcement of awards will be made by mid-February, 1988. Applications and inquiries should be addressed to: **Dr. Stephen D. Sulkin, Professor and Director, Shannon Point Marine Center, 1900 Shannon Point Road, Anacortes, WA 98221.**

TECHNICIAN TECHNICAL SPECIALIST

Researchers at SUNY Stony Brook are seeking a research technician (technical specialist) for AIDS virus laboratory studying molecular virology and conducting antiviral trials. Responsibilities will include analysis of viral DNA and RNA and cultivation of the AIDS virus. Bachelor's degree required, graduate work in biological sciences preferred. At least 2 years of work in molecular virology and/or expertise in tissue culture, recombinant DNA technology, in situ hybridization, or immunohistochemical staining preferred. Full-time position. Call: **Dr. Barbara Weiser at 516-444-1660. SUNY Stony Brook is an Affirmative Action/Equal Opportunity Educator and Employer. AK#324-A.**

TENURE-TRACK JUNIOR FACULTY POSITION IN THEORETICAL PHYSICS THE JOHNS HOPKINS UNIVERSITY

The Department of Physics and Astronomy at The Johns Hopkins University invites applications for a tenure-track faculty position at the assistant professor level in high energy particle theory to begin in July 1988. Requirements include a Ph.D., demonstrated research accomplishments and good teaching ability. Applicants should send their curriculum vitae, the names of at least three references, and a brief description of their research interests to: **Professor J. C. Walker, Chairman, Department of Physics and Astronomy, The Johns Hopkins University, Charles and 34th Streets, Baltimore, MD 21218.** The deadline for applications is 15 March 1988. *The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.*

VERTEBRATE BIOLOGIST—VISITING ASSISTANT PROFESSOR OF BIOLOGY. St. Lawrence University. One-year replacement; Ph.D. required. Duties commence 24 August 1988, and include teaching comparative anatomy and ornithology with labs, and courses in speciality at population or organismic level. Non-sectarian liberal arts college of 2000; department of nine. Application including curriculum vitae and three letters of recommendation by 1 March 1988 to:

**Ms. Carol Budd
Biology Department
St. Lawrence University
Canton, NY 13617**

St. Lawrence University is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.

POSITIONS OPEN

TOXICOLOGIST—PUBLIC INTEREST

Position with a national consumer advocacy organization. Evaluate research on food additives, pesticides, and bacteria; help prepare regulatory petitions; advise consumers and journalists. Advanced degree, writing skills, and interest in consumer advocacy required. Salary: \$30,000 to \$40,000. Résumé, popular writing sample, and salary history to: **Center for Science in the Public Interest—DB, 1501 16th Street, NW, Washington, DC 20036.**

VETERINARY GROSS ANATOMIST. The Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology, College of Veterinary Medicine, Washington State University solicits applications for a tenure-track position at assistant/associate professor level. Duties include teaching veterinary gross anatomy to D.V.M. students and develop a viable research program in the area of her/his interest. Areas of research in the department include: biomechanics, bone metabolism, neurobiology, teratology, toxicology and cellular, cardiovascular and exercise physiology. Qualifications: D.V.M./Ph.D. or Ph.D. in anatomical sciences. Candidates with demonstrated teaching and research experience are preferred. Rank and salary will be commensurate with qualifications. Written applications must include curriculum vitae and the names, addresses, and telephone numbers of three references. Applications and inquiries should be addressed to: **Dr. V. K. Reddy, Department of VCAPP, College of Veterinary Medicine, Washington State University, Pullman, WA 99164-6520.** Applications deadline—15 March 1988 or until the position is filled. *Washington State University is an Equal Opportunity/Affirmative Action Educator and Employer. Protected Group Members are encouraged to apply and identify their status.*

VISITING ASSISTANT PROFESSORS IN PHARMACOLOGY/PHYSIOLOGY. The Department of Pharmacodynamics, College of Pharmacy, University of Florida is searching for one to two visiting assistant professors to fill nontenure-track positions for 1 to 2 years. Applicants must hold a Ph.D. degree in pharmacology, physiology or related fields. The candidate will be required to participate in team teaching of pharmacology, physiology and/or pathophysiology to pharmacy students. Time may be available to conduct collaborative and independent research. Current research areas of the faculty in the department are aging, neuroendocrinology, cardiovascular pharmacology, toxicology and temperature regulation. Positions will be available by July 1988. Applicants should send curriculum vitae, a description of research interests and career goals, and have three letters of reference sent by 1 April 1988 to: **Dr. Ralph Dawson, Chairman of Search Committee, Department of Pharmacodynamics, Box J-487, JHMHC, University of Florida, Gainesville, FL 32610.** *The University of Florida is an Equal Opportunity/Affirmative Action Educator and Employer.*

The Illinois State Water Survey, located at the University of Illinois in Urbana-Champaign, operator of the NSF/ISWS CHILL Radar National Facility, announces a **VISITING SCIENTIST** position. A medium or longer term of appointment is offered for research related to the future development of high-performance microwave radars and their use in atmospheric research. The objective is to provide a scientist the opportunity for frequent access to the Facility for purposes of specialized and exploratory research and for frequent exchange of ideas with the Facility staff. The appointment will be for 3 months, but may be longer for an individual on sabbatical or other paid leave from his/her home institution. Remuneration will be commensurate with the experience of the scientist and may include some appropriate extra expenses. The Facility includes state-of-the-art processing technology and computer capabilities for many analysis procedures. In addition, the scientist will have access to the CRAY XMP in the NSF-funded National Center for Supercomputing Applications at UI as well as other UI and ISWS computer facilities. Experienced and postdoctoral scientists with particular interest in the use of microwave radars in atmospheric research are encouraged to apply for this appointment by sending a résumé and the names of three references to: **Dr. Peter J. Lamb, Head, Climate and Meteorology Section, Illinois State Water Survey, 2204 Griffith Drive, Champaign, IL 61820.**

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

AWARDS

PHYSICIAN/SCIENTIST AWARD

Applications are invited for the **Edward Herbert Physician Scientist Award** sponsored by the Vollum Institute for Advanced Biomedical Research of The Oregon Health Sciences University. The award provides the opportunity and salary support for a newly trained clinical professional with a commitment to research to develop into an independent biomedical investigator. Training during the tenure of this award (up to 2 years) will be with a faculty sponsor from the Vollum Institute. The Institute is a major division of the university committed to the application of molecular biology to basic research in the neurosciences. Candidates are restricted to those holding health professional degrees in the clinical sciences and must provide evidence of serious intent for a research and academic career. Physicians holding a Ph.D. degree are ineligible. Inquiries should be addressed to:

**Dr. Michael Forte, Scientist
Vollum Institute for Advanced Biomedical Research
The Oregon Health Sciences University
3181 S.W. Sam Jackson Park Road
Portland, OR 97201**

The Oregon Health Sciences University is an Affirmative Action Employer.

SUMMER RESEARCH AWARDS IN ECOLOGY: The Pymatuning Laboratory of Ecology, University of Pittsburgh has available research awards for the summer of 1988. Proposals are welcome at all academic levels for research in any area of ecology. Support will usually not exceed \$3500, and may include travel, equipment, supplies, assistants, and room and board at the Laboratory. The research must be carried out at the Laboratory. Inquiries or proposals should be sent by 15 April 1988 to: **Pymatuning Laboratory of Ecology, Route 1, Box 7, Linesville, PA 16424.**

GRANTS

THE ROGER TORY PETERSON INSTITUTE OF NATURAL HISTORY will award GRANTS from \$500 to \$5,000 for research in the areas of geology, biological sciences, and natural history. Deadline for applications is 31 March 1988. For information contact: **The Roger Tory Peterson Institute, 110 Marvin Parkway, Jamestown, NY 14701. Telephone: 716-665-2473.**

WORKSHOP

MOLECULAR METHODS WORKSHOP FOR BIOMEDICAL RESEARCHERS

The Pittsburgh Supercomputing Center (PSC) is conducting a workshop on "Methods of Molecular Mechanics and Dynamics of Biopolymers," 13 to 15 July 1988, funded by a grant from the Division of Research Resources' Biomedical Research Technology (BRT) Program of the National Institutes of Health (NIH).

The workshop will familiarize biomedical researchers with computational methods and practice for the application of supercomputing resources to problems of concern in molecular mechanics. Practical experience will be gained in the application to: (i) the problem of conformational mapping and analysis of polypeptide structures, (ii) the structural refinement of polypeptides, proteins, and nucleic acids using constraints from measured NMR data, and (iii) computation of interaction energies and free energies for protein-drug interactions. The use of state-of-the-art macromolecular computational packages, such as CHARMM and EXPLORE will be illustrated. Workshop leaders: **Charles L. Brooks III, Carnegie Mellon University, and Axel T. Brunger, Yale University School of Medicine.**

Travel, meal, and hotel accommodations are covered for academic participants under the grant. A limited number of openings for industry-based biomedical researchers may be available for a fee of \$1,000. The deadline for the submission of applications is 15 March 1988. Enrollment is limited to 20 participants.

For application forms and additional information, call or write: **Biomedical Coordinator, Pittsburgh Supercomputing Center, 4400 Fifth Avenue, Pittsburgh, PA 15213. Telephone: 412-268-5206.**

Positions Open

ImClone Systems Incorporated, an innovative, rapidly growing biotechnology company located in New York City, is seeking highly motivated individuals for vaccine development, generation of monoclonal antibodies and immunoassay development.

Immunologists

Positions are available at the doctoral and research associate levels for individuals with demonstrated skills in the generation of B and T cell hybridomas. Relevant industrial experience would be an advantage. Several positions are available at the B.S. level for persons with purification, PAGE, and immunodiagnostic assay formatting experience.

ImClone offers excellent salary and benefits, and a challenging, multidisciplinary environment for scientists who can assume both individual and team responsibilities.

Send CV to: **John Landes, ImClone Systems Incorporated, 180 Varick St., New York, New York 10014.**



ImClone Systems Incorporated

FACULTY POSITION AVAILABLE BIOLOGY

Tenure track faculty pos. in molecular cell/devel. biol. in growing department at a major university in suburban New York City. Rank and salary open; postdoctoral experience and evidence of research productivity are required.

Teaching of both undergraduates and graduate students is expected, but the successful candidate will have a primary responsibility to train Ph.D. students in a vigorous, externally-funded research program. Startup funds are competitive and newly-renovated laboratory space is available.

Candidates should submit a c.v. with list of publications, a brief statement of research interests, and the names of at least three references by Mar. 1, 1988 to Dr. Richard A. Lockshin, Chair, Dept. of Biological Sciences, St. John's University, Jamaica, NY 11439.

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**THE UNIVERSITY IS
ST. JOHN'S**

CSIRO

FISHERY SCIENTIST/POPULATION DYNAMICIST (RESEARCH FELLOW)

A\$28,629 pa TO A\$41,861 pa

DIVISION OF FISHERIES RESEARCH MARINE LABORATORIES, HOBART, TASMANIA AUSTRALIA

THE DIVISION: The CSIRO Divisions of Fisheries Research and Oceanography collectively form the CSIRO Marine Laboratories. The Division of Fisheries Research undertakes studies into biology, ecology and population dynamics of marine populations (both plant and animal) and supplies information for the development of management strategies for fisheries within the A.F.Z. The Division currently employs about 140 staff of whom 80 are professional research staff. Laboratories are located in Hobart, Perth and Brisbane. The Division has a well equipped charter vessel (53m) available for research.

THE PROGRAM: Within the Fish Population Dynamics Section a program is established to conduct research into the trawl fishery of the continental shelf and shelf slope in Southeast Australian waters. Most of the catch is obtained by otter trawling and Danish seining, with 10 species comprising the bulk of the catch. This fishery is regarded as a national resource of Australia and is managed via a management committee.

THE JOB: The appointee will undertake research into the population dynamics of exploited fish stocks in mixed stock fisheries, and develop and evaluate management strategies for these fisheries. This will require both integration of information currently available through advisory and management agencies and the development of biological research projects and collection of fishery data. The appointee will provide ongoing advice to the research and management agencies of the S.E. trawl fishery.

THE PERSON: Applicants should hold a PhD degree on equivalent qualifications in quantitative Zoology or Fisheries Biology with experience in methods of assessment of exploited populations. Demonstrated mathematical ability, particularly in the development and application of mathematical methods and models in a biological context is essential. They should have familiarity with computer programming and its application to scientific problems. Post-graduate experience in population dynamics and stock assessment would be an advantage.

CONDITIONS: Appointment will be for a term of 3 years with Australian Government Superannuation benefits available.

MORE INFORMATION: Prospective applicants are invited to telephone Dr. K. Sainsbury on (002) 206222 for further information. Dr. Sainsbury can also provide a copy of the detailed job description and selection criteria.

APPLICATIONS: Applications should be submitted by 26 February 1988 and quote reference number A2405. They should be framed against the selection criteria and should state relevant personal particulars including details of qualifications and experience. Applicants should nominate at least two professional referees, and address their applications to:

The Chief
CSIRO Division of Fisheries Research
Marine Laboratories
GPO Box 1538
HOBART 7001
AUSTRALIA

CSIRO IS AN EQUAL OPPORTUNITY EMPLOYER

LIFE SCIENCES

Arthur D. Little, Inc., a leading multinational research and technical consulting firm, has two management openings in its Cambridge, Massachusetts, Life Sciences facility.

Manager of Toxicology

Primary management responsibilities for our in vivo toxicology unit. Must have experience and track record in marketing and managing a wide range of toxicology studies. DABT and/or DATS and study director experience required. Line managerial experience is highly desirable.

Manager of Regulatory Affairs Practice

Major responsibilities for building our current Quality Assurance and Regulatory Affairs practice. Current activities involve interfacing with laboratory-based health effects scientists and health care consultants in regulatory strategy and technical regulatory submissions. Consulting activities include commercial as well as state and Federal government clients. Strong track record in regulatory affairs consulting, including preparation of submission to FDA, EPA, DOT and OECD required.

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ASSISTANTSHIPS

GRADUATE STUDIES IN MOLECULAR AND CELLULAR PHYSIOLOGY

The Department of Physiology in the College of Medicine of the Pennsylvania State University has assistantships available for graduate studies in molecular and cellular physiology. The faculty of the Department of Physiology is known for their research in various aspects of molecular and cellular physiology, particularly in cell structure and function, hormone action, regulation of gene expression, cell growth and differentiation, metabolic regulation, and neurotransmitters and receptors. Interested candidates are invited to apply to: **Dr. Leonard S. Jefferson, Chairperson, Department of Physiology, Pennsylvania State University, Milton S. Hershey Medical Center, P.O. Box 850, Hershey, PA 17033. U.S. citizenship or permanent residence required. An Equal Opportunity/Affirmative Action Employer.**

TRAINING PROGRAM

GRADUATE TRAINING PROGRAMS PHARMACOLOGY AND MOLECULAR SCIENCES AND ANTICANCER DRUG DEVELOPMENT THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE

Opportunities for studies leading to the Ph.D. degree are offered in the following general areas of research: (i) Protein and carbohydrate structure/function, (ii) molecular biology and gene regulation, (iii) molecular parasitology and virology, (iv) biomedical mass spectroscopy, (v) neuropharmacology, and (vi) design, synthesis, and testing of new drugs.

The programs foster innovative, interdisciplinary research and provide competitive stipends for qualified individuals. Candidates with strong potential and interest in Ph.D. studies in the areas listed above should contact: **Dr. Mette Strand, Director of Graduate Training, Department of Pharmacology and Molecular Sciences, The Johns Hopkins School of Medicine, 725 North Wolfe Street, Baltimore, MD 21205. Telephone: 301-955-7117.**

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FELLOWSHIPS

INTERNATIONAL CANCER RESEARCH FELLOWSHIP

The Hayashibara Mutual Aid Fund, a non-profit-making organization within the Hayashibara Group announces a fellowship program. Two awards will be made annually. Fellowship will be taken up at the newly opened Fujisaki Cell Center which is devoted to basic and applied research related to problems in human cancer. The fellowship is normally made for 1 year and is renewable for up to 5 years. The fellowship will be expected to commence within 6 months of the announcement of the awards. The awards are for high quality research work in one of the three categories described below.

- 1) Fundamental Leukemia-Lymphoma Research,
- 2) Cytokine-Lymphokine Research,
- 3) Hematopoietic Cell Cultures.

Qualified person who has a Ph.D., an M.D. or equivalent qualifications will be awarded on merit to suitably qualified research proposal and experiences. Additional information and application forms will be obtained from **Jun Minowada, M.D., Director, Fujisaki Cell Center, 675-1, Fujisaki, Okayama 702, Japan.**

NEUROBIOLOGY—POSTDOCTORAL FELLOWSHIP

One- to 2-year position immediately available to study functional and structural changes following nerve regeneration and muscle reinnervation in larynx, pharynx, facial muscles and other cranial nerve systems. Completion of Ph.D. required. Stipend level determined by experience. Send curriculum vitae and names and addresses of three references to: **Roger L. Crumley, M.D., Chief, Otolaryngology—Head and Neck Surgery, UCI Medical Center, 101 City Drive, Orange, CA 92668. The University of California is an Affirmative Action/Equal Opportunity Employer.**

FELLOWSHIPS

BOTANY—POSTDOCTORAL FELLOWSHIP AT YALE UNIVERSITY

Applications are invited for the Forest B. H. and Elizabeth D. W. Brown Postdoctoral Fellowship in Botany, providing for 1 year of research in the fields of plant molecular biology, plant development, plant physiology, or the evolutionary biology of vascular plants. This appointment will commence in the academic year 1988 to 1989 or earlier by mutual agreement. Send inquiries and résumé (curriculum vitae, reprints, and names of three potential references) to: **The Chairman, Department of Biology, Yale University, P.O. Box 6666, New Haven, CT 06511. Application deadline: 7 March 1988. Yale University is an Equal Opportunity/Affirmative Action Employer.**

PREDOCTORAL FELLOWSHIP. R. B. Weintraub Fellowship; training in biology in one of these areas: plant cell and molecular biology, peroxisomes, evolution of protists and vascular plants, molecular evolution, development, renal physiology, comparative neuroanatomy and endocrinology, ecology. Teaching fellowships also available. Contact: **Dr. R. Packer, Biology Department, George Washington University, Washington DC 20052.**

POSTDOCTORAL FELLOWSHIP available to study human colon carcinoma cell differentiation both in resected tumors and in cell line models, for 2 years, starting at \$25,000 per year plus fringe benefits beginning 1 July 1988. Candidates with a Ph.D. in cell biology or biochemistry preferred. Send curriculum vitae and two letters of reference to: **Eileen Friedman, Ph.D., Memorial Sloan-Kettering Cancer Center, Laboratory of Gastrointestinal Cancer Research—Box 5614, 1275 York Avenue, New York, NY 10021.**

FELLOWSHIPS IN BIOLOGY AND ENDOCRINOLOGY, University of California, San Diego (UCSD), for Ph.D.'s and M.D.'s for a 2- to 3-year research program for July 1988 and January 1989 in the biology of calcium metabolism. Applicants must be eligible for NIH training grants. Specific areas include: molecular and cellular biology of calcium-regulating hormones and their receptors, bone matrix proteins and minerals. Send curriculum vitae references to: **Dr. L. J. Deftos, UCSD (V111C), San Diego, CA 92093. Affirmative Action/Equal Opportunity Employer.**

RESEARCH DEVELOPMENT AND SENIOR SCIENTIST AWARDS

The National Zoological Park, Smithsonian Institution (NZP) is expanding and diversifying its programs in whole animal biology and offering two rotating research fellowships: the Research Development and Senior Scientist Awards. Preferred areas of interest are in evolutionary biology, animal behavior, physiological zoology, ecology, sociobiology, conservation biology, or veterinary sciences. Applicants whose interests complement those of the NZP's current professional research staff will be preferred. Each award will be for a maximum of 3 years. Stipends will be commensurate with level and experience. The Research Development Award is to permit mid-level scientists (at least 6 years post-Ph.D.) to complete a major piece of research in their specialty, as well as to gain experience in research opportunities specific to zoological parks. The Senior Scientist Award is for distinguished scientists with significant research contributions. Timing of the Senior Scientist Award and its duration are flexible. The total duration of the appointment cannot exceed 36 months, but it may be divided into several intervals, not less than 6 months each. Field research during the tenure of these fellowships is appropriate; however, fellows will be expected to be primarily based at the NZP during their tenure so as to maximize their interactions and collaborations with zoo staff. Applications should include a Statement of Interest, and Outline of the Objectives and Significance of the proposed research and its relation to the mission of the NZP. Additionally, applicants should send a complete résumé, copies of their most significant publications, and arrange for three letters of reference to be forwarded to: **Devra G. Kleiman, Assistant Director for Research, National Zoological Park, Washington, DC 20008, to whom additional inquiries should also be made. Please specify for which award you are applying. Application deadline is 1 April 1988.**

FELLOWSHIPS

The Materials Science and Engineering Department of the University of Utah has available a number of **GRADUATE FELLOWSHIPS** in its areas of specialization. These areas include: ceramics, composite materials, polymeric materials, compound semiconductor materials, chemical analysis of materials, and microwave and ultrasonic characterization of materials. These fellowships provide \$10,000 to \$12,000 per year stipends. For applications and more information write:

**Professor Joel B. DuBow, Chairman
Materials Science and Engineering
2220 MEB
University of Utah
Salt Lake City, UT 84112**

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PLANT AND FUNGAL MOLECULAR BIOLOGY. Inquiries invited from qualified applicants for **GRADUATE FELLOWSHIPS** in: biochemistry, botany, or microbiology. Research areas include: tuber, seed, and other plant proteins; electrophysiology of membranes; aluminum toxicity; stress physiology (water, freezing, pollution, and biotic) of temperate and tropical trees; molecular genetics of filamentous fungi (recombinant DNA, DNA-mediated transformation, and structure and function of mating-type and developmental genes). Full tuition and stipend. Write: **Dr. Robert C. Ullrich, Department of Botany, Life Science Building, University of Vermont, Burlington, VT 05405.**

POSTDOCTORAL RESEARCH FELLOWSHIPS in psychoneuroimmunology are available through an NIMH Institutional Training Grant available 1 July 1988 or later. This is an interdepartmental and multidisciplinary program designed to provide coursework and research experience in immunology for Fellows trained in the behavioral or neurosciences and, conversely, to provide training in the neurosciences for Fellows with a background in immunology. The emphasis is on research and Fellows may work with one or more faculty from the Departments of Psychiatry, Neurobiology and Anatomy, and Microbiology and Immunology in any of several aspects of brain, behavior, immune system interactions. Ph.D. and M.D. candidates must be citizens or permanent residents of the U.S. Two-year minimum. Send letter outlining goals and a brief description of research interests, curriculum vitae, and the names of three references to: **Robert Ader (Department of Psychiatry), David Felten (Department of Neurobiology and Anatomy), or Nicholas Cohen (Department of Microbiology and Immunology), University of Rochester Medical Center, Rochester, NY 14642. Equal Opportunity/Affirmative Action Employer.**

PRE- AND POSTDOCTORAL FELLOWSHIPS IN RESPIRATORY BIOLOGY HARVARD SCHOOL OF PUBLIC HEALTH

Program areas include airway physiology and pharmacology, macrophage biology, respiratory muscles, mechanisms of lung injury and environmental disease, and aerosol deposition and clearance. Appropriate backgrounds include physiology, cell biology, engineering, or other biomedical sciences. *Women and minority candidates encouraged.* Please contact: **Dr. Joseph Brain, Respiratory Biology Program, Harvard School of Public Health, 665 Huntington Avenue, Boston, MA 02115. Telephone: 617-732-1471.**

PREDOCTORAL FELLOWSHIPS IN BIOMEDICAL AND PHYSICAL SCIENCES

Biochemistry • Biology • Biomathematics • Biomedical Engineering • Biophysical Sciences • Biostatistics • Chemistry • Computer Science • Cell Biology and Anatomy • Environmental Health • Epidemiology • Genetics • Immunology • Materials Engineering • M.D.-Ph.D. • Medical Genetics • Medical Psychology • Microbiology • Molecular Cell Biology • Neuroscience • Nutrition Sciences • Pathology • Pharmacology • Physics • Physiological Optics • Physiology • Public Health • Virology

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PLANT BIOTECHNOLOGY

Sogetal

Sogetal, Inc. is launching a vigorous program for the genetic engineering of cereals. We are inviting well qualified and experienced scientists in the areas of plant molecular biology and tissue culture to apply for the key positions which will be open in early 1988.

Sogetal, located in the San Francisco Bay Area, is a research center for ORSAN, the biosciences division of LAFARGE COPPEE. We have developed leading technology for the hybridization of small grains, and have an established program in cereal tissue culture.

We announce the following openings in our multidisciplinary program:

Senior Plant Molecular Biologist

(2 positions)

The ideal candidates will have a PhD in a plant science with extensive hands on experience in molecular biology including vector construction, plant transformation, and gene expression.

Senior Plant Tissue Culturist

(1 position)

The ideal candidate will have a PhD and at least 2 years of post doctoral experience in a plant science including a background in the tissue culture of cereals with a detailed knowledge of regeneration and transformation methods in monocots.

Candidates for all positions should have excellent communication skills as well as supervisory experience.

Interested applicants please send curriculum vitae to:

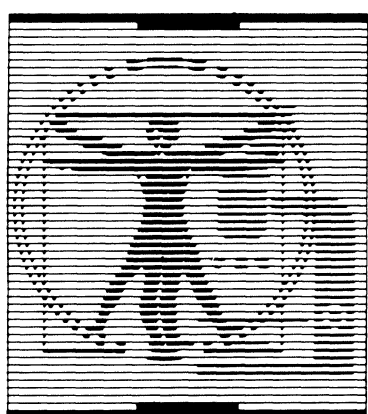
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new discoveries at the National Cancer Institute — Frederick Cancer Research Facility, Frederick, MD. We are looking for uniquely skilled professionals to direct existing laboratories.

PRECLINICAL EVALUATION LABORATORY

This laboratory supports the Biological Response Modifiers Program (BRMP) for which we are developing and using animal models to predict BRM anti-tumor activity. We are using this information to optimize protocols for the use of these agents in human clinical trials. Additionally, efforts will be made to evaluate new agents for their BRM activities in animal models.

CLINICAL MONITORING AND LAK LABORATORY

This laboratory also supports the BRMP for which we generate LAK cells to be used in patients for adoptive immunotherapy trials in patients receiving various BRMs (interferons, tumor necrosis factors, colony-stimulating factors, monoclonal anti-

bodies). This is an excellent opportunity for a clinically oriented scientist to be involved with design and implementation of protocols for experimental treatment of human cancer.

The scientists we seek should have a PhD or MD degree with proven experience in the areas of immunological testing and animal tumor modeling. Laboratory management experience is also desirable.

PRI will provide successful candidates with an excellent compensation and benefits package, including relocation assistance. For consideration, please send your resume and names of three references to: Personnel Manager, Program Resources, Inc., NCI-Frederick Cancer Research Facility, P.O. Box B, Frederick, MD 21701. An equal opportunity employer, M/F.



PROGRAM
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Some of the international meetings scheduled for 1988 are:

5th European Workshop on the Molecular and Cellular Endocrinology of the Testis
Brighton, UK / April 13-16
Scientific Organization: B.A. Cooke (UK)

Endocrinology Under 35
Florence, Italy / May 23-25
Scientific Organization: M. Maggi (I) and C.J. Johnston (USA)

Platelets and Vascular Occlusion
Rome, Italy / June 1-3
Scientific Organization: G.A. FitzGerald (USA) and C. Patrono (I)

Advances in Biotechnology of Membrane Ion Transport
L'Aquila, Italy / September 19-20
Scientific Organization: R. Verria (I), P.L. Jørgensen (DK) and R.P. Garay (F)

Third Conference on Differentiation Therapy
Villasimius (CA), Sardinia/September 6-9
Scientific Organization: G.B. Rossi (I), F. Takaku (J) and S. Waxman (USA)

The Adrenal and Hypertension: From Cloning to Clinic
Tokyo, Japan / July 25-26
Scientific Organization: E.G. Biglieri (USA), J. Funder (AUS), F. Mantero (I) and R. Takeda (J)

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